SIERRA LEONE 2015 POPULATION AND HOUSING CENSUS

THEMATIC REPORT ON

POPULATION STRUCTURE AND POPULATION DISTRIBUTION

STATISTICS SIERRA LEONE (SSL)
OCTOBER 2017

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We wish to thank the Government of Sierra Leone for the financial and oversight support to the project. Special thanks goes to our development partners DFID, Irish Aid, UNFPA and UNDP for providing the funds, technical support and guidance in the implementation of the Census project.

DISCLAIMER

ACKNOWLEDGEMENTS

We wish to acknowledge the contributions of all those who helped us to complete this report. Firstly, we are grateful to Statistics Sierra Leone for giving us an opportunity to participate. Our thanks also go to UNFPA for funding the writing exercise and then the review workshop, which led to invaluable technical feedback. This really helped us to finalize our report.

We wish also to put on record our gratitude to the data team, led by Kwadwo Danso-Manu, (Technical Specialist, UNFPA), who provided relevant data for analysis. We are also grateful to the entire UNFPA Census technical team, especially Aiah Sosokonneh, for their support.

The typing of the report was done by Mrs. Lucinda Walker, to whom we are immensely grateful. Last, but by no means least, we want to register our gratitude to Stephen O. Kwankye (Technical Editor, Regional Institute for Population Studies, University of Ghana, Legon) for his painstaking editing of this report. We are thankful to him for his patience, diligence and hard work.

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ABSTRACT

This report discusses the structure and distribution of the population of Sierra Leone based on the 2015 Population and Housing Census. The objective is to describe the current population structure in terms of various characteristics including age and sex, religion and ethnicity. The report also explains the nature of distribution of the population in terms of administrative units: regions, districts and chiefdoms.

Analytical methods such as percentage distributions were used in addition to specific conventional data evaluation and adjustment techniques. These included: the Whipple's and Myer's Indices, Sex Ratio, and the Age/Sex Accuracy Index.

The findings include the fact that age reporting is poor, nationwide, and that there is a high dependency burden throughout the nation. Populations across the country have been growing, and in some cases, rather rapidly. This has contributed to reducing the doubling time for the populations at different geographical levels.

Specific recommendations include developing strategies to improve the quality of age reporting and intensifying programmes on the use of contraceptives and family planning services to regulate population growth.

EXECUTIVE SUMMARY

The 2015 National Population and Housing Census was the fifth in a row of scientific censuses to be carried out in Sierra Leone, since the census of 1963. This latest census had been planned for 2014 but was delayed by the outbreak of the Ebola disease, which killed about 3,500 persons nationwide.

The outbreak made it impossible for Statistics Sierra Leone to conduct the census in December 2014 as planned, but preparations were already well underway, including cartographic work. This meant the census was ready to be conducted in 2015, once the country had been declared clear of the disease, making the interval between censuses eleven years. This was however consistent with the intervals between previous censuses of 1963 and 1974 and 1974 and 1985.

The objective of this report is to describe the population composition and distribution of the national population, as reported by the 2015 Census. Specific objectives include the assessment of the quality of age-reporting in the population and an analysis of specific population groups, such as the youth population and the population of women of reproductive age.

THE NATIONAL POPULATION IS ESTIMATED TO DOUBLE IN 21 YEARS, REACHING ABOUT 14 MILLION.

3.2% population growth rate

24.3% of the nationale population are adolescents (10-19 years)

This report uses a variety of methods including percentage distributions at the univariate and bivariate levels. Other specific methods used include age data evaluation techniques for both single and -year age data. Specific techniques for assessing the quality of reporting age in single years included the Whipple's and Myer's indices which capture inaccuracies of age heaping on some digits and avoidance on other digits. In evaluating the five-year age data, the age/sex ratios and the Age/Sex Accuracy indices were used to determine the degree of age shifting.

The analysis of the 2015 Census with respect to population structure and distribution produced important results. The population growth rate reached an all-time high of 3.2 per cent per annum with a doubling time of about two decades. This could have important socio-economic implications for the country.

Although there is an increase in the absolute population of over two million persons, the distribution by region shows slight changes when compared to the 2004 Census results. With respect to the chiefdoms, the most affected were those in which new local councils were created. The contribution of these chiefdoms to the total populations of the districts was thus reduced. Typical examples were Bo and Makeni cities.

The distribution of the population by wards reveals varying positive or negative changes between 2004 and 2015. The results of the data evaluation reveal marked incidence of errors in age reporting, regardless of the index used. The issue of age misreporting has been a perennial problem attributed to little or no knowledge of respondents about their ages. Typical problems include age heaping, preference and avoidance, resulting in distortions in the data. An attempt at smoothing the data resulted in a consistent reduction in the population size with age, as expected.

Like ethnicity, the religious composition of the population had not been analysed prior to 2015. The 2015 Census results suggest that there are two major ethnic groups: the Mende and Temne. Ethnic groups are hardly diffused outside their areas of origin. Quite clearly the two dominant religions in Sierra Leone are Islam and Christianity.

Three key population subgroups made up of adolescent, youth and women of reproductive age 15-49 years are examined in terms of their population sizes and distribution nationwide. Knowledge of the magnitude of these groups is useful for effective programmatic planning. Adolescent (10-19 years) make up 24.3 per cent of the national population, while youth (15-35 years) account for 39.4 per cent.

Historically, the dependency burden of the population has been high. The 2015 Census results were no different. Levels of dependency range from 54.6 per cent in the urban area of the Western Area to 95.3 per cent in Kambia District. The national estimate was 79.5 per cent. These imply a considerable burden on the economically active population.

Although there are indications of a reduction in fertility, there is also a reservoir of young persons who have the potential to increase the level of fertility. The size of the working population has hardly grown for the country to benefit or take advantage of the demographic dividend and it is likely that the country has still not reached a critical threshold to benefit from it. To reap these benefits, considerable investments should be made towards reducing the total fertility rate, in addition to improving the status of young persons in terms of their education, training and expertise.

Finally, the various analyses reveal important policy implications regarding population management and accurate data collection. Population management is necessary to reduce the size of the young population 0-14 years which contributes significantly to the high dependency burden across the entire country.

The availability and use of accurate data are important for reliable projections of the population and for development purposes. Based on the findings of this report, some recommendations have been made. Firstly, due to the rapid rate of population growth at the national level it would be important to work towards reducing the growth of the population, which would in turn address the potential socio-economic problems.

Secondly, the current vital registration system with its problems of coverage, lack of awareness and low levels of registration should be improved as a long-term strategy to improve age reporting nationwide.

Thirdly, the results dealing with the youth, adolescents and pregnant women have revealed that their contributions to the national population are significant. Consequently, deliberate efforts should be made by Government to address their different needs. These include better provision of education and training skills for the youth to improve their expertise and help them become more productive in society and quality, accessible and affordable services and facilities for adolescents and women in their reproductive ages, geared towards reducing the current high maternal mortality and morbidity rates. Addressing these needs would be beneficial to the entire country both socially and economically.

