

**THE RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS  
AND DEATH PATTERN OF THE PEOPLE OF LAGOS STATE, NIGERIA**

Rasheed Kola Ojikutu

Department of Actuarial Science and Insurance,  
University of Lagos, Lagos, Nigeria.  
Email: kolaojikutu@yahoo.com

**ABSTRACT**

This study describes the characteristics of the people of Lagos State, Nigeria in relation to death patterns using simple descriptive analysis and tests of hypotheses. From the death records of 6,269 individuals, obtained from four randomly selected Local Government Areas (LGA), it was discovered that there is a significant gender difference in the number of deaths recorded during the period (2000-2004) and that many residents died at the age of 35 years. Though, the mean age at death was found to be 49.90 years, the life expectancy at birth was 50.41 years, which does not depart significantly from 51.6 years recorded in the year 2000 Life Table of the World Health Organization (WHO) for both sexes. The result shows that there is significant difference in mortality across age groups and also that mortality is higher in the 30 to 59 years age category than any other group in the population. It was also found that there is significant difference in mortality across occupational groups and that mortality is higher among traders than any other occupational category. Apart from Lagosians, most of the deceased in the study area come from the neighboring states of Ogun, Oyo, Ondo, Osun and Ekiti. This corroborates the thesis of the Ravenstains Distance Decay Theory, which states that most migration takes place over a short distance. The test of hypotheses in this case shows that there is significant difference in mortality among the migrant groups and that those whose place of birth is Lagos State record higher mortality than those born outside of Lagos State, Nigeria

**KEY WORDS:** Occupational Characteristics, Mortality Patterns, Cardiovascular Infection, Gender Differences

**INTRODUCTION**

Researchers generally agree that inadequacies in city or urban environments take their toll on human health and place heavy burdens on public health expenditure. Coca- Perraillon (2001) while explaining the contribution of the environment to high mortality argued that poor living conditions in cities are responsible for diseases, and health impairments have assisted in controlling human population growth for centuries. Corroborating Coca-Perraillon's assertion, a 2001 United Nations Population Fund (UNPF) report on the State of the World explained that environments contribute to the spread of communicable diseases and are major determinants of, or rather

deterrents to, healthy living and longevity. Examining the global pollution and health threat, the UNPF submits that air pollution alone kills between 2.7 million and 3.0 million people each year and about 90% of them are from developing countries. It observes that outdoor pollution in cities impair the health of over 1.1 billion people and kills about 500,000 people every year while indoor pollution affects the health of about 2.5 billion people, majority of who are females. Indoor pollution was said to kill over 2.2 million people each year, over 90% of them from developing countries.

Researchers like Goldstein (1976) believe that many of the health problems confronting the developing countries of the world have migratory components. In the view of Coca-Peraillon (2001), migration leads to the growth of cities, which, in turn, have serious effects on the management of city environments. According to him, persistent poverty, increasing crime wave, overcrowded housing, overstretched transportation systems, noise pollution and general decline in the quality of human life are all common features of large towns and cities. Rosan et. al. (2000) in their contribution to a discussion on the effects of urbanization on human well-being argued that, urbanization is a critical tool for social development because urban dwellers have higher literacy rates, low fertility rates and more economic advantages, yet, over 600 million of the same urban residents live under life- and health- threatening conditions as a result of poor sanitation and housing.

A World Bank Report (2001) shows that rates of urbanization in Africa are the highest in the world and that by the year 2025, more than half of the African population will be urban and that by 2020, Africa will have eleven mega cities with each having five million inhabitants or more and 3000 cities with populations of more than 20,000. The report observed that this rapid urbanization would take its toll on the quality of life, which in turn has negative influences on the health of the dwellers. Bilsborrow (1996), Cook (1970) and Yusuf et al. (2001) all agree that urbanization generally leads to overcrowding. Coca-Periaillon (2001) citing Crains (1998) writes:

Once large numbers of people are in close contact with each other, infectious agents can survive from one year to another, even if they produce life-long immunity in their host, because there will now be high concentration of fresh, susceptible people to keep the disease going. This does not only ensure continuous spread of known diseases but also the birth of new ones. Others get a free ride on some hosts until they are passed to another organism. Some of them invade population in the form of epidemics, first they spread quickly, and second, they are grave illnesses whereby those infected either die or survive in a short length of time.

