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The spatial distribution and accessibility to urban health facilities in Ilesa, Nigeria

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Abstract

The study examined the spatial distribution and accessibility of urban population to urban health facilities in southwestern Nigeria with specific reference to Ilesa, Osun state, Nigeria. Data for the study were of primary and secondary sources. The primary data were collected through the administration of questionnaires, field observations and the use of GPS. Multi-stage sampling procedure was used in the administration of the questionnaire. Firstly, the study area was divided into eleven (11) Traffic Analysis zones based on the 1,464 census enumerated area. In each traffic analysis zone, 2.5% of households were randomly selected for interview. Six hundred household questionnaires were administered to heads of selected households. Secondly, data were obtained from relevant literature and archival sources. Descriptive and inferential statistics were used to analyze the data.

The findings revealed that health facilities were not evenly distributed .This accounted for 54.1% of the health trip of the samples to be attracted by Ayeso zone. Congestion and over utilization of both human and physical resources at the specialist health facilities in this zone were experienced daily. The result of the analysis of variance further showed that there were significant variations in accessibility to health facilities among the sampled zones namely: transport cost ($F=1.92$, $p<0.05$), distance ($F=5.43$, $p<0.05$), availability of transport means ($F=5.81$, $p<0.05$) and travel time ($F=8.37$, $p<0.05$).

The paper concludes by advocating for the upgrading of some of the public health facilities in certain zones to the status of General hospitals. Private health facilities should be encouraged by the government at the disadvantage zones. Further studies are needed to examine the human resource and material need of the existing health facilities in the study area, for effective planning and provision of qualitative health services to the urban population.

Keyword: Health, Transport and Planning Implication

Background

Over the past three decades, the major concern of most of developing countries is the provision of adequate health care system to meet the needs of their people. This is because good health care service is a prerequisite for every form of human development. Studies have shown that an adequate health care system is believed to have direct relationship to the socio-economic and general well being of the people it serves (Adesanya, 2002; Judy,2005). It is on this premise that successive Nigerian governments, over the years, devoted a substantial part of their annual budget to health care provision. However, despite the huge financial commitment in the nation's annual budget on the health sector in Nigeria, many people are still deprived of access to good health care services. In most cases, the health care providers are inadequate in some of the urban centres both in qualitative and quantitative terms. Many urban residents travel long distances and spend a large proportion of their income to procure drugs for treatment of their illness. (Adetunji, 2010; Adesanya el al, 2002; Judy et al, 2005). This study is designed to examine the accessibility characteristics of urban poor to health facilities in the medium sized city of Ilesa, in Southwestern Nigeria. This is because improved access of the urban populace to health care services is paramount to life safety as it relates to the prevention and treatment of diseases and more importantly, it determines the quality of life as well as the productivity level of the nation's Gross Domestic Product (GDP).

Theoretical Frame Work and Literature Review

Many theories are available to explain the spatial distribution of facilities such as industries, banks, petrol stations and others. Some of these theories are Central Place Theory, p-Median Model and Market Area Analysis. The central place theory which was propounded by Walter Christaller in 1933 will be more relevant in this study in explaining the accessibility characteristics of urban residents to health facilities in the study area. The central place exists to provide goods and services for the need of the populace both within and outside its boundaries (Ayeni, 1979). It is observed that services are of different orders and that each service possesses a trade area or range from which people commute to utilize the central's placed facilities. Berry (1968) has observed that this trade area has limits, the upper and lower. The lower limit is the threshold as it encircles the area that assures the viability of the services, while the upper limit is the maximum reach above which nobody travels to the central place to purchase goods and services. To this end, a facility of higher order would have longer range than a facility of a lower order. In reaction to this statement, The Wesley Guild

Hospital of Obafemi Awolowo University Teaching Hospital, Ilesa and the State Hospital also in Ilesa are classified as higher order service, while dispensaries, maternities and clinics are regarded as lower order services because they provide lower order services for the urban residents in the study area.

