SOKOTO JOURNAL OF GEOGRAPHICAL STUDIES (SJGS) *PRINT ISSN: 3043-551X*

Volume 1, 2024 (Maiden Edition)

DETERMINING AGING POPULATION IN OKE-OYI AN EMERGING TOWN IN ILORIN-EAST LOCAL GOVERNMENT AREA USING MODERN TECHNOLOGY

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Abstract

Population aging is a contemporary issue in world. This is particularly obvious in developing countries where the population contains more of children. In these developing countries including Nigeria, the rise in life expectancy witnessed has resulted in rise in the median age of the people. In Nigeria, though life expectancy has been reported to be increasing, census the primary source of the population data has been infrequently undertaken. The indirect methods that have often been used to generate the data, most of the times depend on data generated through the census. Hence, there is need to develop reliable models for population data generation to facilitate social, economic, political and spatial development planning. Thus, this paper is an attempt, using indirect technique to generate data of aging population in Oke-Oyi town, using the imagery obtained from the Google Earth application. The Objectives are to; identify the demographic characteristics of Oke-Oyi; examine its socio-economic activities; and determine the crowding index of the study area. Data for this study were collected from primary and secondary sources. A survey technique was used. In that, 400 copies of questionnaire were administered purposively. Descriptive techniques were employed for data analysis. The crowding index that is the average number of people per house was determined as 14.11 and the aging population 873. Thus, the technique is recommended for population data generation for areas facing similar problem of infrequent population data for planning purposes.

Keywords: *Population, Data, Generation, Imagery and Technology*.

Introduction

Population aging is a contemporary issue in world. This is more common in the developing countries where majority of the population use to be children (NPC, 2020). In the last few decades, the former high fertility rates have continued to decline as majority now adopt small family sizes. In the mean, the improvement recorded in medicine that had resulted in a general decrease in deaths led to increase in the median age of the people (Fashagba, 2023). Hence, there is increase in life cycle of people in the developing countries including Nigeria. The proportion of population aging was noted to surpass the under 5 population in 2018 for the first time (Fashagba, 2023). The demographic shift would obviously affect the consumption pattern of Nigeria very soon. Overcoming this demographical shift would require good population data. These social, economic, political and spatial data can be exploited for necessary developmental planning. Unfortunately, as important as the population data is, the major source of generating it, the census is usually carried out infrequently in Nigeria. Beside this, most of the censuses undertaken in the past have not been able to provide all the data required. For instance, the last census undertaken in 2006 could not produce population data for any locality in Nigeria (NPC, 2010).

The need for these data tends to have become heightened in the last few years when the population for most developing countries in world begun to get aging. In the mean, the phrase population aging is demographically defined as increase in the median age of a population due to the declining fertility rate and increasing life expectancy. In other words, it is the increase in proportion of the older persons compared to the overall population. The increase in the proportion of population aging is more in the less developed countries including Nigeria that used to have low life expectancy. Though the range of ages adopted for aging population varies, it is usually from 55-65years and above (Fashagba, 2023). The aging population, for the first time, outnumbered the Under 5 age population in 2018 (UN, 2018) According to the projection of United Nations (2019), the percentage of the aging population would surpass the adolescent and youth populations by 2050.

In ensuring good planning for the demographic shift, there is need for adequate, dependable and reliable demographic data. Without any doubt, the major source of these data is the census which has obviously been haphazardly undertaken in Nigeria. The last census carried out in Nigeria was in 2006- that is a period about 18years. The long period taken before the next census is of course inadequate particularly when compared to the 10years inter-censal recommended by the United Nations. The effort made to conduct another census in 2023 when it was discovered that the available population data generated from the last census had become outdated apparently failed despite the huge amount of money (over 200 billion Naira) expanded on it. From all indications, there is no feasibility of undertaking another census to determine the actual number of the population aging. As a matter of fact, the declining children population and the increasing population aging require direct enumeration.

Obviously, the on-going demographic shift could result in an upward and or downward shift in the consumption patterns of goods and services for various age compositions. Hence, this present effort is an attempt to generate the demographic data required for planning. This paper aims at generating the aging population in Oke-Oyi town, using imagery obtained from the Google Earth device. The objectives are to; i. examine the demographic characteristics of Oke-Oyi; ii. determine the socio-economic activities of the people; and iii. determine the crowding index (that is the average number of people) per house in the study area. The availability of the data of the demographic composition would go a long way to assist the government in planning for her developmental programms.

Study Area

Oke Oyi town is the study area. It is the present headquarters of Ilorin-East Local Government Area. The LGA has an area of 484km^2 with a total population of 675,075 (NPC, 2010). The LGA is located on latitudes of $5^0$6'- $6^0$3'N and longitudes of $4^0$7'- $4^0$9'E of the Green-wish Meridian (Figure 1). The local government is bounded to the east by Ifelodun LGA, to the West, Ilorin West LGA, to the South, Ilorin South LGA and to the North, Moro LGA. Specifically, Oke Oyi town has area of 0.652 (European Commission Joint Research Centre (ECJRC). and is located about 25 Km away from Ilorin (KWBS, 2023).