In support of this position, Ssemakula (2002) explains that communicable diseases continue to be the main cause of death in Africa. He further explained that in 2001, almost two-thirds of deaths in Africa were from communicable diseases.

According to UNHabitat (2003), in 1995, Lagos became the world's 29<sup>th</sup> largest urban agglomeration with 6.5 million inhabitants. In 2003, it was the 23<sup>rd</sup> largest with 8.8 million people and it became the first mega city in sub-Saharan Africa when its metropolitan population hit 10 million in 2002 and it is likely to be one of the largest cities in the world by 2015. As explained in the previous sections, urbanization of African cities may be synonymous with urbanization of poverty with reduction in qualities of life, which may in turn impact negatively on the health of the dwellers, the result of which may be death. Lagos State may not be immune from all these vices and this makes it an interesting locus of research, especially in relation to the mortality of residents.

This paper examines the characteristics of the people of Lagos State in relation to the death pattern. The paper is divided into five sections. Section One is this introductory part. Section Two explains the study area. Section Three is on research methodology. Section Four concentrates on the analysis the data while Section Five deals with conclusion and recommendations.

## **RESEARCH METHODOLOGY**

### **The Study Area**

Lagos State has a total area of 3,577 sq km about 22 per cent of which is water (Oke et al., 2000). It is the smallest State in the Federation in terms of landmass, occupying only about 0.4 per cent of the area of Nigeria. Over 50 per cent of industries in Nigeria are located in the State of Lagos, contributing about 70% of the national gross industrial output (Oke et. al. 2001). The State accommodates about 6.2 per cent of the total population of Nigeria and its annual population growth rate is over 9 per cent. The average population density for Nigeria is 85 persons per sq km while that of Lagos State is about 1,308 persons per sq km. In some cases, density is over 20,000 people per square kilometer. The share of Lagos State in international trade in Nigeria is above 70 per cent and it is responsible for about 50 per cent of the total value added by the manufacturing sector in the country.

The target population of this study comprised names of persons listed on the death register of all Local Government Areas (LGAs) in the Lagos State. However, due to resource constraints, the study was limited to only four out of the twenty LGAs. For this purpose, the State was divided into twenty clusters, each cluster representing one LGA. Four clusters, namely; Lagos Island, Lagos Mainland, Epe and Ikorodu were selected using the simple random sampling technique. The choice of cluster sampling was premised on the fact that the elements of the population under study are geographically scattered (Van Matre and Gilbreath, 1980).

Six thousand two hundred and sixty-nine records of individuals who died during a period of five years (2000 – 2004) were obtained from the death records of the four LGAs. Data on cause of death, locality, occupation and age at death were recorded. Although the sample elements belong to several cohorts of different years and seasons, these individuals were treated as if they belonged to the same cohort.

### **Method of Analysis**

This study does a simple descriptive analysis of the characteristics of the population with the intention to understand the prevailing death pattern of Lagos State. Diagrams and charts are used for illustrations where necessary. To answer the research question, the following hypotheses were tested:

H<sub>01</sub>: There is no significant difference in mortality of male and female residents in Lagos State

H<sub>02</sub>: There is no significant difference in mortality across the various age groups in Lagos State?

H<sub>03</sub>: There is no significant difference in mortality across occupational groups in Lagos State?

H<sub>04</sub>: There is no significant difference in mortality amongst the migrant groups in Lagos State?

These hypotheses were tested using the Z -test for proportions, because the sample size was large at 6269. The  $\chi^2$  test was used in cases where the test involved more than two proportions. These tests and their underlying assumptions have been acknowledged and widely discussed in various researches including Van-Matre et al. (1980), Aczel (1999) and Craig et al. (1978).

### **RESULTS**

This section describes the death patterns and characteristics of the study population. It also entails the test of the hypotheses.

#### **Sex of the Deceased**

It was observed that 46.2 percent of the sample elements were females while 53.2 percent were males. These two values are not too far apart thereby giving the impression that the proportion of female dying may not be significantly different from the proportion of male. However, when subjected to test of hypothesis, the following results were obtained as presented below.

#### **Testing Hypothesis 1**

Hypothesis 1 is equivalent to testing

H<sub>01</sub>:  $P_M = P_F$

H<sub>11</sub>:  $P_M > P_F$



Where  $P_M$  is the proportion of male and

$P_F$  is the proportion of female residents who died in Lagos State during the study period.