In a review of literature on barriers to access health services, Ensor and Cooper (2004) regard distance and time as direct and opportunity costs that influence the uptake of health services in many low income countries. According to them, the direct costs of transport constitute a substantial proportion of overall expenditure in health care. In north-east Brazil, travel costs incurred in accessing health care have been calculated to represent 25% of the outlay on health (Terra de Souza et al, 2000) and 28% in Cameroon (Sauerborn et al, 1995). Furthermore, research findings from Bangladesh reveals that in the breakdown of patient costs, transport charges to service centres require the greatest financial outlay of all health costs after expenditure on drugs (CIET Canada, 2000).

The physical access to health services is a critical issue in most of the developing countries of the world particularly where the location of the health care services are politically motivated (Andrew, 1997). Many scholars have observed that socio-economic characteristics of the urban residents play a significant factor in affecting access to health care services in developed and developing countries but more pronounced in the former than the latter. In a study of access to health care and minorities in America, Andrew (1997) observed that health care providers are less accessible to the urban residents because of the environment they live in and their financial situation. According to him, many urban poor are more likely to get sick and require costly treatment because they seek treatment only when they become critically ill and required expensive treatment.

Adesanya et al (2002) examined the mobility characteristics of urban poor in the six geo-political zones in Yobe (Adamawa), Lagos (Lagos state), Port Harcout (Rivers state), Onitsha (Anambra state), Jos (Plateau state) and Kaduna (Kaduna state). The survey revealed that accessibility characteristics of urban poor to the various social and economic opportunities are very low (that is, the ease with which activities can be reached from a specific point in space). According to them, the distances and locations to different activity centres have significant bearing in urban commuters. Adesanya et al (2002) reported that a sizeable number of schools (primary and secondary), pipe borne water points, primary health centres and dispensaries were located within one kilometre of residence of 42% of the residents in all the states studied, while hospitals were considerably far from the residences of many respondents. It was reported that 25.1% of the respondents travel beyond nine kilometers in order to get to the nearest hospitals. They also reported

that income of the urban residents play a dominant role on the frequency of trips to hospitals. According to them, low income earners make less frequent visit to hospital because of cost of transport and treatment charges. There is a dearth of studies on the accessibility of the people to health facilities in the medium-sized cities of Osogbo, Akure, Ile-Ife and Ilesa and many other cities in Southwestern Nigeria and elsewhere. The paucity of studies is on reasonable because health is wealth and individual physical and mental well being had proved to be a precondition for the growth and intellectual enrichment in today's human society. This study is therefore designed to examine the accessibility characteristics of urban residents to health facilities in the rapidly developing medium sized city of Ilesa in Southwestern Nigeria in order to proffer appropriate health planning strategy for urban populace. The study will also contribute to the existing body of literature on urban health care delivery

The Study Area

Ilesa, the major city of Ijesa region in Southwestern Nigeria is the study area. Ilesa is presently made up of two local government areas of Ilesa West and Ilesa East. Both Council areas are bounded in the North, West and South by Obokun, Atakunmosa and Oriade Local Government areas respectively. Ilesa is about 32 Kilometers North – East of Ile-Ife (The ancient Yoruba town) with which it shares the same senatorial seat in the upper national legislative chamber and about 30 kilometres South West of Osogbo, the Osun State Capital.

The population of Ilesa has grown from 72,029 in 1952 when the first national census was carried out in Nigeria outside Lagos to 165,822 in 1963 and 138,953 in 1991, and 210,141 in 2006 (NPC, 2006).

A wide variety of health services are provided by both public and private concerns in Ilesa. These range from Specialist hospitals to simple health providers. The Wesley Guild Hospital which is an arm of the Obafemi Awolowo University Teaching Hospital at Ile-Ife was established by the Methodist Church in 1926. It provides special hospital services in the area of Psychiatry, Gynaecology etc. The private and other public owned clinics, maternities and dispensaries provide general services. (See Figure 1: Showing the Study Area)

Methodology

Primary and secondary sources of data were collected for this research. The primary data were collected through the administration of questionnaires, field observations and the use of Geodetic Positioning