CHAPTER 1: INTRODUCTION

1.1 Background

Historically, population distribution and the structure of the population have been major outcomes of census analyses in Sierra Leone. In the 1974 and 2004 Censuses, for example, both subjects constituted separate volumes of the census reports. In the 1985 Census report, they constituted a single chapter.

Over the years, census reports on population structure and distribution have analysed similar topics such as population distribution by administrative regions and evaluation of age and sex data (Sierra Leone Government, 1965; Thomas and Ramachandan, 1995; Okoye, 1979; Thomas, Buck and Bangura 2006). To a large extent, the methods of analyses have been similar. For example, methods of evaluating age data have used conventional methods of evaluation such as Whipple's and Myer's indices, age and sex ratios and the age–sex accuracy index which makes use of the age ratio score and the sex ratio score.

In addition, Okoye (1979, pp. 43-51) used methods of graduation, smoothing and interpolation of the single- year age data. One of the key findings of all these analyses has been the inaccurate reporting of age, which justified the use of various methods of evaluation and adjustment in some cases. A typical example of age misreporting in these findings is digit preference, especially for digits '0' and '5', and digit avoidance for other digits, including digits '1' '4' and '9'.

1.2 Sources of data

The primary source of data for this report was the 2015 Population and Housing Census. Relevant data were obtained from two sections of the questionnaire:

i. **Geographical identification:** This section covered the administrative units of the country. Enumerators were required to enter codes for regions, districts, chiefdoms/wards and sections. The latter was the lowest administrative unit.

ii. **Population characteristics:** This section was intended to capture background features of all persons who slept in the household on census night, irrespective of age or sex.

One of the key questions in section two was age of the respondent. The question asked was: "How old is x?". Several guidelines were provided in the Enumerators' Manual on how to address this question which was consider as one of the most important questions in the questionnaire (Statistics Sierra Leone 2015 pp 16-19). As an alternative to this question, enumerators were required to ask for the year of birth. Age was then calculated in complete years as of age at last birthday. The Enumerators' Manual contained a warning: "Many people will not know their age". This gave rise to the use of the historical calendar/events calendar to improve the recording of age.

Section two of the Enumerators' Manual also contained a question on sex. The question asked was: "Is this person male or female?". Enumerators were cautioned not to rely on names to determine the sex because some names are shared by both sexes.

Questions were also asked on religion and ethnicity in section two of the Enumerators' Manual.

1.3 Rationale and objectives

The analyses of the population structure and composition provided an opportunity to planners to understand and possibly use the data on the spatial spread of the population. At the same time, the analyses broaden their understanding of the demographic composition of the population at the aggregate level. It offers planners appropriate data for effective planning at the national, regional, district and chiefdom levels. Available data based on this chapter can also support related research activities. The data can also be used for designing appropriate samples sizes.

The specific objectives are to:

01 Outline trends in the population of Sierra Leone using past census results.

02 Describe the distribution of the population based on various administrative units of the country.

03 Evaluate the nature of age data obtained from the enumeration process of the census.

04 Attempt an adjustment of the age data as a means of correcting possible inaccuracies in them.

05 Describe the composition of the population Sierra Leone.

In addition to using primary data, this report used secondary sources of data. These were mostly reports of past censuses on population distribution and structure.

1.4 Methodology

Relevant statistical tables containing appropriate variables for analysis were provided by Statistics Sierra Leone. A major method of analysis was the use of cross tabulations of variables. Percentages provided estimates of the magnitude of categories of the variables used.

Apart from percentages, specific conventional indirect methods were used in the effort to evaluate the level of accuracy of age data provided by respondents. Typical examples of such methods included Whipple's Index which was used to assess the level of digit preference for digits '0' and '5'. Previous censuses show they are conventional and popular digits of preference in Sierra Leone.

The Myer's Index was also used, as it provided a great opportunity to assess the degree of preference or avoidance for all ten digits '0' – '9' including digits '0'and '5'. This made the Myer's Index more robust than the Whipple's Index.

In order to assess the degree of age shifting from one age group to another, age ratios were calculated. Generally, if ages were correctly reported then the standard of an age ratio should be 100. However, if there were movements into a given age group the results would be greater or less than 100, for age groups from which there was shifting. Another method used for evaluating the age data was the United Nation age/sex accuracy index.

Finally, in order to correct some of the errors of misreporting in age data, it was necessary to carry out smoothing or a graduation exercise to 'remove' some of the errors. For this exercise, the spreadsheet 'AGESMTH', developed by the United States Bureau of the Census, was used. This spreadsheet smooths the age distribution of a population using five different smoothing methods: Carrier Farrag; Karup-King; Newton, Arriaga; United Nation and a strong Moving Average. The smoothing is done separately for each sex (Arriaga 1994 pp. 63-72). Data requirements for the application of the method are the male and female population distribution by five-year age groups and sex.

1.5 Structure of report

The report comprises seven chapters.

- Chapter One discusses the background, justification, and objectives of the report.
- Chapter Two looks at the trend in population growth in Sierra Leone by comparing results of past censuses with those of the 2015 Census.
- Chapter Three analyses population distribution in different regions and districts and chiefdoms nationwide.
- Chapter Four discusses issues of evaluation of age data using some conventional techniques of data evaluation.
- Chapter Five describes the composition of the population using various sub-populations.
- Chapter Six examines issues relating to data adjustment using some conventional techniques.
- Chapter Seven discusses the results, conclusion, policy implications and recommendations.

CHAPTER 2: POPULATION TRENDS IN SIERRA LEONE

2.1 Introduction

Censuses in Sierra Leone date as far back as 1802. Five such censuses are reported to have been conducted in fairly regular ten-year intervals between 1901 and 1948. However, an assessment of the quality of these censuses revealed differing methods and scope, often based on some kind of 'sample enumeration' (Sierra Leone Government, 1965, p. i). This spoke volumes of their poor scientific quality.

An actual scientific census started in 1963 and was followed in 1974, 1985, 2004 and 2015. These censuses are considered as scientific because of their technical nature. They have all included complete coverage and have collected enormous social, economic and demographic data at regular intervals. The long interval between 1985 and 2004 was due to the Civil War.

2.2 Type of enumeration

The 2015 Census, like the other scientific censuses from 1963 onwards, was a de facto census. These censuses were all engaged in a count of all persons present in households as of the census night or the reference period.

2.3 Total population 2015

The total population in 2015 consisted of (a) population enumerated in households and (b) population enumerated in institutions. The total population of 7,092,113 comprised of 99.8 per cent of the population enumerated in households and 0.2 per cent enumerated in institutions. The comparative figures from the 2004 Census were 99.1 per cent and 0.9 per cent respectively, suggesting that a relatively smaller proportion of the population was enumerated in institutions during the 2015 Census.

2.4 Population change since 1963

The size of the population of Sierra Leone has steadily increased since the first technical census of 1963 (Figure 2.1).

