International Network for Transport and Accessibility in Low Income Communities

INTALInC

Report by INTALInC

Transport and Social Exclusion in Nigeria

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VREF

Contents

Introduction

As a follow up to the INTALInC workshop held in Nigeria, Volvo Research and Education Foundation (VREF) requires a country report on the specific aspects of transport that affect the accessibility and livelihoods of the poor and most vulnerable section of the population. This report therefore is a review of existing literature, data and on-the-ground projects in Nigeria and transport-related issues. Data from the Nigeria Bureau of Statistics, state government publications, journals and reports of commissioned projects were utilised. The report has attempted to evaluate all these data as logically as possible and made best efforts at presenting them in a simple and as clear as possible manner.

Nigeria has evolved from a largely agrarian country to one of the fastest growing economies in the global south. From a modest population of 45.1m in 1960, Nigeria's population has grown to an estimated 170 million in 2016 almost evenly spread out. However, in the 1970s oil took the driver's seat of the economy as the main revenue generator, which decapitated agricultural production. This informed the large exodus of the rural dwellers who abandoned their farms for city jobs, leaving the rural areas almost empty and bereft of the necessary manpower required to drive the rural economy.

The implication is the urban sprawl found in cities such as: Lagos, Port Harcourt, Kano, Kaduna, Aba, Owerri, Warri, Benin City, Ijebu- ode, Abeakuta, Jos among others. The influx of these migrants has put tremendous pressure on existing urban support infrastructures such as housing, transport, water, education and hospitals. In many of these cities, the traffic situation became compounded especially in the early 1970s when the Federal Government doled out car loans to Federal Civil Servants *(Udoji award*) to buy their own cars rather than improve the public transport system. Nigerians, especially in Lagos State where the bulk of the country's civil servants reside, publicly embraced this faulty generosity and reduced Lagos to what it is today. According to Okpala, (1977) private car ownership was relatively a new phenomenon in the country; most Nigerians saw it as a status thing, so that when Government decided to restrict automobile movement in the state through the odd and even number edict of 1975, it was rather too late.

Currently, Lagos State has the worst transport problem in the country and has recently being judged as the 3rd most unliveable city to live in globally. The brunt of this is mostly felt by the low income and other vulnerable group. Most transport plans do not consider their interests or needs, and they are also mostly left out at implementation stages.

This report aims at examining the socio-economic profile of Nigeria and its relationship with transportation and how it impacts the vulnerable group with special reference to Lagos.

Country Profile

Location

Nigeria is located in West Africa, it occupies an area of 923,768 sq. km (356,669 sq mi), extending 1,127 km east to west, and 1,046 km from north to south. It is bounded by Chad to the North East, by Cameroon to the East, the Atlantic Ocean (Gulf of Guinea) to the South, Benin (formerly Dahomey) to the West, and Niger to the North West and North, with a coastline of 853 km from Lagos to Calabar (West to East). Nigeria's capital is Abuja and its located in the centre of the country.

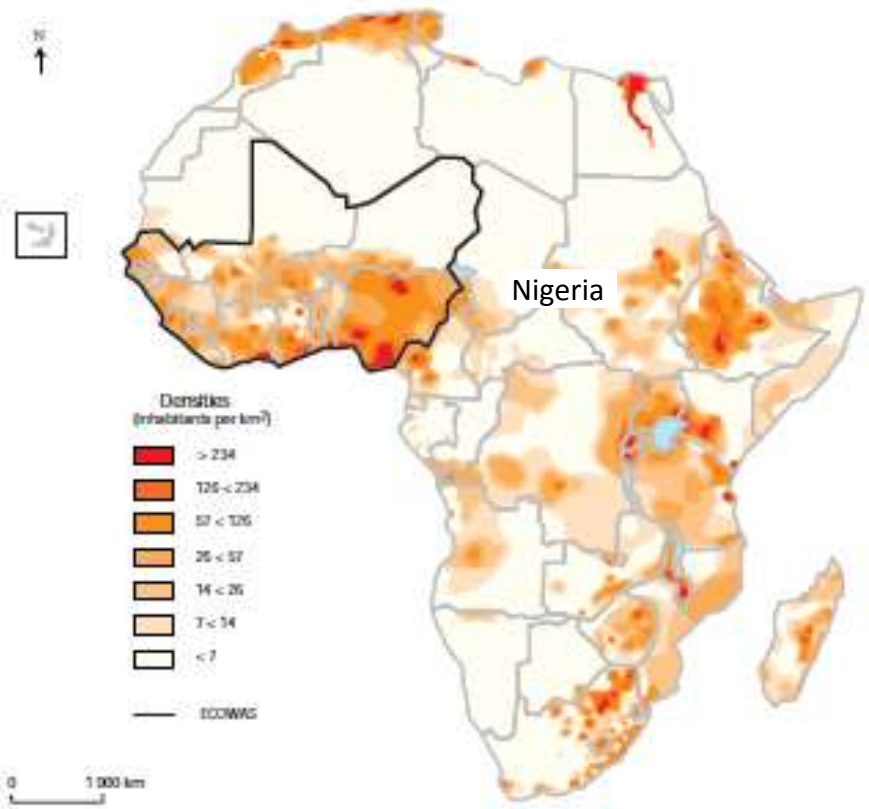

Fig. 1.1 Position of Nigeria in Africa

Source Transport Atlas

Fig. 1.2 Nigeria's neighbours in West Africa
Source: Transport Atlas

Population profile – urban/rural.

Nigeria's population is currently estimated at 180 million people. The profile shows an uneven spread between urban and rural areas. About three decades ago, Nigeria was largely described as an agrarian country with more than 70% of its population engaged in agriculture. However, current trends in the population spread show that the structure has largely tilted towards increasing urbanisation and the continuous dependence on imported food. This development has reduced food supply in some parts of the country, where areas have been variously referred to as food deficit areas, further increasing the propensity of the rural dwellers to migrate to areas of food surplus and increasing clashes between herdsmen and local communities. Fig. 1.3 shows areas of food deficit in Nigeria.