Here  $Z = 7.838$  and when compared with the critical value of  $Z$  at  $\alpha = 0.05$  we conclude that there is a gender difference in death pattern in the population

#### Age Distribution.

Fig. 1 shows the clustering of age at death at around ages of 30 to 60 years with 44.3 per cent of the deceased falling within that age group. The mean age at death is 49.90 years, which is almost similar to the Nigerian national average of 50 years, although 51.9 percent of the deceased died before the commencement of their 50<sup>th</sup> birthday. Fig. 1 also shows that 64.9 per cent of those in the study area died before their 60<sup>th</sup> birthday. A modal age of 35 years shows that most people died at that age.

The 30 to 40 year class recorded 17.1 percent of deaths, which is the highest in the study. This is followed by those in the 20 to 30 year class with 14.3 per cent. The same ratio of deaths (14.3 percent) occurred for those within 40 to 50 year bracket. It is also important to observe that only 5.8 per cent died before their 20<sup>th</sup> birthday while 22.7 per cent lived beyond their 70<sup>th</sup> birthday. Although, the mean, median and modal age at death is not equal, there is an indication of asymmetry. Records of the ages of 48 people were not available.

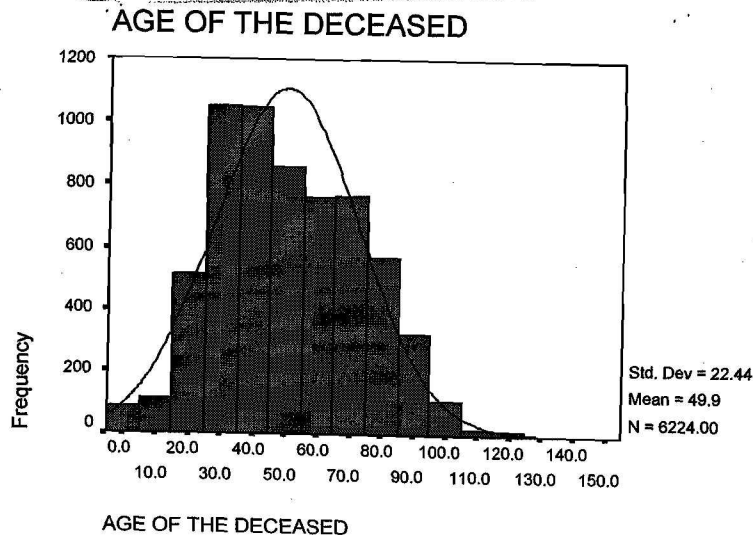


Fig 1

It was observed that the life expectancy at birth in the four LGAs is 50.41 years, which is similar to the life expectancy of 51.6 years for both sexes for the whole of Nigeria as captured by the year 2000 life table of the World Health Organization (WHO, 2000).

### ***Testing hypothesis 2***

Here, we test :

H<sub>02</sub>: There is no significant difference between the number of residents who died between ages 30 years and 50 years and those who died outside that age group.

H<sub>12</sub>: There is significant difference between the number of residents who died between ages 30 years and 50 years and those who died outside that age group.

H<sub>02</sub> is rejected since the calculated value of  $\chi^2$  is less than the critical value at  $\alpha=0.05$ .

### **Occupation of the Deceased**

Table 3 shows the distribution of the occupation of the six thousand, two hundred and sixty-nine individuals in the study and it was discovered that 36.4 percent of them were traders. This is not unexpected because trading is one major activity of the residents of Lagos State, which is the commercial nerve center of Nigeria.

Informal workers such as motor mechanics, vulcanizers, carpenters, bricklayers and other such artisans account for 7.0 per cent of the dead while students rank second with 8.1 per cent of them among the dead. Three point five (3.5) per cent of the dead are housewives, 3.9 per cent are businessmen. Workers in the private sector account for 1.1 per cent while the clergymen recorded only 1.0 per cent of the deaths, which is the lowest death rate in the study.