System (GPS). Multi-stage sampling procedure was used in the administration of the questionnaire. First, the study area was divided into eleven (11) Traffic Analysis zones based on the 1,464 census enumerated areas. In each traffic analysis zone, 2.5% of households were randomly selected for interview. Six hundred household questionnaires were administered to heads of selected households. The questionnaire was designed to elicit information on the socio economic characteristics of the household particularly with reference to their income, the type of health facility they consult whenever they are sick, the frequency of their visit to the health care providers, the distance travelled from their residence to the health facility and the mode of transport commonly used to procure treatment for their illness. Secondly, data were obtained from relevant literature and archival sources. Descriptive and inferential statistics were used to analyze the data .The descriptive statistics used include tables of percentages, charts and graphs to depict the distribution patterns of health care providers in the city, the distance travelled to health facilities as well as the modal choice of patients across the eleven traffic analysis zones identified in the city. The Analysis of Variance was employed to examine the travel patterns of patients to the health care facilities in difference zones in the study area. Multiple regression analysis was to examine the contribution of the distribution of health facility, transport attributes and socio-economic characteristic of urban population to health care providers in the study area.

Results and Discussion

The findings reveal that there are only two major hospitals owned by the Federal and State governments in the study area. These are the Wesley Guild Hospital which is an arm of Obafemi Awolowo University Teaching Hospital, Ile-Ife and the State Hospital under the supervision of the Osun State Hospitals Management Board. There are sixteen (16) specialist hospitals owned by private individuals which are not affordable by the majority of the respondents as a result of high charges on patients' treatment. Also, twenty-two (22) primary health centres and four dispensaries were located in Ilesa Township. The patterns of distribution of health services are shown in table 1 and figure 1 below respectively.

The Wesley Guild Hospital is located at Ayeso zone while the state Hospital is found along the Muroko road in General Hospital Area zone. Virtually all the zones in the study area have either primary health centres or dispensaries or private hospitals located in them. Investigation revealed that one medical doctor is attached to each local government with two nurses and one health attendant to each health facility couple with insufficient drugs. This has forced the majority of the respondents to travel out of their zone to

either Ayeso or General Hospital where better health services are provided at a reasonable cost.

Table 1: **Spatial distribution of health services in Ilesa township**

DISTRICT	**Type Of Health Facilities**				
	Government Hospital	**Special Hospital (Private)**	**Health Centres**	**Dispensary**	**Total**
Owa's Palace	-	1	5	1	7
Ilaje	-	1	1	-	2
Imo	-	-	2	-	2
Okesa	-	-	2	1	3
Irojo	-	1	2	1	4
Bolorunduro	-	6	1	-	7
Ayeso	1	2	1	-	4
General Hospital	1	3	1	-	4
George Burton	-	-	2	1	3
Oke-Ooye	-	1	2	-	3
Isokun	-	1	3	-	4
Total	2	16	22	4	43