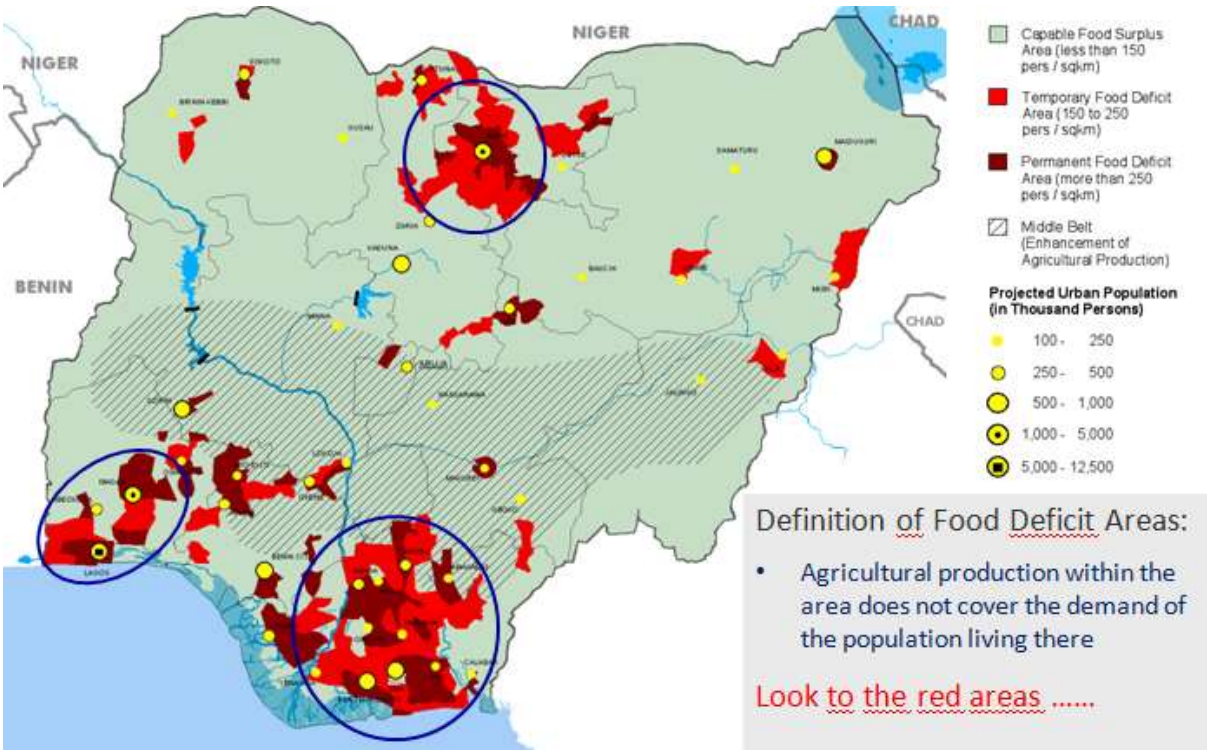

Fig. 1.3 Spatial food profile of Nigeria
Source: JBN Lecture 2016

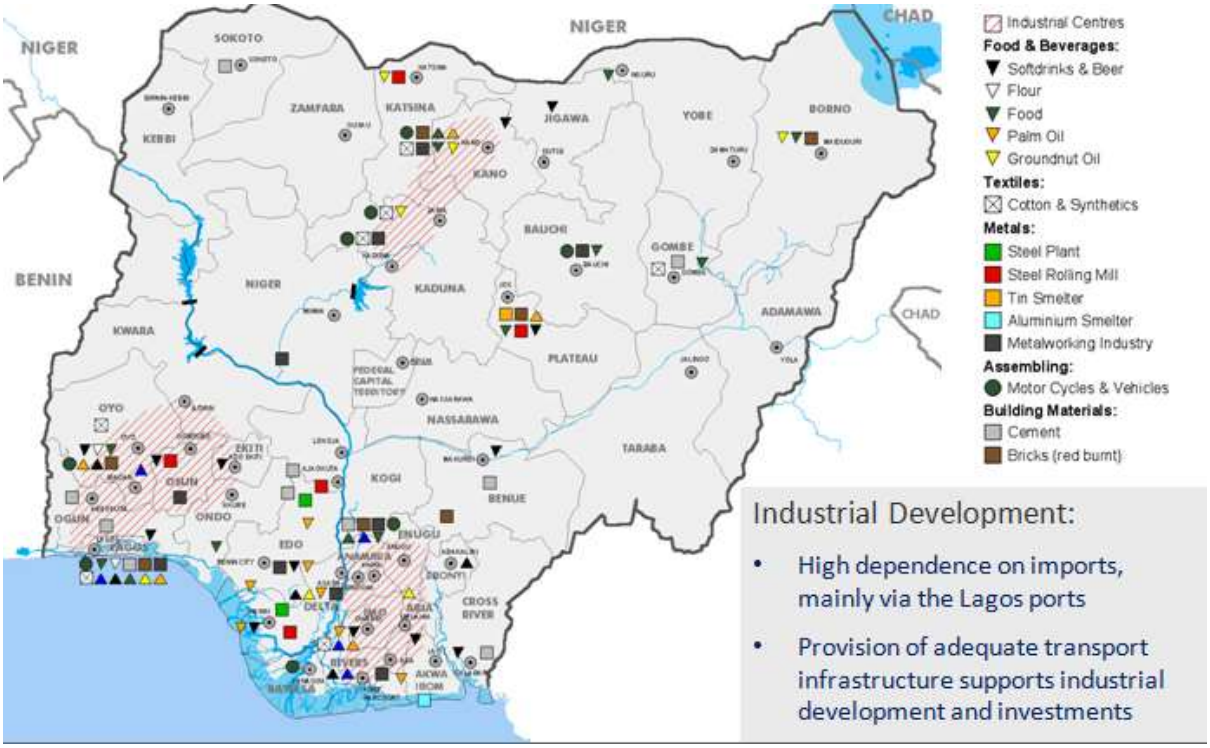

Fig. 1.4 Industries in Nigeria mainly depend on imported raw materials
Source: JBN, 2016

Urban population

Urbanisation has increased without much control, and incentives to discourage rapid urbanisation have not made much impact. The implication of this is that most young adults, especially male adults, have moved to the city. Unfortunately, most of these migrants come to the city with the hope of finding employment and are shocked to discover that they don't have the prerequisite skills to get jobs, or fit into the economic system. The result is a large pool of unemployed people roaming the streets; others are enterprising enough go into menial jobs such as hawking, bus conducting and scavenging at waste sites for possible recyclable materials. Some take to crime, fraud, and drugs, while most of the females are engaged in the sex trade and drugs.

Several efforts at curbing youth unemployment by the government, organised private sector and civil society organisations include: back to farm initiatives, the establishment of micro finance banks, the establishment of government skill acquisition centres, the granting of amnesty to Niger Delta Militants, the sponsoring of youth skill training abroad, and the establishment of Y-Pee, overseas job placement for skilled youths, among many other schemes. Despite all these however, youth unemployment is high often leading to frustration whereby many youths especially in the northern regions are now permanently hooked on drugs such as tramadol an abused analgesic, codeine an abused cough expellant, and EvoStick, an abused wood glue, among others. The Federal Government was forced to place a temporary ban on Tramadol and drugs that contain codeine.

Rural Population

The Nigerian rural population has been left behind. Though relatively peaceful, rural areas have been left almost empty of basic support infrastructures such as electricity, roads, decent housing, and portable water. The absence of these infrastructures has impacted negatively on rural economic activities, agro-allied cottage industries cannot thrive, low or no manufacturing industries and low government presence. All of these combine to make the rural areas unbearable to live in. The implication is the mass exodus of youths to the urban areas thereby worsening the economic situation of the rural areas. Fig.1.4 shows the spatiality Nigeria's population.

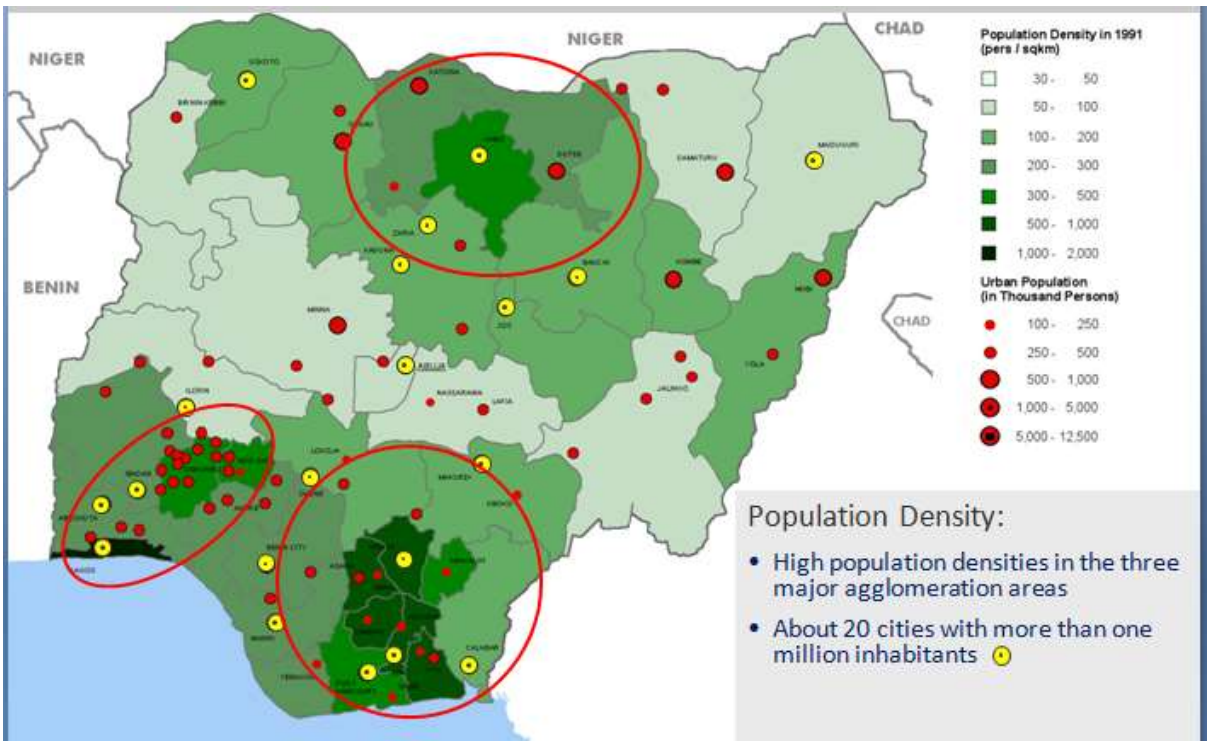

Fig.1.4: Population spread in Urban and rural Areas
Source: JBN Lecture 2016

Health Inequalities

Health – inequalities

Heath care in Nigeria has improved significantly if compared to situations that prevailed in the 1970s and early 1990s when access to health care, especially in the rural areas was very difficult. Now, many rural areas have primary health care facilities and modern hospitals.