Figure 2.1 reveals steeper curve after 1985. The change in population has been in a linear fashion

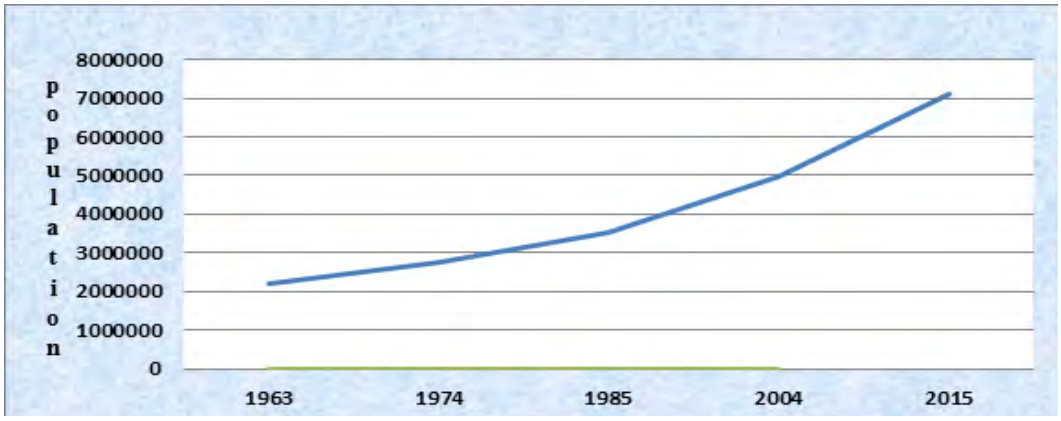


Table 2.1: Indicators of change in population in the intercensal years in Sierra Leone, 1963-2015

Intercensal Period	Percentage Change	Annual Change
1963-1974	25.4	2.1
1974-1985	28.5	2.3
1985-2004	41.6	1.8
2004-2015	42.5	3.2
1963-2015	225.3	2.3

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Table 2.1 reveals very high percentage increases in 1985-2004 and 2004-2015 intercensal years. The lowest percentage change was recorded between 1963 and 1974. The population of Sierra Leone at the regional and district levels has grown at different rates since 1963. These rates are presented in Table 2.2.

The national growth rate reached its peak of 3.2 per cent per annum during the intercensal period 2004-2015, almost doubling the 1985-2004 growth rate of 1.8 per cent. At the regional level, population growth has been fastest in the Western Area comprising of the rural and urban areas. The capital city Freetown represents the bulk of the urban area and is a hub of migration, attracting migrants from other regions of the country. This has contributed significantly to the rapid population growth in this region, compared to the other regions.

The slowest growing region in population during the 2004-2015 intercensal period is the Southern Region which grew at 2.5 per cent annually.

Table 2.2: Intercensal population growth rate by region and district, 1963-2015

Region	2015	1963-1974	1974-1985	1985-2004	2004-2015	Doubling Time
Sierra Leone	7,092,113	2.1	2.3	1.8	3.2	21.0
Eastern	1642370	3.2	1.9	1.1	2.9	23.9
Northern	2508201	1.4	1.7	1.7	3.3	21.0
Southern	1441308	0.9	2.0	2.0	2.5	27.7
Western	1500234	4.4	5.1	2.8	4.2	16.5

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Table 2.2: Intercensal population growth rate by region and district, 1963-2015 (continued)

District	2015	1963-1974	1974-1985	1985-2004	2004-2015	Doubling Time
Kailahun	526,379	1.7	2.4	2.2	3.5	19.8
Kenema	609,891	1.4	2.1	2.1	1.8	38.5
Kono	506,100	6.1	1.5	-0.8	3.7	18.7
Bombali	606,544	1.5	2.8	1.3	3.6	19.2
Kambia	345,474	1.1	1.6	2.0	2.2	31.5
Koinadugu	409,372	1.9	1.3	2.0	3.9	17.8
Port Loko	615,376	1.5	1.1	1.7	2.8	24.7
Tonkolili	531,435	1.0	1.5	1.9	3.9	17.8
Bo	575,478	0.3	1.9	2.9	2.0	34.6
Bonthe	200,781	0.8	1.7	1.5	3.3	21.0
Moyamba	318,588	1.1	2.6	0.2	1.8	38.5
Pujehun	346,461	1.7	1.2	3.5	3.8	18.2
Western Area Rural	444,270	4.7	6.8	3.8	8.5	8.0
Western Area Urban	1,055,964	7.0	4.8	2.6	2.8	24.7

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Regarding the rate of population growth at the district levels, seven of the 14 districts grew at higher than 3.0 per cent per annum in the 2004-2015 intercensal period. These included the Western Rural Area (8.5 per cent), Koinadugu (3.9 per cent), Tonkolili (3.9 per cent), Pujehun (3.8 per cent) and Kono (3.7 per cent).

The population growth in the Western Rural Area is probably due to large scale migration from the other regions during and after the eleven-year war. This growth is currently evidenced by large scale destruction of forests for settlement purposes. Only four districts grew between two and three per cent per annum and two other districts recorded between one and two per cent per annum in the 2004-2015 period.

A composite index of population growth generated from 1963-2015 (a period of 52 years) suggests that the national growth rate was 2.2 per cent per annum; one percentage point less than the 3.2 per cent recorded for 2004-2015.

2.4.1 Doubling time

Table 2.2 also has information on the doubling time of the population by region and district. The concept of doubling time is associated with population dynamics. Essentially, it is how long (in years) it takes a population to double its size at a current growth rate. Generally, the higher the rate of growth of the population, the faster the doubling time.

Based on the current population growth rates for the 2004-2015 period, the national population is estimated to double in 21 years, reaching about 14 million. This is against the back-drop that it took Sierra Leone 52 years for the population to increase from 2.2 million in 1963 to 7.1 million in 2015. In terms of regions, the fastest growing region is the Western Region with a population that is expected to double in 16.5 years. This contrasts with the Southern Region whose population is estimated to double in almost 28 years.

With respect to the districts, the fastest growing district is the Western Rural whose population is expected to double in eight years, more than four times faster than Moyamba District and Kenema District whose populations are expected to double in 38.5 years.

2.5 Population density

This analysis examines the concentration of population over the fixed land area of the country. The expectation is that with an increase in population the density will increase, as seen in Table 2.3.

Table 2.3: Population density in Sierra Leone by region

Region	Density person /Sq/Km		
	1985	2004	2015
Sierra Leone	48.2	68.2	97.2
Eastern	61.0	75.7	104.3
Northern	34.8	48.2	69.3
Southern	36.5	53.9	71.0
Western	796.0	1,360.2	2,154.6

Source: Statistics Sierra Leone, 2015 Population and Housing Census

All regions have experienced a consistent increase in population density since 1985. The Western Region appears to be the most affected. The increase in population density was 58 per cent between 2004 and 2015 - the highest of all the regions.

CHAPTER 3: POPULATION DISTRIBUTION

3.1 Introduction

Data on the population distribution across geographic boundaries are important for several reasons. They provide baseline data for projection, and estimates for local areas. Typically, in Sierra Leone such data are useful for demarcating political constituencies for electoral purposes. The population contribution based on the 2015 Census is currently being used to delimit constituency boundaries for the 2018 general elections. This analysis looks at the distribution of population across various geographic units from the regions to the chiefdoms.