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Table 1: Distribution of the occupation of the deceased

Occupation	Frequency	Percent
Informal Worker	437	7.0
Businessmen	246	3.9
Trader	2283	36.4
Professional	248	4.0
Civil Servants	451	7.2
Clergymen	64	1.0
Students	506	8.1
Housewives	218	3.5
Workers in private sector	66	1.1
Others	720	11.5
None Response	1030	16.4
Total	6269	100

Source: Lagos State Government Records

Table 1 is comparable to the one used by Odumosu et. al. (1999) in describing the broad occupational categories of the people of Lagos State. According to Odumosu, there is enough evidence to show that petty trading is a major occupation in the Lagos Metropolis. He observed that mechanics and other petty vocations were also practiced by many people in the state.

### **Testing Hypothesis 3**

This section tests two hypotheses:

In first part tested as follows:

$H_{03a}$ : There is no significant difference in mortality across occupational groups in Lagos State

$H_{13a}$ : There is significant difference in mortality across occupational groups in Lagos State

The calculated value of  $\chi^2 = 7506.544$  which leads to the rejection of  $H_{03a}$  at  $\alpha = 0.05$  indicates that there is a significant difference in mortality across occupational groups in the state.

In what follows, the occupational group was stratified into two; namely, the traders and those who belong to the occupational categories other than traders. The hypothesis here is:

$H_{03b}$ : There is no significant difference in the mortality rates of traders and those who are in other occupational groups in Lagos State.

$H_{13b}$ : There is significant difference in mortality of traders and those who are in the other occupational groups in Lagos State

With the calculated values of  $\chi^2 = 462.6271$ ,  $H_{03b}$  is rejected at  $\alpha=0.05$

### **Cause of Death**

Table 2 above depicts the distribution of the causes of death in the four LGAs. Cardiovascular disease is singularly responsible for 26.5 percent of deaths recorded. This is followed by infections, parasitic diseases and cerebrovascular problems, which recorded 16.6 percent each. These three diseases jointly account for 59.8 per cent of deaths in the four LGAs. This is in consonance with the statistics of the World Health Organization, which designates these three diseases as the prominent killers in the Third World. The Worldwide Resources (1996-97) further explained that although in 1993, infectious and parasitic diseases were responsible for only one percent of deaths in the developed countries, they accounted for 41.5% of deaths in the developing countries. Noteworthy is that HIV/AIDS accounts for just 0.9 percent of deaths, which is the lowest cause of death in the study. This low figure may be due to under-reporting because of the social stigma attached to HIV/AIDS in the country.

Prominent among the first four causes of deaths is respiratory disease, which is responsible for 7.3 percent of the deaths. Other causes of deaths are Maternal (3.6 per

cent), Cancer (1.9 per cent), Anemia (2.6 per cent), Malaria (2.4 per cent) and old age (6.3 per cent). All the other causes of deaths in the population were grouped into one category and they jointly contribute 14.8 per cent to mortality in Lagos State.

Table 2: Distribution of causes of death in Lagos State

Cause of death	Frequency	Percent
Infection and Parasitic diseases	1031	16.4
Cardiovascular Diseases	1659	26.5
Cerebrovascular Diseases	1031	16.4
Respiration	456	7.3
HIV/AIDS	58	0.9
Maternal	225	3.6
Old Age	394	6.3
Cancer	120	1.9
Anemia	166	2.6
Malaria	151	2.4
Others	929	14.8
None-Responses	49	0.8
Total	6269	100

Source: Lagos State Government Records

#### **Cause of death and Occupation**

This section examines the relationship between Cause of Death and Occupation of the deceased.

##### ***Infection and parasitic diseases and Occupation***

Within Cause of Death, out of those who died of infection and parasitic diseases, 41.6 per cent were traders, 12.1 per cent were students, and 11.3 per cent were informal workers while 7.4 per cent were civil servants. 15.2 per cent of those who died belong to other categories of workers.

The rate of infection and its fatal consequences on traders as indicated in this result seems to suggest the need for close scrutiny of the markets by the managers of local government affairs and the Lagos State Marketing Board, an arm of the State govern-

ment that is saddled with the responsibility of managing the markets in Lagos. There may be the need to enforce general sanitation laws and promulgate new by-laws where necessary for the protection of the market environment and general obedience of sanitation laws. In addition, there is the need to modernize the markets by providing adequate space, convenient sewage and waste disposal facilities, building of modern toilets and dispensary to take care of the day to day health needs of the users of the market.