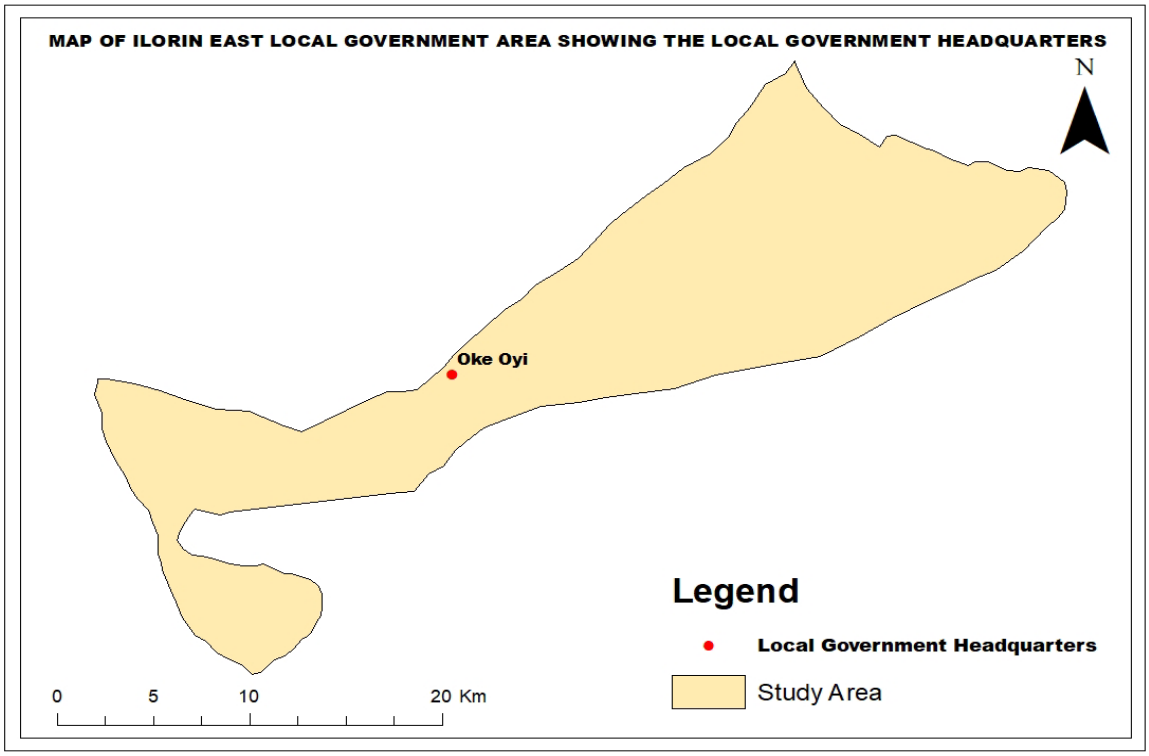

Figure 1: Map of Ilorin East Local Government Area Showing Oke Oyi Town
Source: Authors (2024)

According to Atlas, the town is perhaps the largest town in Ilorin-East local government area, considering the physical structure, the built up area. Oke Oyi is the seat of power of the local government. Thus, it houses the LG Secretariat. Furthermore, Oke Oyi together with Oke Ose and Alalubosa towns jointly owned a political ward. According to (ECJRC, 2000), Oke Oyi town has an enumerated population of 6,124 in 1991. Available NPC 2022 population estimate for the town shows that it has about 38,760 people.

The town has two major public health centres, precisely a maternity home and a hospital. There are few private hospitals in the town. The town has a number of educational institutions, but they are all elementary and high schools. In the elementary section, there is only one public primary school, others are privately owned. Similarly, from personal survey in 2023, the town has two public secondary school and other secondary schools are owned by individuals

Oke Oyi area has a hot tropical climate with a prevailing feature of high temperature throughout the year, high humidity and pronounced wet and dry seasons. The rain starts sometimes around April and ends in October. The maximum temperature is generally around 38^0 and minimum temperature $33^{0.}$ The area has limited trees of medium height with short grass. Perhaps, this is because the land has been subjected to intense cultivation. Nonetheless, majority of the people appeared to be farmers while the women engaged in both farming and marketing activities. Probably, this is the reason why the town's central market is opened periodically. That is every four day.