3.2 Regional population distribution

There are four regions in Sierra Leone: Eastern, Northern, Southern and Western Area. The first three regions are in the provincial areas. The regions are sub divided into a total of 14 districts, three in the Eastern, and five in the Northern, four in the Southern and two in the Western Area. Twelve of the fourteen districts are divided into 149 chiefdoms. The Western Area District is divided into the Western Rural with four administrative wards and the Western Urban with eight wards. (In the provincial areas, these administrative divisions are known as chiefdoms, but in the Western Area, they are known as wards).

The distribution of population into these geographic units for 2015 compared to 2004 is shown in Table 3.1.

Table 3.1: Percentage distribution of total population by region 2004 and 2015

Region	2004	2015	% Change 2004-2015
Sierra Leone	23.9	23.2	-0.7
Eastern	35.1	35.4	+0.3
Northern	22.0	20.3	-1.7
Southern	19.0	21.1	+2.5
Western	100.0	100	
Total All Regions	4,976,871	7,092,113	

Source: Statistics Sierra Leone, 2015 Population and Housing Census

There has not been significant change in the percentage share of the total national population in each region over the period. The Western Area, has experienced the biggest change, with a 2.5 per cent increase, compared to the Southern Region which recorded a 1.7 per cent decrease.

3.3 Population distribution at the district level

This section of the report examines the distribution of the population in 2015, by districts. The results of the analysis are compared to the situation in 2004 (Table 3.2).

Table 3.2: Percentage distribution of total population by district 2004 and 2015 Census

District	2004	2015	% Change 2004 – 2015
Kailahun	7.2	7.4	+0.2
Kenema	10.0	8.6	-1.4
Kono	6.8	7.1	+0.3
Bombali	8.2	8.6	+0.4
Kambia	5.4	4.9	- 0.5
Koinadugu	5.3	5.8	+0.5
Port Loko	9.1	8.7	- 0.4
Tonkolili	7.0	7.5	+0.5
Bo	9.3	8.1	-1.2
Bonthe	2.8	2.8	0.0
Moyamba	5.3	4.5	-0.8
Pujehun	4.6	4.8	+0.2
Western Area Rural	3.5	6.3	+2.8
Western Area Urban	15.5	14.9	-0.6
All Districts	100.0	100.0	
Total Population	4,976,871	7,092,113	

Source: Statistics Sierra Leone, 2015 Population and Housing Census

The data suggest that 50.0 per cent of all districts have experienced positive increases in their share of the national population; although with varying degrees. The largest increase occurred in the Western Area Rural which had a 2.8 per cent increase. The smallest increase was reported in Pujehun and Kailahun, of 0.2 per cent.

In another six of the districts, their respective shares of the national population decreased during the 2004 -2015 intercensal period. The biggest decrease was reported in Kenema with a difference of 1.4 per cent.

Bonthe District's share remained the same in the two census years and its share of the country's population is also the lowest. Apart from the fact that Bonthe District is one of the smallest districts in the county, it is also economically poor, accessible only by sea, with little or no social amenities. Although it used to be an active trading and administrative district, it has become moribund over the years.

3.4 Population distribution at the chiefdom level

This section of the report examines the share of the chiefdoms of the population of their respective districts. The analysis compares the proportion of the population of each chiefdom of its district's total population during the intercensal period 2004- 2015 to determine changes that have occurred between the two censuses. The results of the analysis are presented in Table 3.3 a-c. The table also shows the proportion of each chiefdom's population relative to the total population of Sierra Leone.

At the regional level, the Eastern Region had the highest proportion of the school-going population (47.0 per cent), while the Western Region registered the lowest proportion (44.9 per cent) of the school-going population (Table 2.2). Variations by place of residence indicate that the proportion of primary school-going age persons in the rural areas was 19.0 per cent compared to 15.2 per cent in the urban setting. Analysis of school-going population by sex reveals that there were no significant sex differentials across the various age groups.

Table 3.3a: Distribution of the total population of districts by chiefdom in the Eastern Region

KAILAHUN		
	% of District Total	
Chiedom	2004	2015
Dea	2.8	2.5
Jawie	11.9	9.7
Kissi Kama	3.6	3.9
Kiss Teng	8.5	8.6
Kissi Tongi	9.3	9.7
Kpeje Bongre	3.5	4.8
Kpeje West	3.6	5.2
Luawa	18.3	15.4
Malema	6.5	7.0
Mandu	5.5	5.9
Njaluahun	10.5	11.6
Penguia	3.5	5.0
Upper Bambara	7.9	5.1
Yawei	4.5	5.6
Total %	100	100
Total	35,819	526,379

KENEMA		
	% of District Total	
Chiedom	2004	2015
Dama	5.3	5.0
Dodo	2.9	3.7
Gaura	3.5	3.0
Gorama Mende	6.5	7.1
Kandu Lekpeama	4.4	3.0
Koya	2	2.2
Langrama	0.9	0.6
Lower Bambara	15.7	12.5
Malegohun	2.5	3.4
Niawa	1.7	1.3
Nomo	0.8	0.9
Nongowa	36.1	7.5
Simbaru	3.7	2.9
Small Bo	6.3	4.8
Tunkia	4.3	5.9
Wandor	3.5	3.3
Kenema City		32.9
Total %	100	100
Total	497,948	609,891

KONO		
	% of District Total	
Chiedom	2004	2015
Fiama	2.7	3.1
Gbane	4.4	4.8
Ghane Kandor	1.2	2.4
Gbense	21.4	3.1
Gorama Kono	3.5	3.6
Kamara	3.7	3.8
Lei	4.9	5.3
Mafindor	2.0	2.7
Nimikoro	13.2	12.1
Nimiyama	7.8	5.6
Sandor	14.9	17.8
Soa	6.3	7.8
Tankoro	13.1	1.7
Toli	0.8	1
Koidu/New		25.3
Total %	100	100
Total	335,401	506,100

Source: Statistics Sierra Leone, 2015 Population and Housing Census

In Kailahun District, Luawa Chiefdom has the largest share of the district's total population, although it recorded a drop of 2.9 per cent between 2004 and 2015. In contrast, Dea Chiefdom is the smallest chiefdom in the district in terms of population size in both years.

In 2015 in Kenema District, Kenema City accounted for one-third of the district's population. Like all administrative headquarters in the three provincial regions, the municipal centres were created as part of the decentralization process. Apart from Kenema City, Lower Bambara Chiefdom is the second largest in both census years, although its share of the district's population dropped by 3.2 per cent from 15.7 per cent in 2004 to 12.5 per cent in 2015.

In 2004, Nongowa Chiefdom was the largest in the Kenema District and represented 36.1 per cent of the population of the district. In 2015, Kenema City was created and had 32.9 per cent of the district's population. Because of this, Nongowa Chiefdom's proportion of the district's population reduced to 7.5 per cent in 2015.

With respect to Kono District, Gbense chiefdom had 21.4 per cent of its district's total population in 2004 but suffered a reduction to 3.1 per cent in 2015 for the same reason as was the case in Kenema District. A similar development occurred in Tankoro, which represented 13.1 per cent of the district's population in 2004, but lost 11.4 per cent of its population by 2015, recording only 1.7 per cent of the total population of its district.