Also, within occupation, 22.3 per cent of students died of infection and parasitic diseases, 20.1 per cent of informal workers, 18.4 per cent of traders, 18.1 per cent of housewives and 16 per cent of businessmen, 14.6 per cent of the civil servants and 14.6 per cent of the professionals died of infection and parasitic diseases.

#### ***Cardiovascular Diseases and Occupation***

Among those who died of cardiovascular problems 38.9 per cent are traders, 11.8 per cent were civil servants, 10.9 per cent were informal workers, 7.3 per cent were accounted for by students, 5.1 per cent by professionals, 5.0 per cent by businessmen and 0.9 per cent by workers in private sector.

Within the occupational group, 33.3 per cent of workers in private sector died of cardiovascular diseases, 32.5 per cent of civil servants died of the same cause. In the other categories, 30.2 per cent of businessmen, 29.7 per cent of housewives, 26.8 per cent of informal workers, 26.3 per cent of professionals and 24 per cent of traders died of cardiovascular problems.

#### ***Cerebrovascular Disease and Occupation***

Among those who died of cerebrovascular diseases, 43.2 per cent of them were traders, 8.9 per cent were informal workers, 8.2 per cent were civil servants, 6.0 per cent are professionals, 4.0 per cent were students and 4.0 per cent were businessmen.

Within occupation, 21.7 per cent of clergymen, 19.5 per cent of the professionals, 16.8 per cent of the traders, 15.4 per cent of the businessmen, 14.8 per cent of the workers in the private sector, 14.2 per cent of housewives and 13.8 per cent of informal workers died of cardiovascular disease.

#### ***Respiratory Disease and Occupation***

Of those who died of respiratory diseases traders accounted for 32.5 per cent, students 10.3 per cent, informal workers 11.6 per cent while civil servants accounted for 10.6 per cent. The high percentage of traders with respiratory problems may stem from the situation in the market places. Many of the traders do their business in unprotected environment where they are exposed to polluted air resulting from car ex-

haust fumes, dusts and other such pollutants that are known to be inimical to human health.

Within the occupation of the deceased, 11.6 per cent of the professionals, 9.5 per cent of civil servants, 9.3 percent of informal workers, 8.6 per cent of students and 8.6 per cent of the businessmen died of respiratory problems.

#### ***HIV/AIDS and Occupation***

It was found that 27.5 per cent of those killed by HIV/AIDS were traders while civil servants were second with 17.5 per cent. In this same category, student's accounted for 15 per cent, informal workers and professionals accounted for 10.0 per cent each and no clergyman and no housewives died of HIV/AIDS.

#### ***Cancer and Occupation***

Among those who died of cancer, 28.4 percent were traders, 20.9 per cent were civil servants, 13.4 percent were professionals, 7.5 percent were students, 6.0 percent were informal workers, and 4.5 per cent were businessmen and housewives and workers in private sector account for 3.0 per cent each.

Within the occupation of the deceased, no clergyman died of cancer. 7.4 percent of workers in private sector, 4.7 per cent of the professionals, 3.9 per cent of civil servants died of cancer. Cancer also accounted for 1.3 percent of the deaths among students and among housewives.

#### ***Malaria and Occupation***

Malaria was responsible for the death of 44.1 per cent of the traders, 17.6 per cent of the students, 5.9 per cent of the informal workers, 2.9 per cent of the civil servants and 2 percent each of the businessmen and professionals in our study.

#### ***Anaemia and Occupation***

Anaemia accounted for 28.7 percent of deaths among traders, 23.5 percent of the deaths among students and 9.6 percent of the informal workers. The record shows that 4.3 per cent of the civil servants and 3.5 percent of the businessmen died of Anaemia while only 0.9 per cent of housewives died of the same cause.