Source: **Author's Field Survey, 2009.**

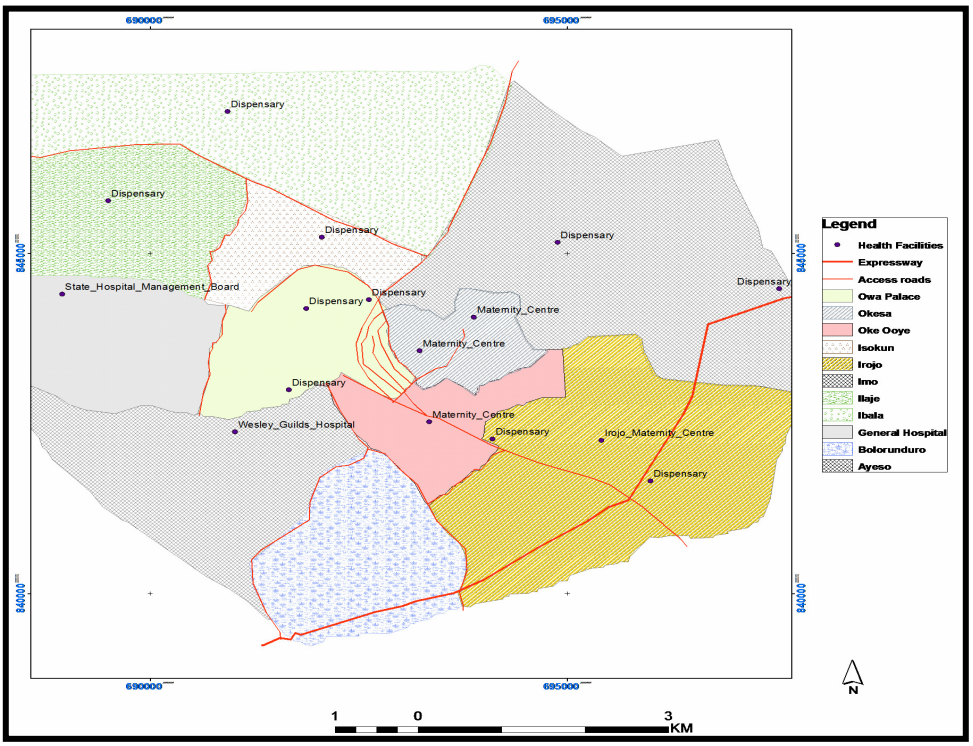

Figure 1: Showing the Study Area

The interaction matrix for the journey to health centres shown in table 2 indicates that 54.4% of the sampled population in the study moves to Ayeso zone in order to obtain hospital services. Another 18.3% of the respondents move to General Hospital zone for the same purpose. The reason is that the Wesley Guild Hospital, Adenle Memorial Specialist Hospital and the State Hospital Management Boards which provide special services in the areas of women obstetric needs or gynaecology, and many others are located at Ayeso and General Hospital zones respectively.

The implication of the above analysis shows that there is high centrality in the provision of good medical care for the people in the study area. This has resulted in the over-utilization of health services at both the Wesley Guild Hospital and the State General Hospital in the study area which manifested in long queues for medical attention. The majority of the sampled respondents expressed their dissatisfaction about the time wasted and energy spent in waiting for the medical doctor to attend to their medical complaints. This implies that more medical doctors and drugs need to be provided in the health centres for the people in different parts of the city so

that the inhabitants would have enough time to devote to their productive activities that will reduce time spent on attending hospital services.\

Further analysis revealed that 16.8% of the respondents who live at Irojo zone attend health care providers within their zone. An overwhelming proportion of the sampled population 76.2% move to Ayeso zone for the treatment of their illness. Only 1% each of the respondents commutes to General and George Burton zones for the same purpose. Similarly at Okesa zone, table 2 reveals that 14.1% of the respondents commute to the health care providers within their zone, 77.5% move to Ayeso zone for the same purpose. Only 2.8% of the respondents commute to Ilaje, Imo and General Hospital zone for their medical treatment.

Overall, more than 50 percent of the sampled respondents at Owa's palace, Imo, Okesa, Irojo, Bolorunduro, Ayeso, Isokun move to Ayeso zone for the treatment of their illnesses. This further indicates that there is high centrality in the distribution pattern of health services in the study area which calls for long distance commuting to the health facilities located in the study area.

With respect to the type of health facilities the respondents consult whenever they are sick, table 3 reveals that 25.1% of the respondents attend community health centres or dispensaries, 16.5% and 58.4% of the respondents consult private doctor and General or Wesley Guild Hospital whenever they are sick. The first category of the people is mostly from Owa's Palace, Okesa, Oke-Ooye and Isokun zones where community health centres or dispensaries are located. The second group of respondents who consult private doctor come principally from the Ilaje, Imo, Bolorunduro and George Burton where the majority of high income earners live in the study area. More than 60% of the patients who attend General or Wesley Guild Hospital live in Bolorunduro, Ayeso and General Hospital zones where the Federal and State Hospitals are located respectively.´

Table 2: Showing the Patterns of Interaction of Journey to Health Service in Ilesa (in %)