Table 3.3b: Distribution of the total population of districts by chiefdom in the Northern Region

BOMBALI		
	% of District Total	
Chiedom	2004	2015
Briwa	6.9	7.8
Bombali Sebora	25.9	6.0
Gbanti-Kamaranka	6.4	4.7
Gbendembu Ngowahun	7.3	6.4
Libeisaygahun	3.3	2.7
Magbinba Ndorhahun	2.1	2.1
Makari Gbanti	10.1	13.4
Paki masabong	4.2	3.3
Safroko limba	5.2	5.2
Sando loko	6.8	7.4
Sabda Tendaren	46.0	4.3
Sella limba	12.9	9.6
Tambakka	4.3	6.3
Makeni City		20.81
Total %		
Total Population		

KAMBIA		
	% of District Total	
Chiedom	2004	2015
Bramaia	9.4	10.6
Gbinle-dixing	7.2	6.8
Magbema	24.9	26.7
Mambolo	12.5	11.0
Masungbala	10.5	9.2
Samu	2.1	18.8
Tonko Limba	14.5	17.0
Total %	100	100
Total Population	270,462	345,474

KOINADUGU		
	% of District Total	
Chiedom	2004	2015
Dembelia Sinknia	5.2	5.2
Diang	7.4	7.1
Follosaba Dembelia	5.5	5.1
Kasunko	7.7	6.1
Mongo	11.0	11.7
Neya	12.6	10.4
Niene	14.7	19.1
Sengbe	8.5	9.3
Sulima	7.5	8.7
Wara Bafodia	9.7	8.5
Wara Yagala	10.2	8.8
Total %	100	100
Total Population	65,758	409,372

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Table 3.3b: Distribution of the total population of districts by chiefdom in the Northern Region (continued)

PORT LOKO		
	% of District Total	
Chiedom	2004	2015
BKM	7.1	6.5
Buya Romende	6.1	5.6
Bibia	3.3	2.5
Kaffu Bullom	15.3	19.6
Koya	14	13.8
Lokomasama	15.9	12.7
Maforko	15.0	14.1
Marampa	8.0	9.6
Masimera	7.2	6.6
Sanda Magbo-lotor	3.3	3.9
TMS	4.6	5.0
Total %	100	100
Total population	453,746	615,376

TONKOLILI		
	% of District Total	
Chiedom	2004	2015
Gbonkolenken	13.8	12.7
Kafe simira	5.7	6.9
Kalansogola	4.7	6.7
Kohilifa mabang	3.6	3.1
Kolifa rowalla	13.7	12.4
Kunike Brina	3.9	4.8
Knike Sanda	12.4	14.0
Malai mara	4.0	5.8
Sambaya	6.5	6.0
Tane	6.4	6.3
Yoni	25.2	21.2
Total %	100	100
Total Population	347,197	531,435

Source: Statistics Sierra Leone, 2015 Population and Housing Census

In Bombali, although Bombali Sebora was the largest chiefdom in 2004, the creation of Makeni City in the same chiefdom (as was the case in Kenema) reduced the chiefdom's population to just 6.0 per cent in 2015, making Makeni City the biggest chiefdom in the district in 2015.

In Kambia District, Magbema remains the most populous chiefdom in the district, with its population increasing from 24.9 per cent to 26.7 per cent between 2004 and 2015.

The situation in Koinadugu District is like that of Kambia District in which Nieni Chiefdom has maintained its position as the most populous chiefdom in the district. Its proportion of the district's total population increased from 14.7 per cent in 2004 to 19.1 per cent in 2015.

Lokomasama Chiefdom was the largest in Port Loko District in 2004 and represented 15.9 per cent of Port Loko's population but was overtaken by Kaffu Bullom in 2015 with a population 1.2 times greater than Lokomasama.

On the other hand, Yoni Chiefdom recorded the highest proportion of the population in Tonkolili District in both census years. However, its proportionate share of the population declined from 25.2 per cent to 21.2 per cent between 2004 and 2015.

Table 3.3c: Distribution of the total population of districts by chiefdom in the Southern Region

BONTHE		
	% of District Total	
Chiedom	2004	2015
Bendu Cha	3.4	3.6
Bum	13.5	12.1
Dama	3.8	3.7
Imperi	12.6	16.6
Jong	20.4	16.8
Kpanga Kemo	5.5	5.2
Kwamebai Krim	5.5	7.1
Nogoba Bullom	9.7	10
Sitti	9.6	10.6
Sogbini	5.6	5.4
Yawbeko	3.4	3.8
Bonthe Municipal	7	5
Total %	100	100
Total Population	139,687	200,781

MOYAMBA		
	% of District Total	
Chiedom	2004	2015
Bagruwa	7.3	8.7
Bumpeh	12.4	11.8
Dasse	4.2	4.1
Fakunya	8.6	8.7
Kagboro	11.9	10.9
Kaiyamba	8.3	8.1
Kamajei	3.3	3.2
Kongbora	4.3	3.2
Kori	11.1	9.6
Kowa	2.7	3.1
Lower Banta	9.9	11.7
Ribbi	9.6	10.4
Timdale	3.1	3.2
Upper Banta	3.2	3.3
Total %	100	100
Total Population	260,910	318,588

PUJEHUN		
	% of District Total	
Chiedom	2004	2015
Barri	14.1	10.7
Gallinas Peri	11.9	15.8
Kpaka	5.6	4.8
Kpanga kabonde	14.6	14.2
Makpele	9.6	9
Melen	9.7	14.2
Mano sakrim	3.3	3.7
Panga krim	2.9	2.6
Pejeh	4.5	3.9
Soro Gbe-ma	14	12.2
Sowa	6.7	4.9
YKK	3.1	4
Total %	100	100
Total Population	228,392	346,461

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Table 3.3c: Distribution of the total population of districts by chiefdom in the Southern Region (continued)

	BO	
	% of District Total	
Chiedom	2004	2015
Badjia	17	1.4
Bagbo	54	4.5
Bagbwe	24	3.6
Baoma	110	8.0
Bumpe Ngawa	77	7.7
Gbo	11	0.9
Jaima Bongor	56	5.4
Kakua	388	8.9
Komboya	34	2.7
Lugbu	51	4.4
Niawa lenga	24	2.4
Selenga	12	1.6
Tikonko	85	9.2
Valunia	38	6.2
Wunde	21	2.7
Bo city		30.3
Total %	100	100
Total Population	463,668	575,478

Source: Statistics Sierra Leone, 2015 Population and Housing Census

In Bo District, in the Southern Region, the distribution of population by chiefdom indicates that Kakua Chiefdom in 2004 had almost 39 per cent of the district's total population. For similar reasons, as explained for Kenema and Bombali, the 2015 results noted that Bo City was home to 30.3 per cent of its district's population; leaving Kakua with less than 10 per cent of the district's population in 2015.