Facilities

i. Ownership

Health care in Nigeria is administered at four levels through Federal Governments which run the Federal Medical Centres and the Federal Teaching Hospitals attached to Federal Universities. The State government run the general hospitals (Secondary Health Centres), local governments run the primary health centres and individuals and organisations run private and trado-medical centres. Nigeria has 36 states and there are currently 22 Federal medical centres located in the state capitals, at least one general hospital in each local government area, at least one primary health centre in each town in a local government area. The general hospitals, private and trado-medical centres are regulated by the State medical councils, while the federal medical centres and the Federal Teaching Hospitals are regulated by the Federal Ministry of Health.

ii. Regional Spread and variation

The regional spread of Federal Medical Centres (FMC) and the Federal Teaching Hospitals (FTH) shows an almost equal distribution of health facilities across the six geo-political zones in the country, except for the south east which post a slightly low number. No reason can be suggested here for this, because the region has very many educated elites and professional populations. The North has the highest number of federal medical facilities; this may due to the vastness of the region and its high population. Lagos State located in the south west of Nigeria has more hospitals at all levels than all of the North East states put together.

Table 2.1 shows the distribution of health facilities across regions in Nigeria, while fig. 2.1 shows an aggregate summary of these facilities across the country. Table 2.2 which shows the number of primary and secondary health facilities in states in Nigeria.

Table 2.1: Regional Spread of Federal Health facilities (tertiary) in Nigeria source Federal Ministry of Health

	State	Population	FMC	FTH	REG
1	Kano State	9,383,682	0	1	NW
2	Lagos State	9,013,534	1	1	SW
3	Kaduna State	6,066,562	0	1	NW
4	Katsina State	5,792,578	1	0	NW
5	Oyo State	5,591,589	0	1	SW
6	Rivers State	5,185,400	0	1	SS
7	Bauchi State	4,676,465	1	1	NE
8	Jigawa State	4,348,649	1	0	NW
9	Benue State	4,219,244	1	0	NC
10	Anambra State	4,182,032	0	1	SE
11	Borno State	4,151,193	0	1	NE
12	Delta State	4,098,391	1	0	SS
13	Imo State	3,934,899	1	0	SE
14	Niger State	3,950,249	1	0	NC
15	Akwa Ibom State	3,920,208	0	1	SS
16	Ogun State	3,728,098	1	0	SW
17	Sokoto State	3,696,999	0	1	NW
18	Ondo State	3,441,024	1	0	SW
19	Osun State	3,423,535	0	1	SW
20	Kogi State	3,278,487	1	0	NC
21	Zamfara State	3,259,846	1	0	NW
22	Enugu State	3,257,298	0	1	SE
23	Kebbi State	3,238,628	1	0	NW
24	Edo State	3,218,332	0	2	SS
25	Plateau State	3,178,712	0	1	NC

	State	Population	FMC	FTH	REG
26	Adamawa State	3,168,101	1	0	NE
27	Cross River State	2,888,966	0	1	SS
28	Abia State	2,833,999	1	0	SE
29	Ekiti State	2,384,212	1	0	SW
30	Kwara State	2,371,089	0	1	NC
31	Gombe State	2,353,879	1	0	NE
32	Yobe State	2,321,591	1	0	NE
33	Taraba State	2,300,736	1	0	NE
34	Ebonyi State	2,173,501	0	1	SE
35	Nasarawa State	1,863,275	1	0	NC
36	Bayelsa State	1,703,358	1	0	SS
–	Abuja Federal Capital Territory	1,405,201	1	2	NC
	TOTAL	140,003,542	22	20	

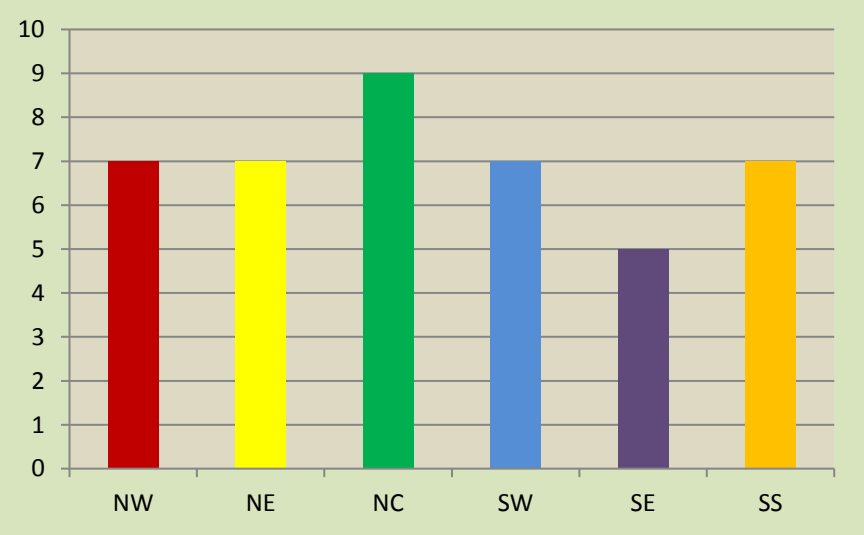

Fig. 2.1: Regional variation of health care facilities in Nigeria

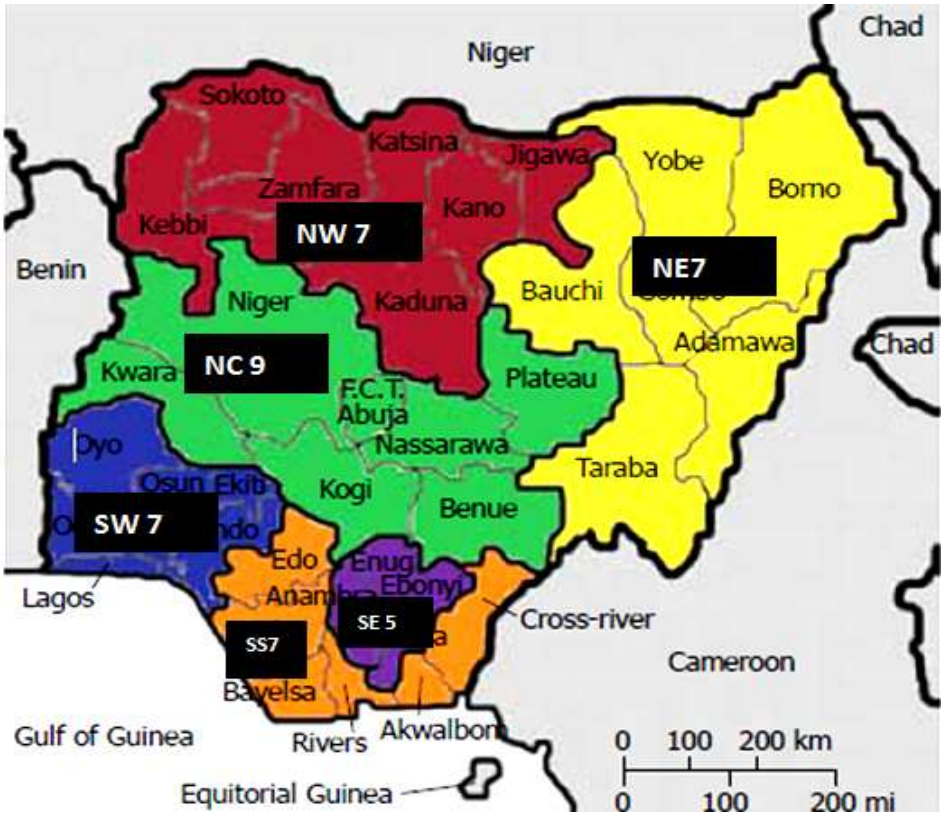

Fig. 2.2 Geo-political Regions and Federal Medical Facilities

NC-North Central, **NW**-North West, **NE**-North East, **SW**-South West, **SS**-South South, **SE**-South East.

Table 2.2: Primary and Secondary Health Facilities owned by State Governments

State	Health Care Facilities	
	Primary	Secondary
Abia	519	95
Abuja (FCT)	559	90
Adamawa	998	28
Akwa Ibom	356	186
Anambra	1360	123
Bauchi	1010	22
Bayelsa	172	58
Benue	1111	94
Borno	421	52
Cross River	597	135

State	Health Care Facilities	
	Primary	Secondary
Delta	805	102
Ebonyi	516	48
Edo	870	48
Ekiti	395	62
Enugu	524	342
Gombe	508	22
Imo	808	527
Jigawa	595	16
Kaduna	1524	33
Kano	1142	39
Katsina	1463	32
Kebbi	380	31
Kogi	869	208
Kwara	567	172
Lagos	1785	460
Nasarawa	874	33
Niger	1567	16
Ogun	1372	145
Ondo	769	39
Osun	1030	61
Oyo	763	470
Plateau	835	47
Rivers	417	54
Sokoto	668	43
Taraba	1030	14
Yobe	466	28
Zamfara	698	20
Total	30345	3993

Source: Federal Ministry of Health

Access to Healthcare

i. Urban

The continuous decline in the national economy in the last three decades, has informed rapid rural urban drift. Most of these migrants are low income persons who do not possess any of the requisite skills needed in urban areas to work and so do not have any means of supporting themselves or finding adequate accommodation; their only option is to join the nondescript informal communities, considered by the State government to be a 'blight'. They live with a constant threat of forced eviction and an absence of urban support facilities such as portable pipe borne water, electricity, sanitation, schools, and health centres. (INTALInC, 2017). This has created urban health crises such as inadequate safe water supply, slums, solid and human waste management issues, and unkempt environments among others (Aliyu and Ahmadu, 2017) making such settlements dangerous and vulnerable to epidemics.