#### ***Sex of the Deceased and Cause of Death***

**Table 3: Sex of the Deceased and Cause of Death**

Cause of Death	Sex of the Deceased		Total
	Female	Male	
Infection and Parasitic Diseases	459(44.5%)	572 (55.5%)	1031
Cardiovascular Disease	790 (47.7%)	867 (52.3%)	1657
Cerebrovascular Disease	443 (43.1%) (56.9%)	586	1029
Respiratory Diseases	194 (42.6%)	261 (57.4%)	455
HIV/AIDS	22 (37.9%) ( 62.1%)	36	58
Maternal Deaths	225 (100%)	- ( 0 % )	225
Old Age	220 (55.8%)	174 (44.2%)	394
Cancer	69 (58%)	50 (42%)	119
Anaemia	88 (53%)	78 (47%)	166
Malaria	76 (50.3%)	75 (49.7%)	151
Others	323 (34.8%) (65.2%)	606	929
Total	2887	3327	6214

Source: Lagos State Government Records

In the group of those who died of cardiovascular problems, 47.7 per cent were females and 52.3 per cent were males. Among the females, 27.4 per cent died of cardiovascular problems compared to 26.1 per cent of males who died of the same cause.

Among those who died of cerebrovascular diseases, 43.1 per cent were females and 56.9 per cent were males. Among the females in this study, 15.3 per cent died of cerebrovascular diseases and in the group of males, 17.6 per cent died of the same cause.

Also, 42.5 percent of those who died of respiratory diseases were females while the remaining 57.5 per cent were males. Of those who were killed by HIV/AIDS, 37.9 per cent were females and 62.1 per cent were males. Amongst those who died of Anaemia, 53.0 per cent were females and 47.0 per cent were males. Whereas, 50.3 per cent of those who died of Malaria were females, 49.7 per cent were males. In the category of those who died of old age 55.8 per cent were females while 44.2 per cent were males. Like in the other categories, among those who died as a result of cancer 57.5 per cent were females while 42.5 per cent were males. In most of the cases mentioned above, the percentage of deaths recorded among the females for various dis-



eases was generally found to be more than that of their male counterparts, an indication that women in Lagos State may have a shorter longer life-span compared to their male counterparts.

Although, the State of World Population report ( [www.Thesta.htm](http://www.Thesta.htm), 2001) posits that despite the position of women in societies as bearers of children and providers of resources for taking care of the families, they have very little control and lack rights in many aspects of their lives and are therefore faced with a lot of risks which in turn impede their health. Women make up more than half of the world's agricultural work force ([www.unfpa.org](http://www.unfpa.org), 2004).

In Lagos State, like many Nigerian cities, women are found working in many hazardous job locations such as in the factory, building industry and petty trading where they spend substantial part of the day in the open space, collecting wood and cow dung. Research shows that soot from the burning wood, dung, crop residue and coal for cooking and heating affect the health of about 2.5 billion people mostly women and girl. It is estimated that soot inhalation kills more than 2.2 million each year, over 98 per cent of them in developing countries ([www.unfpa.org](http://www.unfpa.org), 2004).

#### Place of Birth of the Deceased by States

Table 4: Place of Birth of the Deceased

PLACE OF BIRTH	FREQUENCY	PERCENT
ABIA	167	2.7
ANAMBRA	329	5.2
ADAMAWA	15	.2
BAUCHI	1	.0
BENUE	23	.4
BAYELSA	24	.4
BORNO	2	.0
CROSS RIVERS	55	.9
DELTA	290	4.6
EDO	161	2.6
ENUGU	172	2.7
EBOYN	48	.8
GONGOLA	2	.0
GOMBE	1	.0
JIGAWA	8	.1
KWARA	155	2.5
KANO	15	.2
KADUNA	24	.4

study reveals that among those who died of infection and parasitic diseases, migrants accounted for 56.3 per cent while 56.9 percent of them died of cardiovascular diseases and 54.5 percent died of cerebrovascular problems.

These percentage contributions by the three causes of death seem to suggest that the cause of deaths has a migratory factor because only 43.7 per cent of Lagosians died of infection and parasitic diseases, 43.1 per cent died of cardiovascular disease while 45.6 per cent died of cerebrovascular problems. Performances of migrants in the other causes of death are not better than it is for the three causes mentioned above.