Materials and Methods

The primary and secondary data sources were used. The researcher and three other field staff collected their data directly from the people in the last week of October 2023 in Oke Oyi. Having given adequate training to the field staff, a survey method was employed. About 410 copies of structured questionnaire were administered on the selected houses in the place. The training given to the field staff assisted a lot in guiding the selected respondents on how to answer those questions in the questionnaire. Because of this training exercise, the number of waste recorded from the returned questionnaire was minimal. Thus, 400 copies of questionnaire were returned valid. This no doubt satisfied the required number for demographic study such as this (Oriola, 2002 and Oludoyi, 2007). As often recommended, a minimum of 400 copies of questionnaire satisfies demographic survey. Further, purposive sampling was employed to select houses from all the streets where samples were drawn. Initially, the researchers intended to use multi stage sampling technique, but the technique was practically impossible on the field as their houses were poorly organized. Indeed, houses appeared scattered over the place. Resulting from this, having counted all the houses through imagery, the researchers adopted simple random sampling echnique for house selection. Household heads were sampled in all the houses selected. In cases where the selected houses have more than one household, the first household seen was sampled. Where the household heads could not be reached in the selected houses, the adjacent houses were taken in replacement.

The imagery of Oke Oyi town was captured through Google map (Google Earth). Through this source, the total number of inhabited houses was generated as 1,344. Efforts made to see the difference between the houses roofed and inhabited and those roofed but not inhabited, showed that there is insignificant difference. As a matter of fact, only very few houses were roofed and not inhabited. The researchers discovered from the visitation conducted before and during the questionnaire administration that most of the houses roofed are inhabited. In reality, some of the houses inhabited have not been completed. For instance, some of the houses designed to contain 6 or 8 rooms, only 1 or 2 of those rooms were roofed. In that half-completed house type, the people live.

The data collected were analysed using descriptive statistics. Specifically, the demographic characteristics, household and housing data were summarized using frequency distribution, tables, simple percentage and the mean, otherwise referred to as “crowding index (CI)” The crowding index in this study is the average number of people per house.

The formulae for estimating the town’s population is
P = CI per house * NoH ……...……..……(1)
Where
P = the population;
CI = crowding index is also the average number of people per house;
NoH= Number of inhabited houses in the town.

Results and Discussions

Demographic Characteristics and Socio-Economic Activities

This section contains the demographic characteristics and socio-economic activities. As shows in Table 1a, about 3/4 of the respondents reside in a Face to Face house type. The percentage of people residing in a face-to-face house type is high when compared to the 3/5 reported for people living in the same house type by Fashagba (2015) in his research work carried out in Kabba, an emerging town in Kogi state.

Table 1: General Information

1a	**Type of House**		
i.	Face to Face House	290	72.5
ii.	Flat House	110	27.5
	Total	**400**	**100**
1b	**Educational Qualification**		
i.	No former Education	60	15
ii.	Arabic education	10	2.5
iii.	FSLC	65	16.25
iv.	SSCE	175	43.75
v.	HND/Degree	50	12.5
vi.	Others	40	10
	Total	**400**	**100**
1c	**Occupation Distribution**		
i.	Farming	10	2.5
ii.	Business/trading	330	82.5
iii.	Artisan	20	5
iv.	Civil servant	0	0
v.	Unemployed	40	10
	Total	**400**	**100**
1d	**Marital Distribution**		
i.	Single	135	33.75
ii.	Married	235	58.75
iii.	Divorce	5	1.25
iv.	Separated	10	2.5
v.	Others	15	3.75
	Total	**400**	**100**
1e.	**Place of Origin**		
i.	Islam	320	80
ii.	Christianity	80	20
Iii	ATR	0	0
	Total	**400**	**100**

Source: Authors Field Work (2023)

Table 1a also indicates that about ¼ of the people live in flat houses. Revelation from Table 1b shows that about 44% of the people have a Senior Secondary School Certificate (SSCE). This implies that nearly half of the respondents in the study area hold a SSCE. According to Table 1c, about 82.5% of the respondents are business men or women. Only about, 2.5% are farmers, while about 10% unemployed. As can be seen in the table, majority of the respondents are married. Indeed, about 66.5% of the respondents are married, while 31% single. According to Table 1e, 80% are Muslims, while 20% Christians. This religion distribution defers from the result reported for a sister local government in the state by Fashgba and Agboola (2014). In their work, over 40% of the respondents were Christians when all other respondents practiced Islam. The large number of people that are Muslims in this work can affect the population since the religion allows men to have more wives. Further, Table 1e shows that none of the people practices other religion.

Household Size

The distribution of all the household sizes in Oke Oyi is as presented in Table 2. According to the table, about 38% of the household contains between 3-6 persons. This would mean about 70% live in household of 1-6, apparently, majority live in this household size in this study. In a similar work done by Fashagba (2015), only about 29% lived in the same household size. Further, about 21% of

the household size contains between 7-10 persons. This of course is the second largest among all the distributions in this study. Most houses indeed contain spouses and children.