Access to urban areas in such congested informal settlements is often difficult. Most of the slum dwellers cannot afford the services of private hospitals and the few government hospitals are usually full to overflowing, with a doctor-patient ratio of about 1:600 especially in the Northern region where there is dearth of medical personnel in many hospitals. This has increased patients waiting time (PWT), a situation that has encouraged the emergence of quacks and unregistered clinics.

According to the INTALInC workshop report (October 2017), access to health and information about the health status of slum dwellers is not streamlined in low-income communities and informal developments. Urban health surveys are not carried out within slums and informal settlements (because they are considered to be blights). This has created a gap in available evidence relating to health conditions and needs in low-income, informal communities. This tendency to bypass entire communities in the processes of data collection has direct negative consequences on the delivery of health services and facilities. Anecdotal and observational evidence suggests that the coverage of clinics and availability of medical professionals within reasonable distance or within informal settlements is limited or non-existent. This is underpinned by lack of awareness of the relevance of accessibility in urban health programmes and increasingly unequal health outcomes related to poor access and connectivity to urban health facilities in low-income groups. For instance Makoko, an informal settlement on the Lagos Lagoon, does not have a registered clinic for an estimated population of 70,000.

ii. Rural

Access to health care in rural Nigeria is marred by many factors such as low numbers of health facilities, the absence of medicines and of care givers, seasonality of roads, long waiting time for vehicles, cultural beliefs, and frequent power outages. It has been variously reported that the average distance travelled to access a primary health facility in Nigeria's rural south is

about four kilometres, while it may be about seven to 10 kilometres in the North. In the Northern region, where rural settlements are far apart, the number of health facilities is very low and healthcare provision is worsened due to the absence of transportation. Also, health care providers in the rural areas are deprived of the instruments necessary to work and the means of labour. As a result healthcare is at risk in Nigeria's rural areas. (Nnabuihe *et al*, 2015)

Health Care Personnel

The Nigerian health system is grossly under-funded with a per capita expenditure of US$ 9.44 (World Bank, 2010). One implication of this is the poor health care service currently provided in Nigeria. Nigeria has a very challenging healthcare problems and sadly accounts for 10 percent of the world's maternal deaths, at 87 out 1000 births. Also, there is a high rate of absenteeism among medical personnel especially in rural areas. (Manyong *et al* in Abdulkadir and Abdullahi**,** 2016). Doctors and other care givers avoid been posted to the rural areas due to the uncomfortable living conditions. This patter is repeated among members of the National Youth Corps who also avoid being posted to these areas. The situation is even worse in the northeast part of Nigeria, where the fight against insurgency has made it difficult for medical personnel to accept posting. Table 2.3 which shows the distribution of healthcare personnel and demonstrates the serious deficiency in the north.

Table 2.3: Number of Health care personnel in Nigeria

STATE	DOCTORS		DENTISTS	
	2010	2011	2010	2011
Abia	200	65	5	2
Adamawa	58	6	1	2
Akwa Ibom	179	176	5	1
Anambra	450	375	8	4
Bauchi	31	4	6	2
Bayelsa	147	141	2	4
Benue	103	88	4	2
Borno	154	168	8	7
Cross River	101	49	2	2
Delta	77	217	19	14
Ebonyi	109	172	1	4
Edo	603	722	53	62
Ekiti	187	233	12	15

STATE	DOCTORS		DENTISTS	
	2010	2011	2010	2011
Enugu	552	395	16	14
Gombe	76	81	1	3
Imo	354	289	4	2
Jigawa	48	6	4	-
Kaduna	488	323	11	15
Kano	411	315	8	12
Katsina	21	8	-	-
Kebbi	9	-	-	-
Kogi	90	58	1	2
Kwara	306	116	8	10
Lagos	2,029	2,575	108	159
Nassarawa	75	21	3	1
Niger	116	10	4	1
Ogun	348	379	15	10
Ondo	315	238	8	10
Osun	345	463	23	34
Oyo	517	602	55	66
Plateau	354	368	10	6
Rivers	587	604	19	32
Sokoto	146	9	1	-
Taraba	8	66	-	1
Yobe	34	2	-	-
Zamfara	36	1	1	-
FCT	735	930	29	54
Total	10,399	10,275	455	553

Source: NBS

Education and Literacy

Educational Development

According to the National Bureau of Statistics, (2015), before the advent of colonial administration, education was usually organised at family level and was never formalised. However, the establishment of a primary school by the Methodist church missionaries in Badagry, Lagos in 1843 marked the beginning of formal education in Nigeria.

This first private school in Nigeria was followed by the founding of the first secondary school, CMS Grammar School, by Christian missionaries in 1859. By the end of 1914, after the amalgamation of the Northern and Southern protectorates by the British, there were a total of 59 government and 91 missionary primary schools in the south. The relatively low number of schools established in the north was largely due to a resolve to stick more to Arabic and Islamic education in the region. By the 1920s, more schools were added by local communities to meet the growing demand of formal education. Since then, educational institutions have been established by the private sector, and the tiers of government across Nigeria. Currently Nigeria has 165 Universities both government and private and 130 polytechnics.

Literacy

By 2014, the net attendance for primary school in Nigeria, stood at 68.7% compared with 2012, which was 71%. Similarly, secondary school net attendance rate was 54.80% and 57.40% in 2012 and 2014 respectively. (NBS, 2015)

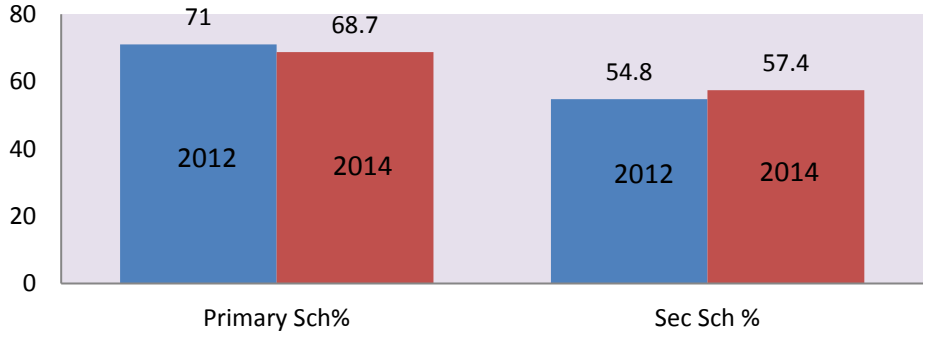

Fig. 3.1 Secondary and Primary School attendance in Nigeria source: NBS 2015

Additionally, primary six completion rate stood at 87.7% in 2012 and had declined by 2014 to 74%. The literacy rate of female 15-24 year-olds stood at 66% in 2012, increasing to 66.70% by 2014. As of 2010, an estimated three million children, aged between six and 14 had never attended any school in Nigeria. This trend is more prevalent in the north, where many children are left roaming the streets at the mercy of passers-by. The figure represents 8.1% of the

population of children within that age group. Also, between 2012 and 2014 about a million children aged between six and 14 years dropped out of school across the country due to hardship and unproductive cultural practices, a figure representing 3.2% of the population of children in the age group. (NBS, 2015). The implication is a weakened future workforce.

Literacy and Rural/Urban Variation

There are regional variations as percentage of the population that attended schools. In 2010 the figure was higher in urban areas (91.4%) than in rural areas (80.7%).

Literacy and Gender Variation

Gender variation still exists in school attendance in Nigeria. In 2014, female attendance stood at 81.2%, lower than that of males at 88.1%. This can be traced to cultural practices which discriminate against girls in core Islamic communities, where girls are often forced into marriage, and in rural and urban areas in the south where girls have to wait for their brothers to finish school before their attendance is considered.