In the case of Bonthe District, Jong Chiefdom recorded the largest share of the district's population in 2004 and 2015 although there was a reduction of its share by a 3.6 per cent in 2015. With reference to Moyamba District, Bumpeh Chiefdom is recorded to have maintained its position as the most populous chiefdom in the district, registering a slight drop from 12.4 per cent to 11.8 per cent between 2004 and 2015.

Finally, in Pujehun District, Gallinas Peri Chiefdom increased its share of the district's population from 14.6 per cent in 2004 to 15.8 per cent in 2015 and overtook Kpanga Kabonde in population size in 2015.

3.5 Population distribution at the ward level

Administrative centres in the Western Area are known as wards. There are eight such wards in the Western Urban Area, compared to four in the Western Area Rural. The proportionate share of each of these wards of the respective total populations of the two districts are presented in Table 3.4.

Table 3.4: Population distribution by ward between 2004 and 2015

Western Area Rural		
Chiefdom Wards	% of District Total	
	2004	2015
Koya	13.2	15.9
Mountain	2.7	6.9
Waterloo	44.6	48.1
York Rural	36.5	29.2
Total	100	100
Total population	174,249	444,270

Western Area Urban		
Chiefdom Wards	% of District Total	
	2004	2015
Central 1	6.5	5.9
Central 2	2.6	2.0
East 1	7.1	5.8
East 2	10.3	8.5
East 3	40.9	42.5
West 1	6.0	5.1
West 2	11.8	12.3
West	14.7	17.9
Total	100	100
Total population	772,873	1,055,964

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Among the Western Area Rural wards, Waterloo continued to record the largest proportion of the population accounting for almost 45.0 per cent in 2004 and up to 48.1 per cent in 2015. Together with the York Rural Ward, they account for 77.3 per cent of the total population of the Western Area Rural District. This is a 4.0 per cent reduction from the 81.1 per cent they represented in 2004.

Among the Western Area Urban wards, East 3 has accounted for over 40 per cent of the population for each of the census years. In fact, it recorded a slight increase in its proportionate share of the district's population which was 40.9 per cent in 2004 to 42.5 percent in 2015. The current population of East 3 is greater than each of the following districts: Kambia, Koinadugu, Bonthe, Moyamba, Pujehun and the Western Area rural. This is an indication of the rapid rate of growth of this ward over the years. It grew by 42.0 per cent between 2004 and 2015. The population of East 3 in 2015 was 448,784, compared to Moyamba District with 318,588 or Bonthe District with a population of 200,781.The Eastern wards had the highest proportion that accounted for 56.8 per cent, compared to the Western wards with 35.3 per cent. The smallest wards are those in the Central Western Area Urban which represented 7.9 per cent.

CHAPTER 4: EVALUATION OF AGE DATA

4.1 Introduction

This chapter deals with the quality of age data collected during the census. It identifies the types of errors, assesses their magnitude and attempts an adjustment. The analysis looks at both the single and five-year age data. Age in the 2015 Census was measured as age at last birthday preceding the census.

Evaluation of data is an integral part of data analysis in demography. It enables researchers to identify errors and also assess the magnitude of these errors, which may either be coverage or content errors. Coverage errors may arise from either omission or duplication of individuals, households or structures. Geographic units such as enumeration areas may also be omitted. Content errors, on the other hand, deal with mistakes in the characteristics of the respondents. Content errors may result from incorrect reporting, misreporting or recording or from the inability of respondents to report.

In demography, emphases have been put on the evaluation and adjustment of age data for the following reasons: such data are required for cross tabulations with other variables, as many demographic phenomena tend to vary by age. For example, age-specific fertility and mortality rates are used to determine how child bearing and death vary by differences in age. Age is associated with other issues such as the working population or entry into the work force, the educational system and for many other administrative uses.

Therefore, the accuracy of the measurement of age is crucial. Van de Walle, (1968, p. 13) in explaining the poor quality of age data in Africa, noted: "All African demographic surveys share the problem of trying to record the ages of people who do not know their exact ages and are not fundamentally interested in knowing them."

4.2 Evaluation of single-year data

As noted earlier, data evaluation involves detecting errors and assessing the magnitude of such errors in the data. The objective is to assess the quality of data collected from the field with a view to adjusting or correcting the errors to render the data usable.

Many conventional methods have been identified to evaluate single year data. However, in this report, three such methods are used (a) Whipple's Index (b) Myer's Index and (c) the Bachi index.

The Whipple's Index measures the extent to which respondents reported their ages in digits ending with '0' or '5'. In the application of the Whipple's Index, the results of the evaluation would be 100 if there are no errors in the data. If all ages were reported only on digits '0' and '5' then the result shall be scored up to 500, as the maximum score.

The following provides an interpretation for the Whipple's Index when used to evaluate data:

<105: Highly accurate data
105- 109.0: Fairly accurate data
110-124.9: Approximate data
125-174.9: Rough
>=175: Very rough data

Myer's and the Bachi indices have a theoretical range of 0-90 ('0' if there is no error and '90' if all ages are reported in one digit). This has the advantage of indicating the degree of avoidance or preference for the individual digits '0' to '9'. The results for these three indices for Sierra Leone, the regions and the districts are presented in Table 4.1.

Table 4.1: Results of the Whipple's, Myer's and Bachi indices for Sierra Leone by sex, regions and districts

Region	Whipple's index for digits '0' and '5' together			Myers Index			Bachi Index		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Sierra Leone	240	255	248	47.2	52.4	49.9	30.0	33.0	31.6
Eastern	268	286	277	55.5	61.3	58.4	35.1	39.1	37.0
Kailahun	296	308	302	63.7	68.7	66.3	41.0	43.0	42.0
Kenema	264	277	271	53.0	57.5	55.3	34.7	37.4	36.0
Kono	260	278	269	54.3	58.9	26.6	33.4	37.5	35.4
Northern	263	278	271	63.2	60.3	57.2	34.6	37.5	36.1
Bombali	242	257	250	48.3	54.4	51.5	30.4	33.5	32.1
Kambia	282	291	287	60.2	65.7	63.2	38.5	40.0	39.3
Koinadugu	272	279	275	56.3	59.6	58.0	36.1	37.2	36.7
Port Loko	258	276	268	52.7	60.0	56.6	33.7	37.3	35.7
Tonkolili	277	296	287	58.3	64.9	61.8	36.9	40.0	39.0
Southern	256	269	263	51.3	56.8	54.2	33.4	43.0	34.7
Bo	239	253	246	48.7	51.2	48.5	29.8	32.9	31.4
Bonthe	272	277	275	56.7	60.6	58.7	36.1	37.6	36.9
Moyamba	257	275	266	52.7	59.6	56.3	33.0	36.7	35.0
Pujehun	278	286	283	57.8	61.5	59.8	37.5	39.1	38.4
Western Area	176	177	177	27.2	28.3	27.7	17.5	18.1	17.8
Urban	197	200	199	24.9*	34.9	34.1	21.4	22.5	21.6
Rural	168	168	168	24.9	25.7	25.3	16.0	16.6	16.3

Source: Statistics Sierra Leone, 2015 Population and Housing Census

The results of the Whipple's Index are high in all regions as well as at the national level. There is a major difference in the Western Area where the index is the lowest, indicating a lower incidence of age heaping on digits '0' and '5'.