Name of district	Owa's palace	Ilaje	Imo	Okesa	Irojo	Bolorunduro	Ayeso	General Hospital	George Burton	Oke-Ooye	Isokun	% Total
Owa's Palace	28.4	-	-	-	-	-	56.8	12.5	-	-	2.3	100
Ilaje	1.0	16.0	1.0	-	-	-	24.0	58.0	-	-	-	100
Imo	0.9	0.9	41.1	-	-	2.8	51.4	2.8	-	-	-	100
Okesa	-	2.8	2.8	14.1	-	-	77.5	2.8	-	-	-	100
Irojo	-	-	-	-	16.8	14.9	76.2	1.0	1.0	-	-	100
Bolorunduro	-	1.0	7.2	-	2.1	34.0	53.6	2.1	-	-	-	100
Ayeso	1.3	-	-	0.6	-	1.3	76.9	20.0	-	-	-	100
General Hospital	-	11.2	-	2.2	2.2	-	30.3	52.8	-	-	1.1	100
George Burton	1.1	1.1	2.3	2.3	2.3	1.1	28.4	20.5	36.4	1.1	3.4	100
Oke-Ooye	1.5	1.5	-	-	4.4	-	63.2	5.9	-	23.5	-	100
Isokun	3.3	18.7	1.1	-	2.2	-	42.9	19.8	1.1	3.3	7.7	100
Total	34	49	57	15	28	44	57.3	19	33	20	11	100
%	3.2	4.6	5.4	1.4	2.6	4.2	54.1	18.3	3.1	1.9	1.0	

Source: Author's Field Survey, 2009.

Table 3: Distribution of respondents by type of health facilities

Traffic Analysis Zone	Community Health Centre	Private Health Facilities	General / Wesley Guilds' Hospital	Total
Owa's Palace	71.4	14.3	14.3	100
Ilaje	41.7	33.3	25	100
Imo	47.8	34.8	17.4	100
Okesa	83.3	16.7	-	100
Irojo	45.5	27.3	27.3	100
Bolorunduro	5.9	35.7	58.8	100
Ayeso	16.3	15.4	68.3	100
General Hospital	10.3	4.4	85.3	100
George Burton	55.6	33.3	11.1	100
Oke-Ooye	76.9	7.7	15.4	100
Isokun	86.7	16.7	16.7	100
Average all Zone	25.1	16.5	58.4	100

Source: - *Author's Field Survey, 2009.*

Distance to Health Care

The proximity to health care providers in the urban centres in Nigeria is a critical factor because of the high rate of urbanization and inability of the city managers to provide good health services for their citizens. The average distance travelled by the respondents to the community health centres or dispensaries is shorter than that travelled by patients who consult private doctors and hospitals in Ilesa. For instance, table 4 indicates that 44.3% of the respondents who consult community health care providers travel less than 1km, 12.4% and 23.7% of the respondents cover between 1-2km and 2-3kms for the same purposes. While less than 20% of the patients travel more than 3kms to the community health centres in the study area, further analysis indicates that 43.9% of the respondents travel less than 1km to private doctors, 15.2% and 8.2% spent between 1-2kms and 2-3kms respectively for the same purpose. 22.8% of the patients interacted with

claimed that they travel more than 3kms to consult a private doctor for the treatment of their illnesses in the study area.

In contrast, 32.9% of the patients who attend General or Wesley Guild Hospital cover less than 1km on their transit. Approximately 9.3% and 18.2% of these respondents commute between 1-2kms and 2-3kms for the same purposes. More than 39% of the respondents who attend General or Wesley Guild Hospital claimed that they spent more than 3kms in order to procure treatment for their illnesses in the study area.

Table **4:** Distance Travel to Health Facilities

Health Providers	Below 1km	1-2km	2-3km	Above 3km	Total
Community Health Centers	44.3	12.4	23.7	19.6	100
Private Health Facilities	43.9	15.2	18.2	22.8	100
General/Wesley Guild Hospital	32.9	9.3	18.2	39.6	100

Source: - *Author's Field Survey, 2009.*

Mode of Transport to Health Provider

The modal choice of the respondents to the health providers is an important transport attributes to be considered here. Table 5 indicates that 39.2% of the patients who attend community health centres commute on foot, 14.4%, 18.6% and 26.8% rely on motorcycles, car and taxis to health care providers respectively.

Further analysis reveals that 37.9% of the respondents commute on foot to a private doctor, 15.2% each and 28.8% of the patients depends on motorcycles, car and taxis respectively while only 3% of the patients rely on buses. The last category of the respondents was mostly individuals who have buses for their personal use.