Table 3.1: Literacy and Gender Variation

No	Year	Students' Enrolment	Gender	
			Male	Female
1	2010	25,754,380	77.5%	22.5%
2	2011	32,834,449	80.1%	19.9%
3	2012	37,911,596	83.82%	16.18%

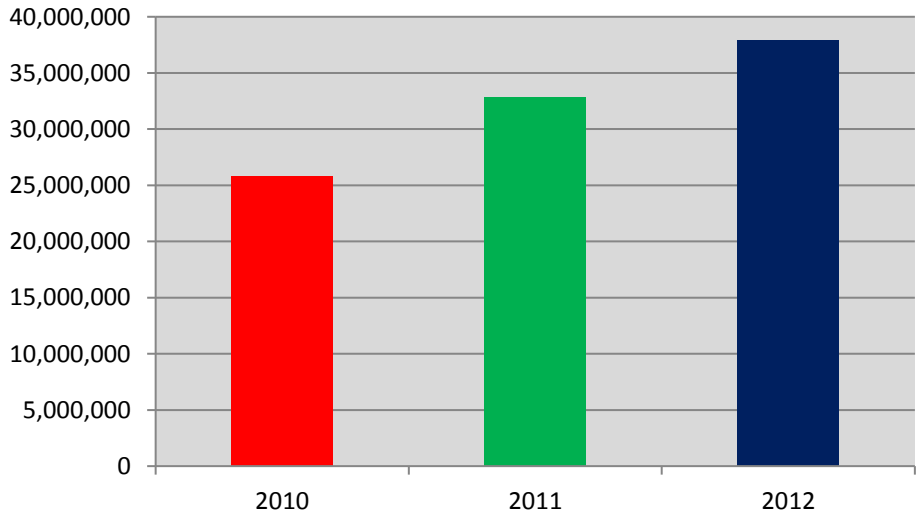

Fig. 3.1: Students' Enrolment

Nigerian female student numbers increased at an average of 4.13% between 2010 and 2012, while their males increased at an average of 26.42%.

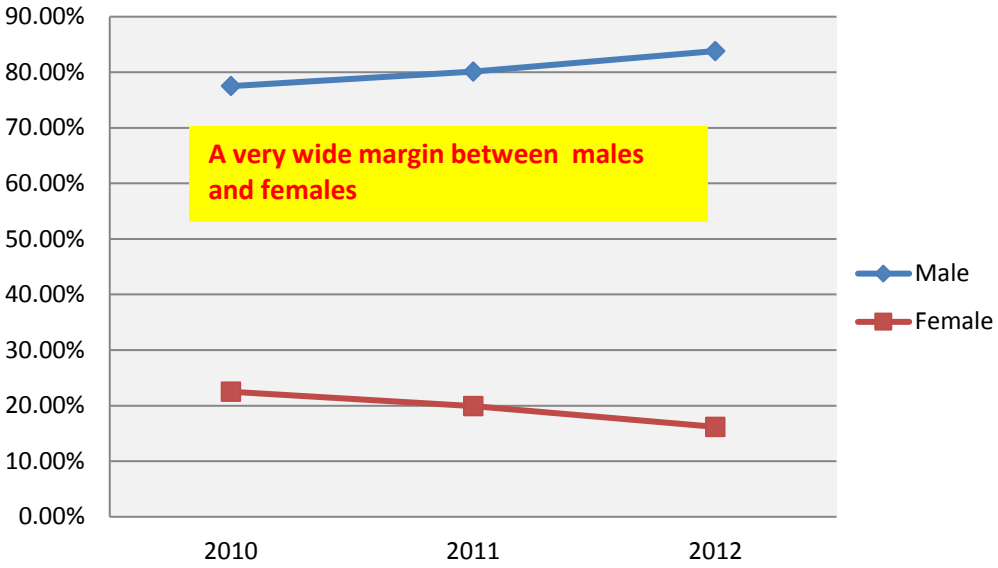

Fig.3.2 Enrolment and Gender Variation

Housing

Formal and Informal/Slum Dwellers

Housing type and quality differ greatly along income level in Nigeria. In most advance climes, many houses have all the basic facilities to qualify a building to be called a house. However, in Nigeria, houses define the status of the occupant.

The growth of the population of the country increased astronomically over the last decade while the provision of urban infrastructure and housing has not grown in commensurate proportion to meet this demand. This has resulted in an acute shortage of housing. Lagos alone accounts for about five million of the deficit, representing 31% of the estimated national housing deficit of 18 million (Oshodi, 2010). The implication of this is the development of the slums springing up in urban areas. The urban poor, who are dominant in these slum areas, especially in Lagos, are transforming the city to meet their needs, often in conflict with official laws and plans (Oshodi, 2010).

Housing Types and facilities

In the slum areas, people live in housing type described as single room 'face to face' and share common conveniences, including kitchens. For instance, the NBS (2015) reported that the percentage of households using modern toilet facilities (e.g. flush to sewage or flush to septic tank) declined from 13.7% in 2007 to 11.6% in 2010. The percentage of households living in a single-room stood at 68.6% in 2007, and declined to 59.2% in 2010. The decline in households occupying flats is increasing as more households are relocating to slums as a result of increasing rents in the city centres.

Plate 4.1: A slum in Lagos, Nigeria

For instance most houses in low income informal areas do not have good access to portable drinking water. According to the National Bureau of Statistics (2015), **t**he percentage of

households with access to pipe-borne water declined from 10.4% in 2008 to 9.5% in 2010 also, those with access to a borehole/hand pump declined from 26.8% in 2008 to 21.5% in 2010. In parts of the country with low rainfall, about 44.3% of low income households depend on naturally occurring water such as rainfall, wells and streams a value which has increased over the years. For instance, in Edo State, rainwater harvest is common among rural dwellers who are mostly low income people. Here, rainwater is harvested from roof tops and stored in underground tanks to be used for domestic purposes. One observation is that, the water is neither boiled nor passed through any form of treatment before consumption. (Oni *et al*, 2004).

Refuse Disposal and Sanitation

Most slum dwellers and low income households dump their refuse by street corners at night. The core slum dwellers just dump it in front of their homes as in places like Makoko, Orile Badia, and some parts of Ajegunle in Lagos state, Yanya near the Federal Capital territory in Abuja, Television village in Kaduna and other rundown areas.

Plate 4.2 Refuse disposal at Makoko

One reason why housing stock and quality will remain low is because funds for housing loans are never available and where it is, the conditions for accessing these loans are so stringent that most people, especially low income populations, are not able to apply for them.

Income (Percentage in poverty / low income)

Employment –Males, Females

Employment is subdued due to Nigeria's current economic situation, which has forced many to seek informal or very low paying jobs and high levels of disguised unemployment among youths and females aged between 40-60 years. Anugwom (2009) in Dennis Brown Ewubare & Ogbuagu (2017) examined the implications of the growing educational opportunities for women in Nigeria and wondered why, despite the increasing number of women accessing tertiary education, the numbers are not reflected in the labour market. Women suffer from discrimination when job hunting: most employers would want women who are unlikely to have babies within the first two years of employment, or women are employed as marketeers for companies and must accept harassment from men. Employment statistics for males and females shown in Fig. 5.1 reveal that there is a consistent rise in male employment across the specified age bracket compared to the females.

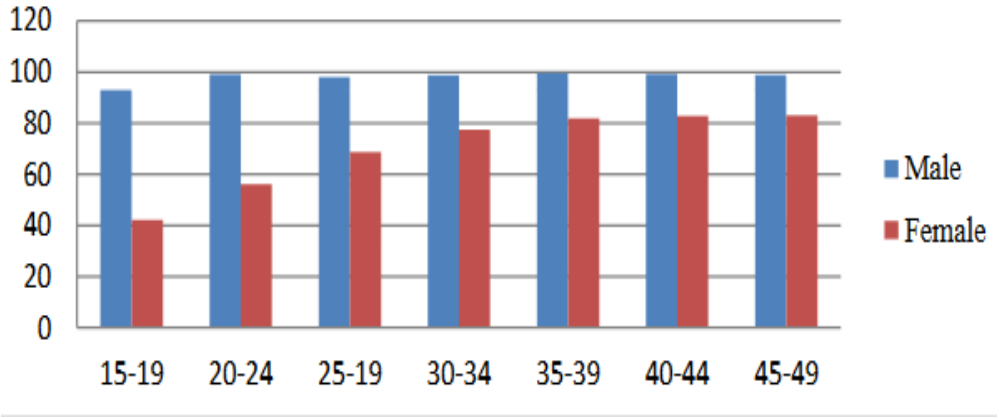

Fig. 5.1: Percentage of employed men and women in Nigeria in 2013
Source: Anugwom (2009)

According to Anugwom (2009), women in Nigeria are predominantly engaged in subsistence agriculture and petty trading and less likely to be engaged in professional, technical and managerial fields and in governance than men. Women's age and educational level have a positive correlation on female labour force participation.

Regional variations of the employability of women in Nigeria show that more women in the south are likely to be educated and get good jobs than their counterparts in the North. Northern women lag behind those from the SE, SW and SS in skills, educational status, and enlightenment. These variables mitigate their active involvement in the development of Nigeria (*ibid.*)

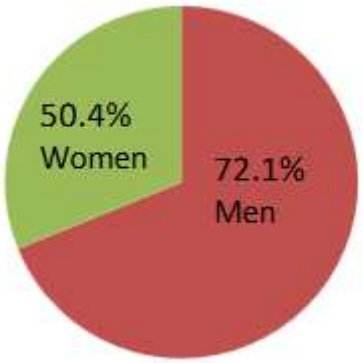

Fig. 4: Education imbalance between Women and Men source: Nigeria Demographic Profile 2014

The implication of this as it relates to income is that men becomes more economically empowered than women. If women are deprived from going to school, even at primary level, the impact increases at a higher level of productivity, thereby reducing their income and increasing their dependency.