Also, it was found that 43.0 per cent of Lagosians died of respiratory disease. This implies that 57 per cent of those killed by respiratory diseases are migrants. Also, 62.1 per cent of those who died of HIV/AIDS were migrants. It is noteworthy that migrants account for only 21.6 per cent of those who died of Old Age, a situation that gives the impression that indigenous people of Lagos live longer than the migrants. This can be expected because the migrants tend to work as laborers and factory floor which is exacting on their energy time and health. The perception that Lagos is a "farmland" from where they till the land to make money becomes alive. This view is probably responsible for the general involvement of the migrants in the hustle and bustle of Lagos life, which in turn takes its toll on their health. Apart from old age, indigenous people probably die more of Malaria than the migrants as they account for 55.6 per cent of the deaths in that category. Furthermore, 62.5 per cent of the migrants died of cancer and 51.2 percent of them died of anaemia

It is note worthy that except for states, such as, Bayelsa, Ebonyi, Kano, Rivers, Taraba and Zamfara, the highest killer in all the remaining thirty states is cardiovascular disease. Adamawa State recorded the highest percent of deaths (57.1 per cent) in the cardiovascular group, followed by Gongola with 50 per cent, Yobe with 50 per cent, and Sokoto with 42.9 per cent. The data that resulted in these percentages are too scanty to allow for any specific meaningful conclusion. Kano state recorded only 6.7 per cent of deaths due to cardiovascular problem, this was the lowest among the States in Nigeria. Unlike in the situation of other migrants, Cerebrovascular disease is the major cause of death among those from Bayelsa State while infection and parasitic disease is the highest killer among migrants from Ebonyi and Kano states, who account for 39.6 per cent and 26.7 per cent respectively of the disease.

## **CONCLUSION AND RECOMMENDATION**

This study describes the general characteristics of the people of Lagos State in relation to death pattern. It shows, through tests of hypotheses that there is gender difference in mortality in Lagos State and differences in mortality across age groups as well as mortality rates was found to be higher in the 30 to 59 years age category than any other group in the population. There was significant difference in mortality across occupational groups and that mortality was higher among traders than any other occupational category. As well, there was a significant difference in mortality

among the migrant groups. Those whose place of origin was in Lagos State recorded higher mortality than those born outside Lagos State.

The study also shows the clustering of age at death at around ages of 30 to 60 years as 44.3 per cent of the deceased died within that age group. The mean age at death was 49.90 years, which was slightly lower than the Nigerian national average of 50 years, although 51.9 percent of the deceased died before the commencement of their 50<sup>th</sup> birthday. Furthermore, 64.9 per cent of those in the study died before their 60<sup>th</sup> birthday. A modal age of 35 years shows that most people died at that age.

Okunola (2004) summed up the state of health of Lagos when he referred to it as "West Africa's Biggest Urban Jungle." He premised his argument on the situation on Lagos Streets where city managers have difficulty in clearing the over 10,000 tons of waste generated everyday and a vehicular density of 222 automobiles per kilometer causes endless traffic jams. He explained that only 40 per cent of the residents have access to portable water and there is only 40 percent sanitation coverage. These statistics continue to pose serious problems to public administrators and community leaders, as they are unable to cope with the heavy infrastructural decay, deepening poverty, massive unemployment, security inadequacies, ever-emerging slums and overwhelming environmental decay.

It was out of the concern of the above, that the 38<sup>th</sup> Ordinary Session of the Summit of African Union and Committee of NEPAD implementation committee selected Lagos and six other cities for targeted intervention in local capacity building for community services, infrastructure for poverty reduction, environmental management, safety and disaster management, housing and urban governance (UNHabitat, 2003).

The consequence of the aforementioned is that there is need for policy formulation on the following:

Investment in research to evolve new ways and techniques of the improvement of the rural area so that more urban dwellers could be pulled back to the rural areas.

Continuous provision of fund and support to encourage the local government to perform its statutory function of providing efficient primary health care services and other environmental intervention to the people.

## REFERENCES

Aczel, D. Amir (1999). Complete Business Statistics. 4<sup>th</sup> Edition. New York: The Irwin-McGraw Hill Companies Inc.