However, table 5 indicates that 28.4% of the respondents who attend either General or Wesley Guild Hospital commute on foot for the treatment of their illnesses. 16%, 17.8% and 36.9% rely on motorcycles, car and taxis respectively for the same purpose. It can be inferred from the above analysis that more than 54% of the respondents who attend General and Wesley Guild hospitals rely mostly on automobile vehicles (personal car and taxis) while patients who consult community health centres and private doctors constitute 45.4% and 44% respectively.

The principal mode of transport to health care providers in the study area is taxis and this accounts for 33%. This is closely followed by foot (32.7%), personal car (18%), motorcycles (15.5%) and buses (0.8%).

Table **5: P**ercentage Distribution of Modal Choice to Health Care Provider

Health Providers	Foot	Motorcycle	Car	Taxi	Buses	Total
Community Heath Centers	39.2	14.1	18.6	26.8	1.0	100
Private Health Facilities	37.9	15.2	15.2	28.8	3.0	100
General Hospital or Wesley Guild Hospital	28.4	16.0	17.8	36.9	3.0	100
Zonal average	32.7	15.5	18.0	33.0	0.8	100

Source:- ***Author's Field Survey, 2009.***

Average Time Taken To Health Care Providers

With respect to the average time taken to health facility in the study area, table 3 indicates that 66% of the respondents who attend community health centre indicated that they spent less than 15minutes to reach dispensaries or primary health centres while the remaining 34% spent between 15 and 30 minutes. The proximity of these services to persons in their residence enables the people to spend less time in transit in order to get to the nearest health centres in their different zones. No one spend more than 30 minutes to commute to the community health centres in the study area. Further analysis reveals that 72.2% of the patients who consult a private doctor spend less than 15 minutes to seek care for the treatment of their illnesses, less than 30% of these respondents who consult a private doctor spend between 15-30 minutes for the same purpose.

In contrast, 70.1% of the respondents who attend hospital claimed they spent less than 15 minutes to seek medical care for the treatment of their illnesses, 22.8% of the patients spent between 15-30 minutes for the same purposes and 7.1% of the respondents spent more than 45 minutes on their journey to the hospital. It can therefore, be concluded that patients travel longer distances to hospital than community health centres or private doctors in the study area.

Table 3: Percentage Distribution of the Average Time Taken to Health Care Providers in Ilesa

Health Care Providers	Time				
	Below 15 Minutes	15-30 Minutes	30-45 Minutes	45-60 Minutes	Above 60 Minutes
Community Health Care	66	34	-	-	-
Private Hospitals	72.2	27.8	-	-	-
Government Hospital	70.1	22.8	5.4	1.3	0.4
Zonal average	69.8	26.1	3.1	0.7	1.6

Source: - Author's Field Survey, 2009.

Transport Cost to Health Care Providers

The physical location of health services relative to the residences of the people transport cost, condition of roads and many other logistic difficulties are linked with reduced utilization of medical services in the developing countries (Adetunji, 2010: Ensor and Cooper, 2004) The findings in Ilesa indicates that 25.9% of the respondents who commute on foot spent no transport fare on their journey to health care providers. The majority of these people were most likely living very close to the health facility. One would expect them to commute on foot in order to avoid transport cost to access health service providers. These people were mostly from Bolorunduro, Ayeso, and General Hospital zones where Wesley Guild Hospital and General Comprehensive Hospital were located. (See figure 5)

Further analysis indicates that 27.2%, 25.8% and 8.8% of the respondents spend between ₦20-₦30, ₦30-₦40 and ₦40-₦50 as transport fare in order to attend hospital for the treatment of their illnesses. A sizeable number of the respondents (12.3%) spend more than ₦50 on transport fares for the same purposes. These people are principally from Imo, George Burton, and Oke-Ooye zones where mobility was very low because they were less accessible to the public transport as a result of poor road networks that linked the in residences with the health services providers. The few motorcyclists plying these routes charge exorbitant transport fares on the urban commuters. In essence, high transport fares to health services would erode household income particularly where health services are not accessible within trekking distances. This may compound the prevailing poverty condition of urban commuters and consequently discourage the people from

patronizing health services located far away from their residences. Further analysis indicates that nobody spends more than ₦40 as transport fares on a journey to health services at Bolorunduro because of the close proximity to the health services.