Transport

Transport/travel context

Things have changed in Nigeria: the population has grown geometrically; the economy has expanded; inter-regional movement has increased; and yet the support infrastructure to facilitate this movement has not grown to meet the needs of the country. The neglect of the rural economy has made the movement of people from these areas inevitable, giving rise to unprecedented urbanisation. The World Bank forecasts that by 2050 the Nigerian population will be the 4th largest in the world, and that 70% of its citizens will live in urban areas.

Lagos

In response to the problems associated with travel in the state, the Lagos State Government had over the years implemented many traffic management and transportation schemes, including the introduction of the odd-and-even number edict, the expansion of some primary and secondary roads, the completion of the Third Mainland Bridge (TMB), the construction of Lagos Outer Ring Road (LORR), and the completion of Ikorodu road dualling, the introduction of the Bus Rapid Transit (BRT), expansion of local government traffic personnel, the establishment of Lagos State Traffic Management Authority (LASTMA), and the introduction of Bus Franchise Scheme (BFS) programme along the Ipaja/Ikotun Traffic Corridor.

In the Lagos State Government's continuous effort to address this situation, the Lagos Metropolitan Area Transport Authority (LAMATA) commissioned the setting up of Traffic Management Units (TMUs) at local government level and junction improvements. LAMATA adopted 120 roads within the metropolis now known as LAMATA declared roads. (Asenime, 2008)

Despite these initiatives, the pressures of increased demand for transport facilities in the local and metropolitan area have remained high and outstrip whatever efforts that have been made; this pressure is mostly felt in the south-east traffic corridor (Victoria Island, Ikoyi, Lagos Island and Obalende) and the central areas like Yaba, Mushin, Oshodi, Ikeja, Suru-Lere, Bariga, Shomolu, Ikotun, Isolo and Oyingbo/Ebutte-Meta.

It is obvious that road transportation has been over-burdened and is therefore no longer able to offer any solution to the mobility problems of the metropolis. In line with this, the Lagos government shifted its attention to other modes of which water transport presents a genuine solution.

Currently, Inland water transport (IWT) lacks a good profile within the transport sector and it is continuously ignored by transport planners and the commuting public. It suffers from a bad reputation and it is often erroneously perceived as slow, archaic, unbefitting, unreliable and

unsafe. Even with the drainage structure of the state giving it one of the best water transport systems in the country, water transport contributes a minuscule 5% to passenger carriage

- **Walking**

Data from LAMATA (2015) for the metropolitan area of Lagos evidenced that current demand for transport – including walking trips - is above 22 million trips per day, of which 40% are made on foot. (INTALInC workshop, October 2017)

- **Public transport**

The irreversibility of urbanization in Lagos State has been accompanied by a phenomenal increase in the demand for public transport service and associated infrastructural facilities. The failure of public mass transit system has given rise to a continuous growth of private motorization with an average ridership of 1.2 persons per car. This growth has put increased pressure on the existing transport infrastructure, thereby giving rise to a perpetual state of congestion. Currently the problem has assumed a freighting proportion whereby commuters can be seen at bus stops waiting for buses that take too long to arrive and when they do, they are often filled to over flowing meaning that commuters are stranded for several hours. This has an effect on productivity, optimal manpower utilization, and rapid depreciation of roads, intolerance, increased accidents, pollution and poor visual contact.

Currently in Lagos, the demand for public mass transit has overwhelmed its supply; for instance nearly 97% of all public transport is supplied by road. Figure 6 shows the modal split for motorised trips, evidencing the prevalence of the traditional yellow minibuses (*Danfos*), which supply 72% of public transport, while private motoring accounts for 19% of daily travel demand. Data from the same source indicates that in contrast with the number of passengers each mode mobilises, the use or road space that they demand is unevenly distributed, which generates congestion and the social and environmental externalities described earlier in this section.

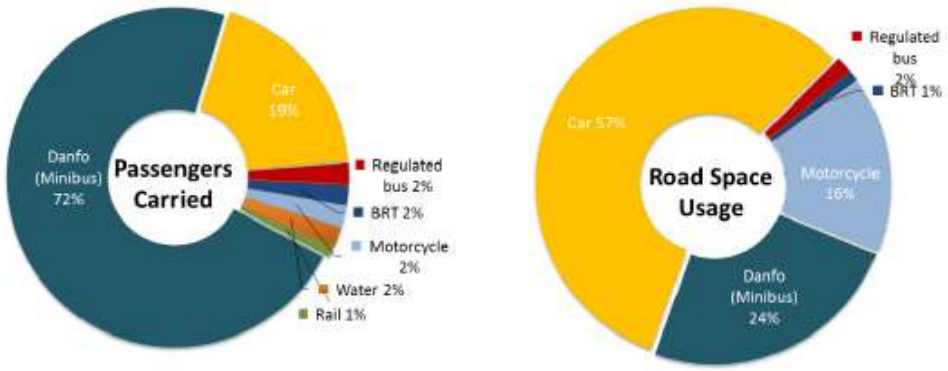

Fig 6.1: Public mobility
Source: INTALInC 2017

- **Vehicle ownership**

A study conducted in by Asenime (2017) to examine the relationships between income and vehicle ownership along the BRT corridor in metropolitan Lagos, shows that although vehicle ownership increases with household income (as shown in Table 5.9 and Fig. 5.5), non-ownership of vehicles is not restricted to low income earners. About 70.3% of households who earning below NGN 50,000 do not own a vehicle, while over 57% of households that earn between NGN 55,000 and NGN 100,000 have no vehicles also. Sixty-three % of households with a monthly income of between NGN 155,000 – NGN 160,000 own at least one vehicle. This further increases the number of families dependent on the BRT service. Also, the study shows that households with income above NGN 165,000 per month captured in this survey all have cars. This group may be targeted for future park and ride schemes to reduce congestion, energy use and air pollution. The enhancement of the existing park and ride scheme will further promote the visual aesthetics of the corridor and other parts of the metropolis.

Table 6.1: Household Income and vehicle ownership

Household Income	**Type of vehicle owned by household**								**Total**
	Okada		Car		None		Okada and car		
	No	%	No	%	No	%	No	%	
<N50000	11	17.2	7	10.9	45	70.3	1	1.56	64
N55000 - N100000	4	6.8	21	35.6	34	57.6	0		59
N105 - N150000	0		15	60	9	36	1	4	25
N155000 - N160000	0		12	63.1	6	31.6	1	5.3	19
N165000 and above	0		27	100	0		0		27

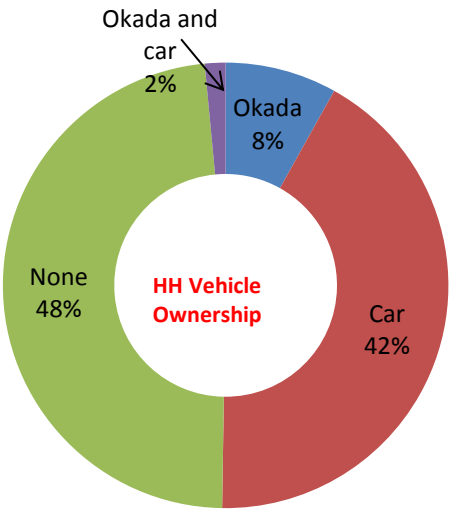

Fig 6.2: Household Vehicle Ownership along the BRT corridor

Fig. 6.3 Vehicular Population in Nigeria
Source NBS: 2015

Pedestrian accidents

The continuous urban sprawl in metropolitan Lagos has compromised safety, security, sanitation, healthcare, and comfort. According to the draft NMT Policy (2017), the absence of effective land use management and housing policy, has seen the city of Lagos experiencing rapid outward expansion and the proliferation of slums, estimated to house 75% of the city's population. This has put untold pressure on the available transport facilities and made pedestrians extremely vulnerable.