Table 2: Household Size

S/N	Size of Household	Number of People	Percentage (%)
1	1	80	20
2	2	70	10.5
3	3-6	125	38.25
4	7-10	85	21.25
5	10 and Above	40	10
	Total	**400**	**100**

Source: Authors Field Work (2023)

Household Heads by Aged

The distribution of the aged household heads in the town is contained in table 3. About 70% of those captured in the study are married. Revelation from the table indicates that, about 55% of the married respondents are house wives, while the remaining 45% among the married respondents are husbands. The distribution indicates almost the same percentage with the one observed by Fashagba (2015) in his work. The total for husbands was 48%, while wives were 53%. It would appear, majority of the men in this study have one wife even though religion permits them to marry more than one wife. Only few men married more than one wife.

Table 3: Distribution of Household Headed by Aged Individuals

S/N	Household Head	Percentage (%)
1	Husbands	45
2	Wives	55
	Total	**100**

Source: Authors Field Work (2023)

Aged Gender's Distribution

Table 4 shows the distribution for aged gender. As revealed by the table, 36.25% of the respondents are males, while 30% are females. The remaining 33.75% of the distribution in the study do not have aged individuals in their households.

Table 4: Gender for Aged Distribution

S/N	Gender	Number of People	Percentage (%)
1	Male	80	36.25
2	Female	70	30
3	Nil	125	33.75
	Total	**400**	**100**

Source: Authors Field Work (2023)

Employment Status of Aged Individuals

Though aged people are considered old and probably should not be involved in a serious work, some of them need to engage in some works, especially those who have nothing to rely on for survival. Table 5 shows the occupational distribution for the aged. Indeed, about 56.25% of the distribution has no major work to engage in. Only about 22.5% are engaging in business or trading activities. While about 9% are retirees. Farmers and artisans are about 6% each. As can be seen, the distribution that shows that majority do have good jobs would appear so, because very small

numbers are revealed as farmers, artisans and even retirees. If the aged engage in farming, the percentage of the unemployed would have been low. Although, the small number of people engaging in farming activities could be the attributed the fact that the place is emerging town.

Table 5: Employment Status of Aged Persons

S/N	Occupation	Number of People	Percentage (%)
1	Farming	25	6.25
2	Business/Trading	90	22.5
3	Artisan	25	6.25
4	Retired	35	8.75
5	No Work	225	56.25
	Total	**400**	**100**

Source: Authors Field Work (2023)

Population Estimate of Oke Oyi

The demographic characteristics of the people generated from the questionnaire were employed to estimate the population. Table 6 reveals the estimated crowding index of Oke Oyi town. As revealed by the table, Oke Oyi town has a crowding index (CI) of 14.11 persons per house. This is a little higher than the crowding index (12.2) reported for Kabba town by Fashagba in 2015. On the contrary, Olorunfemi (1981) observed 15.5 crowding index for Ilorin, the Kwara State Capital when he used the indirect population data generation technique to determine the population of Ilorin. When the crowding index of 14.11 persons per house in Oke-Oyi was multiplied by the 1,344 inhabited houses, the population of the Oke-Oyi was estimated as 18,967 people.

Table 6: Estimated Population of Oke Oyi

S/N	Average Number of People per House	Number of Houses Counted	Population Estimate
1	14.11	1,344	18,967

Source: Authors Field Work (2023)

Estimate of Aged Population

Table 7 shows the estimated aged population as 874. This suggests that 1 of every 20 persons is an aged person. Obviously, this is not far from the NPC 2006 result which states that 5% of the enumerated populations are 65years and above. The data presented in this research work are obviously vital for planning as the last census held in 2006 in Nigeria could not produce such specific figures for any of the localities in Nigeria, as earlier mentioned. The absence of the data today has often had adverse effects on the country's economic development. However, the male aged population is 478, while female's is 396.

Table 7: Estimated Aged Population Distribution

S/N	Demographic Characteristics	Number of People
1	Aged Males	478
2	Aged Females	396
3	Total Age Population	874

Source: Authors Field Work (2023)

Conclusion and Recommendations

This paper has determined the aged person population in Oke Oyi, an emerging town, the Ilorin East Local Government headquarters. Using the indirect technique, the crowding index was determined as 11.14 per house and the estimated aged population is 874. This implies that, there is one aged person in every two houses in Oke-oyi. Similarly, 1 of every 20 individuals in the place is an aged person. Unfortunately, more than half of the aged persons have no serious source of income. Only 6% of the people are retirees. Perhaps, this is why the poverty rate is high. Obviously, poverty is an incidence that often leads to early death among the people, including the aged. Thus, this paper recommends that this indirect population data generation method should be used to generate the aged population data for places with poor or irregular census administration. The aged population data generated via this device could be used for social, economic and spatial planning.

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