- Bilsborrow, Richard (1996). "The State of the Art and overview of the chapters." In UNPF (ed.). Migration, Urbanization, and Development: New Directions and Issues. (Proceedings of the Symposium on Internal Migration and Urbanization in Developing Countries) United Nations Population Funds. 2- 53
- Coca-Perraillon, Marcelo (2001). Urbanization, Mortality and Growth. An M.A Thesis Submitted to Turfts University (unpublished). 1-10
- Craig, T. Allen and Hogg R.V. (1978). Introduction to Mathematical Statistics. 4<sup>th</sup> Ed., New York, NY: McMillan Publishing Co. 288-290
- Cook, Robert (1970). The World's Great Cities: Evolution or Devolution. Urban Sociology, Contemporary Readings, Meredith Corporation, New York. 1-4
- Federal Republic of Nigeria (1999). Constitution of the Federal Republic of Nigeria. Lagos, Nigeria: Federal Government Press.
- Goldstein, Sidney (1976). Facets of redistribution: Research challenges and Opportunities." Demography, Vol. 13: 423-434
- Odumosu, J. O (2004). The Catalo-Reactant of Development: Urbanization Through the Ages. An Inaugural Lecture, Lagos State University, Lagos, Nigeria.
- Odumosu, J. O. (1990). Spatio-Temporal Analysis of Metropolitan Process: The Case of Lagos. A Doctoral Dissertation Submitted to the Department of Geography, University of Lagos, Lagos, Nigeria (unpublished).
- Odumosu, Tayo; Yinka Balogun & Kayode, Ojo (1999). (ed). Lagos State in Maps. Ibadan, Nigeria: Rex Charles Publication. 1-50
- Oke, Adewale; Adedokun, Laide ; Soretire Fola & Faweya Olufemi (2001). Lagos State, Nigeria: Report of the In-Depth Assessment of the HIV/AIDS Situation- Implementing Aids Prevention and Care Project (IMPACT). USAID, Family Health International
- Oke, Olufemi & Julie Victor –Ahuchogu (2000). Report of the In-Depth Assessment In Selected Local Governments- Implementing Aids Prevention and Care Project (IMPACT). USAID, Family Health International.
- Okunola, Paul (2003). "The Power and the Heartbeat of West Africa's Biggest Urban Jungle." Unhabitat: Globalization and Urban Culture: <http://www.unhabitat.org/mediacentre/documents/sowc/Lagos.pdf> . DA: 30/07/2002

Onibokun, A.G. & Kumuyi, A. J. (2003). The Urbanization Process in Africa. Le Centre de Recherches pour le developement international Une science pour l'humane. 2-6.

Rand, R. Wilcox (2001). Fundamental of Modern Statistical Methods: Substantially Improving Power and Accuracy. New York, NY: Springer-Verlag.

Rosan, Christiana, Ruble A. Blair & Tulchin S. Joseph (2000). Urbanization Population, Environment and Security. A Report of the Comparative Urban Studies Project. Woodrow Wilson International Center for Scholars, Washington DC .Taken from <http://www.wwics.si.edu/topics/pubs/urban.rpt>. Pdf DA: 30/07/2002

Ssemakula, Kiwanuka John (2002). "African Health Analysis - Selected Data from World Health Report 2002." In WHO (ed.). Medilinks African Health Report 2002. Available: [http:// www.medilink2.org/publication/AfricanHealth2002.pdf](http://www.medilink2.org/publication/AfricanHealth2002.pdf). DA: 30/07/2002

UNhabitat (2003). State of the World Cities: Trends in Sub-Saharan Africa: Urbanization and Metropolitanization. Available: [http:// www.unhabitat.org/medicentre/documents/sowc/Regional/Africa.pdf](http://www.unhabitat.org/medicentre/documents/sowc/Regional/Africa.pdf). DA: 30/07/2002

UNO. (n.d.). Habitat II: Population and Urbanization. United Nations Department of Public Information. [www.population and urbanization.htm](http://www.populationandurbanization.htm). DA: 30/7/2002

Van Matre, J. G. & Gilbreath, G. H. (1980). Statistics for Business and Economics: Dallas, TX: Business publications Inc.

World Resources (1996-97). The Urban Environment: A Guide to the Global Environment. -<http://www.wri.org/wr-96-97/96tocful.html>. DA: 30/07/2002

World Bank Regional Report-African Region (2001). Sportlight Africa: Regional Overview. Taken from [http:// www.web.Mit.edu / urbanupgrading / upgrading / case-example / overview-africa / regionaloverview.htm](http://www.web.Mit.edu/urbanupgrading/upgrading/case-example/overview-africa/regionaloverview.htm). DA: 30/07/2002

Yusuf, S. (2002). Global Burden of Cardiovascular Diseases. American Heart Association Inc. Taken from [http:// circ.ahajournals.org / cgi / content / full / 104 / 22 / 27 46](http://circ.ahajournals.org/cgi/content/full/104/22/2746)DA: 30/07/2002