The transport system in Lagos is predominantly road-based, and the available road infrastructure is greatly overstretched. Lagos residents rely heavily on informal paratransit modes and the level of motorisation has increased which has increased more the vulnerability of pedestrian. (NMT Policy 2017)

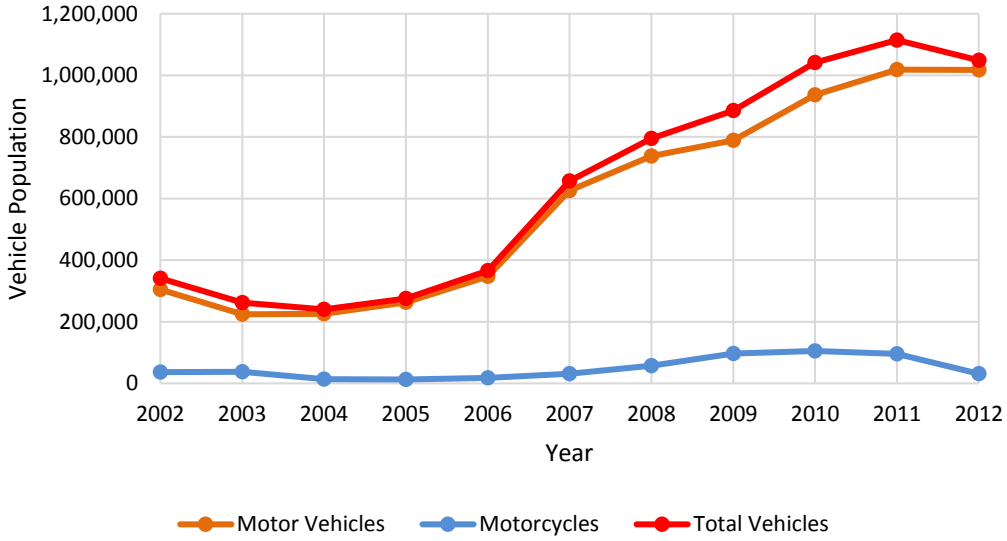

Fig. 6.4 Vehicular Volume in Metropolitan Lagos
Source: NMT, 2017

Pedestrian accidents have reduced over the years especially in Lagos though pedestrians are a highly diverse group and remain the most vulnerable road users in the city. The group includes children, older people, teenagers, joggers, the disabled, mobility impaired, and people using wheeled toys or recreational devices such as skateboards, rollerblades, and foot scooters. In Lagos, between 2006 and 2014, there were 1,579 fatalities on the highways, including pedestrians not using overhead bridges. (Olawepo and Asaju, 2016) To stem the rate of pedestrian fatalities in the state, the Lagos State government embarked on the massive reconstruction of pedestrian bridges and the construction of new ones. This move has been variously elected to have reduced pedestrian accidents in the state.

Plate 6.1: A modern Pedestrian Bridge at Ojota,
Lagos Source: Olowepo & Asaju, 2016

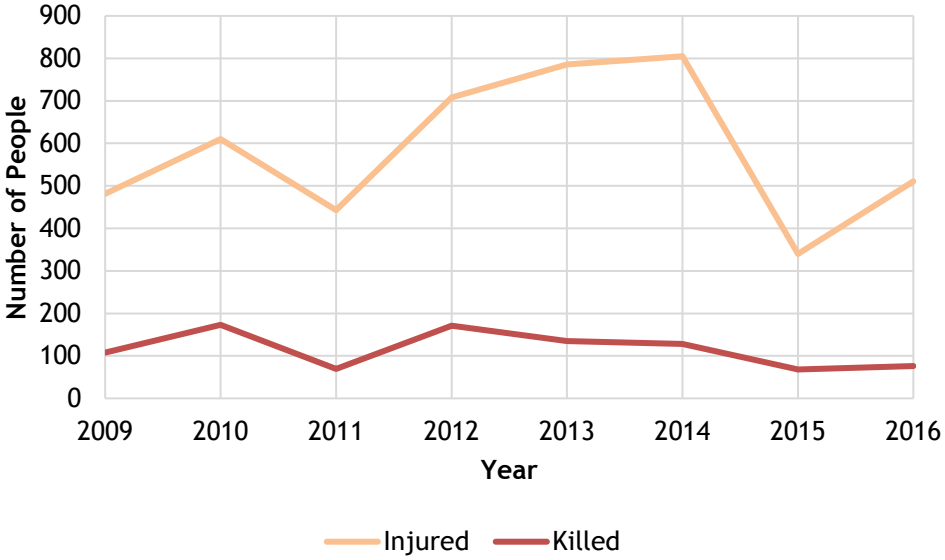

Fig. 6.5: Pedestrian Accidents
Source: NMT Policy,2017

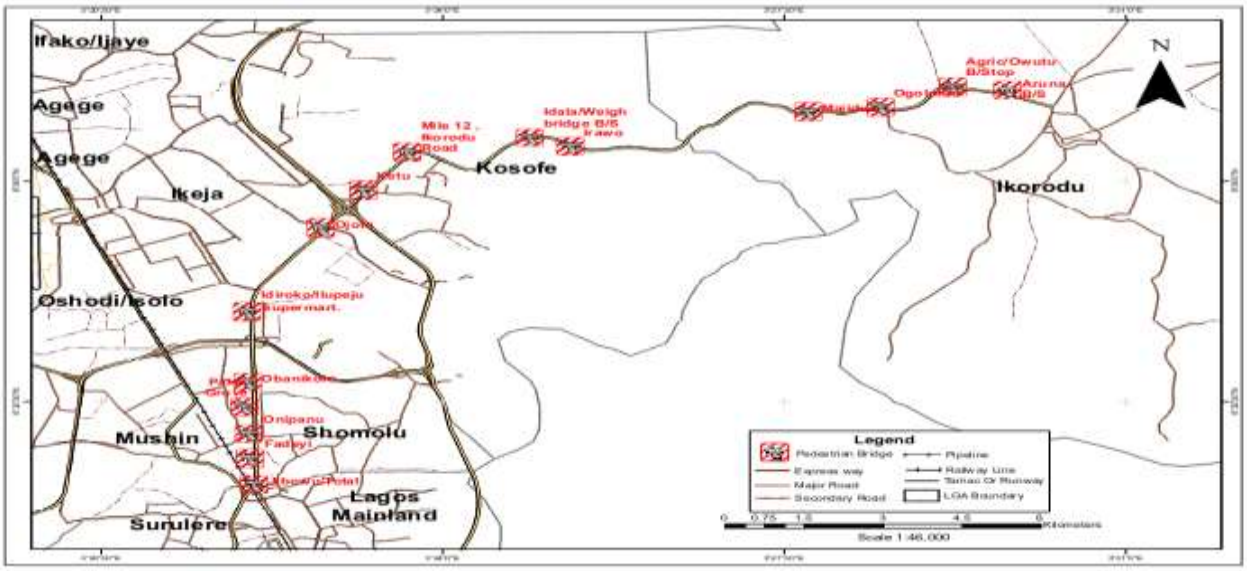

Fig. 6.6 Pedestrian Bridges in Lagos
Source: Olawepo and Asaju (2016)

Plate 6.2: Pedestrian Incursion on an expressway in Lagos
Source: LAMATA

Also, the Lagos State Government has come up with a draft policy on NMT with the following content.

Lagos State NMT Policy

Following is the draft text of the Lagos State Government NMT Policy:

Vision

Lagos will be a city with a general sense of well-being through the development of quality and dignified environment where people are free to walk and cycle; equitable allocation of public space and infrastructure; and access to opportunities and mobility for all residents.

Lagos State Government (LSG) aims to:

Enable equitable access for all by improving access and mobility for all residents; promoting social and economic empowerment through the provision of improved low-cost mobility; facilitating safe access for children; enabling gender equity through the provision of non-motorised transport (NMT) and public transport facilities that are safe for women to use; enabling inclusion of persons with disabilities by creating NMT facilities that follow principles of universal design; and by creating a changed culture that accepts the use of walking, cycling, and public transport as acceptable and aspirational means to move around in the city.

Optimise the use of resources such as space, funds, time, and energy by investing in NMT and public transport modes that consume fewer resources per person-trip compared to personal motor vehicles (PMV) and by encouraging dense, compact, and mixed-use

development that contributes to shorter trips and allows more people live and work close to PT facilities.

Improve road safety and personal security by improving management of traffic conflicts; reducing road crashes, and deaths; and creating public spaces that are safe at all times of the day for all users.

Reduce local and global environmental impactsof Lagos's transport system by expanding the use of zero-pollution NMT modes and low-pollution motorised modes, helping to improve the city's air quality.

Enable community participation by involving local residents, businesses, and other stakeholders in the preparation of designs to foster the community's active use and sense of ownership of these spaces.

Goals

LSG aims to increase the use of walking, cycling, and public transport by creating a safe and pleasant network of footpaths, cycle tracks, greenways, and other facilities to serve all citizens in the metropolitan area. It will strive to meet the outcomes listed by designing streets consistent with principles of complete streets. LSG also urges other concerned agencies to take complementary actions to realise these goals.