A similar picture is portrayed by the Myer's Index with the highest value being in the Eastern Region. The index in the Western Area Region is twice as low than that of the Eastern Region, which suggests that age reporting in single years is more than twice as good in the Western Area Region as in the Eastern Region. Again, the results of the Bachi Index are highest in the Eastern Region and lowest in the Western Area Region.

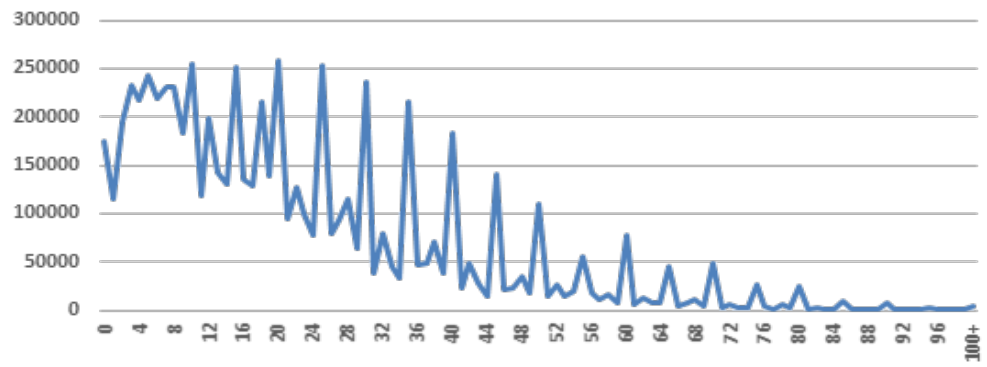
In conclusion, it appears that age reporting in single years is far better in the Western Area Region than in any of the other regions. A possible explanation is that the Western Area Region has had a long period of births and deaths registration, dating back to 1791, when the first settlers or ex-slaves arrived in Freetown. This vital registration system was a means of checking the growth of the settler population.

This system was not in existence in most of the other provincial regions until 1983, when an Act of Parliament (The Births and Deaths Act) made registration of births and deaths compulsory nation-wide. In addition, access to births and deaths registration centres is much easier in the Western Area Region than in other areas of the country. Consequently, there are greater chances of people in the Western Area Region knowing their correct ages, compared to people in the provincial regions.

The indices above reveal gender differences as well. Irrespective of the index applied, females have higher indices than males in the respective regions and at the national level. These results suggest that age reporting is poorer among females than males. This matches an evaluation of the single-year age data of the 1974 Census, which reported that females had slightly poorer results for the Whipple's Index than males (Okoye, 1979, p. 16).

The issue of preference for digits '0' and '5' becomes clearer when single-year ages are presented graphically as seen in Figure 4.1. Digits of preference are represented by the peaks and digits of avoidance are represented by the troughs.

Figure 4.1: Single year age distribution Sierra Leone 2015

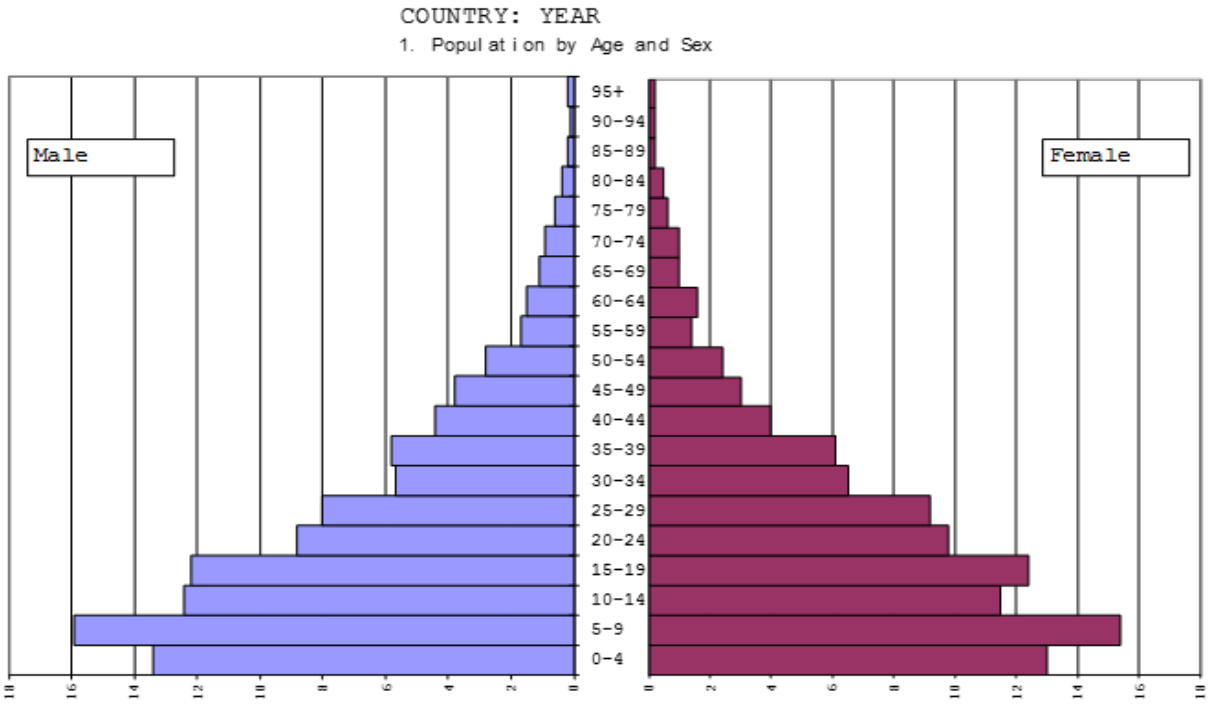


4.2.1 Digit preference and avoidance

As mentioned earlier, the Myer's and Bachi Indices have the added advantage of revealing digits which are preferred, and those which are avoided, for all 10 digits. The results, irrespective of the region, generally indicate that respondents prefer to report their ages on digits ending in '0' and/or '5'. A '0' is more preferred than '5' in all regions except the Western Area Region in which '5' (9.0 per cent is more preferred than '0' (8.3 per cent).

Appendices 1 a-d have information on the evaluation of the age data using these methods. The pattern of preference for digits '0' and '5' is replicated among the sexes. With respect to avoidance (based on the Myer's Index) the most avoided digit is '1' in the Western Area and all other regions, although the degree of avoidance of the digit varies by region.

Figure 4.2: Population pyramid of Sierra Leone by age and sex, 2015



4.3 Estimation of age/sex accuracy index reporting based on the five-year age data

The age/sex accuracy index was proposed by the United Nations in the early 1950s, following in-depth analysis of the problems of errors in reporting in a population. (Arriaga 1994).

Given that single-year ages reveal considerable heaping errors (as seen in Figure 1.1), ages are grouped in five years to minimize the errors. Accordingly, indices have been developed to estimate the level of age reporting in five-year age groups.

The age accuracy index is one such index. It is a composite measure which utilizes the age ratio for both sexes, as well as the sex ratio, to arrive at an estimate of the level of accuracy in reporting ages in five-year age groups.