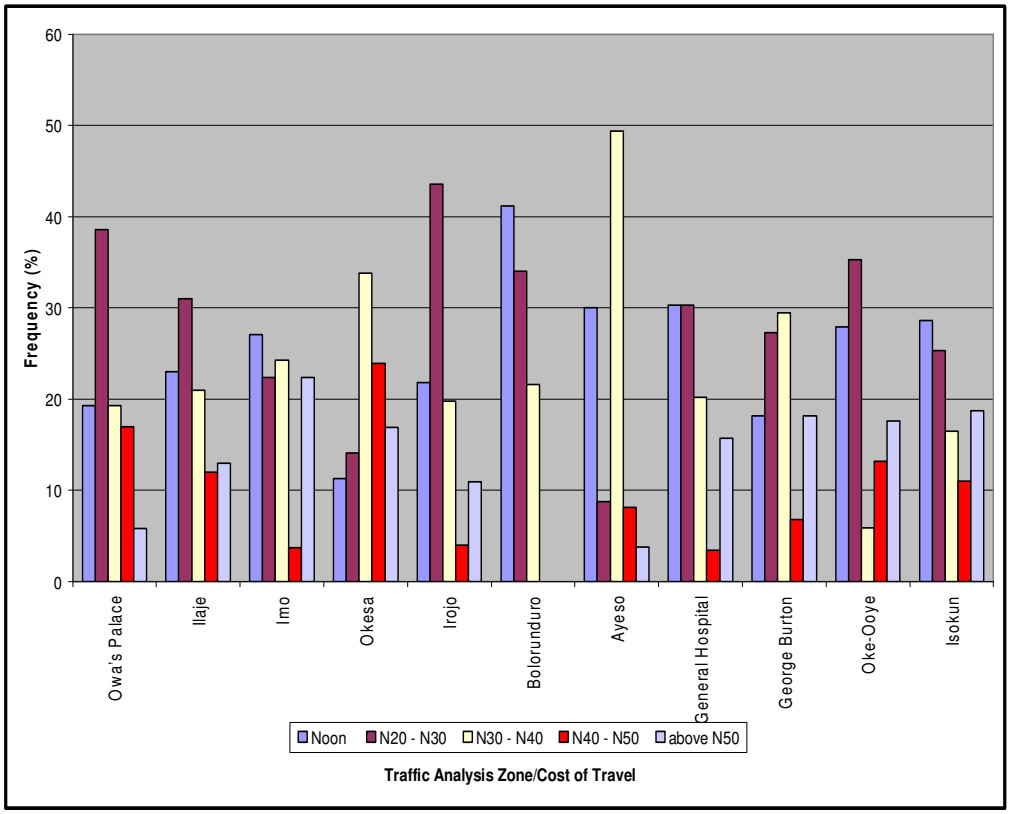

Fig 5: Transport Cost to Health Care Providers

Frequency of Trip to Health Care Providers in the Study Area

The Frequency of trips to the health services must be interpreted with caution. Ironically, low income earners are expected to get sick more easily than high income earners and by implication, visit health care providers more frequently. Contrary to this expectation, table .4 reveals that 95.5% of the people interviewed, mostly low income earners, made only trip to health services in the last six months for the treatment of their illnesses. The

remaining 4.1% of low income earners indicated that they consult health care providers twice within the same time frame.

In contrast, 21.4% of the high income earners consulted health care providers once within the last six months, 25% of these people indicated that they attended health services twice, while 53.6% of the high income earners consulted health care providers for more than three times within the same time frame. The last category of these people has a comfortable economic status making it affordable for them to consult a doctor whenever they need medical attention either for themselves, their children or wards as the case may be. Similar results were observed by Adesanya et al (2002) in their study of mobility characteristics of urban poor in the six geo-political zones in Nigeria that low income earners make less frequent visits to hospitals because of cost of transport and treatment charges.

Table.4: **Frequency of Trip to Health Services in the Study Area.**

Income	**Once**		**Twice**		**Above two times**	
	No	%	No	%	No	%
Less Than ₦20,000 Low Income	589	95.9	25	4.1	-	-
₦21,000 – ₦ 40,000 Medium Income	100	55.5	50	26.6	35	18.6
₦ 41,000 Above High Income Earner	6	21.4	7	25.0	15	53.6

Source: Author's Field Survey, 2009.