Pollution

The use of obsolete vehicles for the provision of both formal and informal public transport services, in combination with infrastructure deficits, has worsened conditions of noise and air pollution, service quality, and traffic casualties especially in poor neighbourhoods (Krzyzanowski et al., 2005; Adegbulugbe et al., 2008, Gujba et al., 2013 in INTALInC report, 2017). In addition, informal motorcycle and tricycle auto-rickshaw operations are now the largest passenger transport providers in low-income areas of large urban agglomerations such as Lagos (Oyesiku and Odufuwa, 2002 in INTALInC report, 2017). However, the result of a study conducted by LAMATA of pollutant emissions using traffic count at nine selected junctions within the metropolis and shown in Table 6.4, revealed that there is a positive correlation between age of vehicles and the level of emission, with the Molue contributing the highest emissions among vehicular types. This is part of the reason the state government wants to remove them from the road through its Bus Reform Scheme aiming to make Lagos a truly mega and smart city.

Table 6.4: Average Mix by Age

Age (yr) ➔	0 to 5	6 to 10	11 to 15	> 15
4WD	30%	30%	20%	20%
Cars	3%	4%	6%	87%
Molue	0%	0%	0%	100%
Trucks	9%	11%	14%	66%
Buses	5%	8%	24%	63%
3W/2W	40%	30%	20%	10%

Source: LAMATA GHG study (2009)

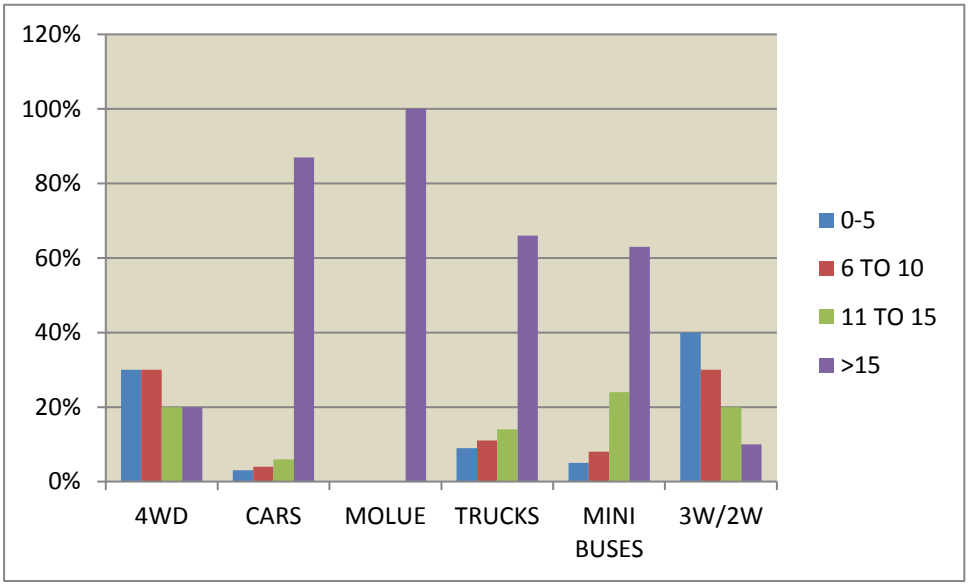

Fig. 6.7: Vehicular emission comparison
Source: LAMATA GHG study (2009)

In Table 6.5 and Fig 6.8 it could be observed that emissions from molue using petrol are low. The analysis is based on vehicular volume however, and most molue buses use diesel. The same applies to trucks. Buses, which are mostly the yellow mini types, use petrol and the same applies to most cars and four wheel drive vehicles.

Table 6.5: Vehicular emission by types of fuel

	Petrol	Diesel
4WD	80%	20%
Cars	95%	5%
Molue	1%	99%
Trucks	3%	97%
Buses	97%	3%
3W/2W	100%	0%

Source: LAMATA GHG study (2009)

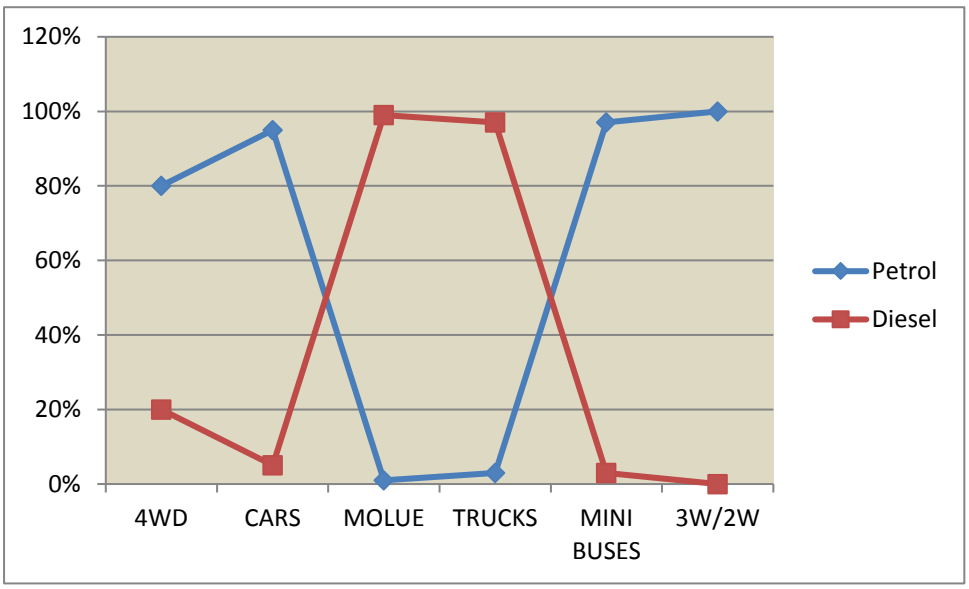

Fig. 6.8: Comparism of vehicular fuel types and emission
Source: LAMATA GHG study 2009

The results for EF measured for new and used buses and cars are presented in Table 6.6 along with those of European Union, Egypt and India. A comparison with European Standards (Euro 1,2,3,4) shows that our new vehicles are close to Euro 2 standards which were applicable in Europe around 1996 as shown in Table 6.6 below. (LAMATA GHG report, 2012)

Table 6.6: Emission Factors for Vehicles Using Gasoline

Gasoline (Standard)	**Year***	**CO**	**HC**	**NOx**	
Euro 1	1992	4.05	0.66	0.49	
Euro 2	1996	3.28	0.34	0.25	
Euro 3	2000	2.3	0.2	0.15	
Euro 4	2005	1.00	0.10	0.08	
Gasoline (Measured)		**CO**	**HC**	**NOx**	**CO2**
Cars:					
New		3	0.006	1.2	165.9
> 15yrs		7.1	0.219	0.07	22.92
< 5yrs		14.96	0.22	0.19	121.2
SUVS:					
New		11.37	0.01	0.40	300.75
Used		4.84	0.04	0.37	198.3
Buses:					
New		8.07	0.006	0.36	229.2
Used		12.45	0.17	0.15	107.9
Egypt: Cars & Buses	2000				
<50Km/5yrs		2.1	0.16	0.25	
160km/10yrs		2.7	0.2	0.4	
India	2000	2.30	0.20	0.15	

Source: GHG study (2009)

Transport expenditure: Household Expenditure on Transport

A household travel expenditure survey conducted along the BRT corridor for the LUTP end-of-project report (2017) compared the cost of commuting in Mini Buses (Yellow Buses) and that of BRT. The study revealed that commuters spend more money commuting in Yellow buses than the BRT as seen in Tables 6.7. Only 3.9% of the sampled population spends NGN 500 or more on transportation using BRT while 17.3% spend the same amount on transportation using Yellow Buses. This confirms that a large percentage of households along the corridor spend more commuting using Yellow Buses than BRT, which is a cost effective means of transportation and will reduce household expenditures on transportation if well patronised.

Table 6.7 Expenditure on To and Fro Journey using BRT and Yellow Buses

Travel expenditure	BRT (%)	Yellow Buses (%)
N100 - N150	38.2	17.3
N200 - N300	22.5	29.3
N300 - N500	31.4	34.7
N500 and above	3.9	17.3
No response	3.9	1.3

Willingness to pay extra

The study of commuter mobility along the BRT corridor for the LUTP project report (2017), examines passenger willingness-to-pay (WTP) for improving the quality levels of a bus service. The WTP represents an important tool in the valuation of transport investments, because it allows the level of cost which could be debited to the users to be established. The study shows that 68.3% of household respondents are not willing to pay more for an improved BRT service most of them stated that this is because it belongs to government. Of those willing pay more, about 44% (as seen in Table 2.3) are only willing to pay about a five % increase in fares.

Accessibility to key services

Access to key services such as healthcare, education, information, and welfare, among others, for people in low income communities is a huge challenge. One major factor is the high congestion levels in the metropolitan area which often lead to increases in fares which low income groups cannot afford, continuously putting them at a disadvantage. For instance, many women do not have access to regular antenatal services due to the distance of the

hospitals from their homes. They patronise primary health centres which can only provide very limited services. This may be responsible for the high rate of maternal and child deaths.

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