Variations in Transport Variables across Different Traffic Zones in the Study Area

Hypothesis:

Ho: There is no significant relationship between transport attributes (distance travelled, modal choice, transport cost and average time taken to the health care providers) across different traffic analysis zones in the study area

H1: There is significant difference

The result of the analysis of Variance reveal that there is significant difference on the distance travelled, modal choice, transport cost and average time taken to commute to health care providers in difference zones of the study area. The result of the analysis is significant at (Distance travel F=5.43, p<0 .05; Modal Choice F=5.81, p<0 .05; Transport Cost F=1.93, p< 0.05: Travel Time, F=8.38, p< 0 .05).

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Distance from Residence to Hospital	Between Groups	216.508	10	21.651	5.431	.000
	Within Groups	2347.877	589	3.986		
	Total	2564.385	599			
Transport Mode to Hospital	Between Groups	227.404	10	22.740	5.813	.000
	Within Groups	2304.089	589	3.912		
	Total	2531.493	599			
Transport Cost to Hospital	Between Groups	78.549	10	7.855	1.929	.039
	Within Groups	2398.969	589	4.073		
	Total	2477.518	599			
Travel Time to Hospita	Between Groups	62.210	10	6.221	8.379	.000
	Within Groups	437.284	589	.742		
	Total	499.493	599			

Determinants of Households Accessibility to Health facilities

In order to determine the important variables that influence the accessibility of urban residents to health care services in the study area, a multiple regression analysis was used. The frequency of trips to health care providers represent dependent variable, while the location pattern of health facility, socio economic characteristic of the household such as income level, educational background and transport attributes such as modal choice, distance travelled and transport cost to health services represents independent variables. The results of the analysis reveals that the location of health facilities and the average travel time are more significant at p = 0.000. This shows that the accessibility of urban residents to health care providers is mostly affected by the distribution patterns of health care services and average travel time in the study area. Similarly the transport attributes such as modal choice and distance travelled to health care providers are significant at p=0.002 and p=0.013 respectively. While the socio economic characteristics of the urban residents that is, monthly income and educational background of the households are significant at p=0.014 and p=0.158 respectively.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.849(a)	.721	.717	.548

a Predictors: (Constant), Travel Time to Hospital, Monthly Income Range, Educational Background, Transport Cost to Hospital, Distric Code: Health, Distance from Residence to Hospital, Transport Mode to Hospital

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	457.718	7	65.388	218.115	.000(a)
	Residual	177.475	592	.300		
	Total	635.193	599			

a Predictors: (Constant), Travel Time to Hospital, Monthly Income Range, Educational Background, Transport Cost to Hospital, Distric Code: Health, Distance from Residence to Hospital, Transport Mode to Hospital
b Dependent Variable: Trip Frequency to Hospital

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	.247	.061		4.049	.000
	Educational Background	.025	.017	.034	1.415	.158
	Monthly Income Range	-.065	.022	-.068	-2.928	.004
	Distric Code: Health	.142	.009	.502	15.625	.000
	Distance from Residence to Hospital	.062	.025	.124	2.490	.013
	Transport Mode to Hospital	.076	.025	.152	3.058	.002
	Transport Cost to Hospital	.021	.020	.042	1.073	.283
	Travel Time to Hospital	.150	.038	.133	3.990	.000

a Dependent Variable: Trip Frequency to Hospital

Conclusion and Recommendations

This paper examined the accessibility characteristics of urban residents to health facility in Ilesa a typical Yoruba city in Southwestern part of Nigeria. The analysis reveals that people have less access to health facility in the study area. Many of the urban residents commute long distances and spend a large proportion of their income to procure treatment for their illnesses. The paper then concludes by advocating the upgrading of some of the public health facilities in certain zones to the status of General hospitals. Private health service providers should be encouraged by the government to establish new health facilities at disadvantaged zones. Further studies are needed to examine the human resource and material need of the existing health facilities in the study area, for effective planning and provision of qualitative health services to the urban population.

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