Levels of the age/sex accuracy index ranges from less than 20 to above 40. A result less than 20 reveals an accurate data; 20-40 reflects an inaccurate data; while more than 40 reflects highly inaccurate data. The results of the application of the age/sex accuracy index for Sierra Leone, the regions and districts are presented in Table 4.3.

Table 4.2: Age/Sex accuracy index for Sierra Leone by regions and districts and districts

Region	Age ratio score		Sex ratio score	Age/sex accuracy index
	Male	Female		
Sierra Leone	13.1	16.9	24.9	54.9
Eastern	15.7	20.5	14.1	78.5
Kailahun	17.6	23.2	13.4	81.0
Kenema	15.0	19.1	12.3	71.0
Kono	5.3	19.4	17.5	87.2
Northern	15.3	18.1	8.4	58.5
Bombali	13.0	15.6	7.5	51.2
Kambia	16.3	19.7	9.9	65.6
Koinadugu	17.2	19.9	9.9	66.6
Port Loko	14.1	16.5	8.6	56.5
Tonkolili	17.4	21.2	10.2	69.2
Southern	14.1	18.3	9.7	61.6
Bo	13.1	16.7	9.4	58.0
Bonthe	14.6	19.1	9.9	63.3
Moyamba	13.2	16.6	10.5	61.2
Pujehun	16.9	23.0	12.0	76.0
Western Area	7.7	10.2	6.7	37.9
Urban	7.6	12.1	8.4	44.8
Rural	8.0	9.5	6.8	37.8

Source: Statistics Sierra Leone, 2015 Population and Housing Census

The level of accuracy in reporting ages in five years nationally is 54.9, which is 14.9 points higher than the maximum of 40 recommended by the United Nations. Consequently, the data can be considered as highly inaccurate.

Situations in the regions and districts the worst, although the results for the Western Region appear to be relatively better. As suggested earlier, this may be associated with the increased registering of births and deaths in the Western Region.

CHAPTER 5: POPULATION COMPOSITION

5.1 Sex composition

5.1.1 Introduction

Sex is an important demographic and analytic variable. Analyses by sex are crucial for the following reasons:

a) Sex can be cross-tabulated with other variables to provide more in-depth information of the relationship between the variables.
b) Tabulation by sex serves as a tool for evaluation of the quality of data, especially in conjunction with age.
c) For planning purposes, data are disaggregated by sex since various services are provided based on the sex composition of the population.

Accordingly, the 2015 Census questionnaire captured data on sex as a variable, as one of the population characteristics.

5.1.2 Sex ratio

The sex ratio at birth is based on those who were less than one-year-old at the time of the census. Sex ratio is an important measure of the sex composition of a population. Essentially, it is the number of males for every 100 females.

The analysis of sex ratio at the national level indicates a sex ratio at birth of 101, implying that there is an almost equal distribution of the sexes, with a few more males than females. Historically, in Sierra Leone, census data have revealed more females at the national level. For example, the overall sex ratios for 1963, 1974 and 2004 were 98.4, 98.8 and 94.0 respectively.

The sex ratio based on the 2015 Census data was not considerably different from the results from the previous censuses (Table 5.1).

Table 5.1: Sex ratio for Sierra Leone by region and district, 2004 and 2015

Region	Sex Ratio 2004	Sex Ratio 2015	Absolute Change
Sierra Leone	94.0	96.9	+2.9
Eastern	101	98.4	-2.9
Kailahun	94	98.0	+4.0
Kenema	102	97.5	-4.5
Kono	106	99.8	-6.2
Northern	88	95.4	+7.4
Bombali	93	98.7	+5.7
Kambia	90	92.0	+2.0
Koinadugu	88	99.8	+11.8
Port Loko	88	92.1	+4.1
Tonkolili	87	98.1	+11.1
Southern	94	95.0	+1.0
Bo	96	99.1	+3.1
Bonthe	92	99.3	+7.3
Moyamba	90	98.7	+8.7
Pujehun	93	95.1	+2.1
Western Area	97	99.9	+2.9
Urban	96	99.1	+3.1
Rural	92	99.3	+7.3

The 2015 data reveal a dominance of women in the population at both the regional and district levels. The only variation is the Western Area Urban population, where there appears to be a balance between the number of males and females, reflected by a sex ratio of 100.1.

Most of the regions and districts have recorded an increase in their respective sex ratios. Typical examples are Koinadugu District (11.8) and Tonkolili District (11.1). These increases may be associated with internal migration, which is selective of males. For Tonkolili, the increase could have resulted from greater employment opportunities provided by industries established in the district. In the Kenema and Kono districts the male population decreased in the intercensal period, resulting in a reduction in the corresponding sex ratios. This may be attributed to the decline in diamond mining in the two districts.

Source: Statistics Sierra Leone, 2015 Population and Housing Census

5.2 Ethnic composition

Ethnic composition is one social characteristic that has barely been analysed in past censuses, possibly for fear of raising issues about tribalism which may be inimical to national development.

In Sierra Leone, ethnic groups are associated with specific geographic regions. For example, Temnes and Limbas are mostly located in the Northern Region. One objective of this analysis, apart from revealing the size of each ethnic group, is to assess the extent of diffusion of ethnic groups outside their traditional geographic settings.

Sierra Leone is a multi-ethnic community. A total of 15 ethnic groups were enumerated during the 2015 Census. However, the two dominant ethnic groups were the Mende (31.9 per cent) and Temne (31.4 per cent of the total population of Sierra Leone). The two ethnic groups make up almost two-thirds of the total population.

The remaining 13 groups make up just a little over a third of the population with Krim accounting for only 0.2 per cent. These 13 ethnic groups account for less than 10.0 per cent each, as seen in Table 5.2.

Table 5.2: Ethnic composition of Sierra Leone, regions and district

Region	Krio	Mende	Temne	Limba	Kono	Koranko	Fullah	Susu
Sierra Leone	1.3	31.9	31.4	8.4	5.1	4.4	3.8	2.9
Eastern	0.2	54.7	4.8	2.2	19.4	2.1	2.6	0.5
Northern	0.2	1.1	57.0	13.8	0.2	10.1	3.8	5.8
Southern	0.3	78.1	8.0	0.9	0.3	0.2	1.8	0.5
Western Area	5.4	14.1	40.3	13.2	2.3	1.6	6.9	3.0
District								
Kailahun	0.1	70.7	1.0	0.6	1.0	0.1	0.9	0.1
Kenema	0.3	83.4	4.8	1.8	0.6	0.4	3.1	0.7
Kono	0.3	3.3	8.6	4.5	61.2	6.0	3.8	0.5
Bombali	0.3	1.4	45.0	24.8	0.3	0.6	4.4	6.5
Kambia	0.1	0.7	54.8	17.9	0.1	0.1	1.7	20.8
Koinadugu	0.1	0.4	3.4	15.8	0.3	51.3	11.9	0.2
Port Loko	0.4	1.7	84.4	4.1	0.3	0.2	1.5	5.2
Tonkolili	0.2	0.9	81.5	8.1	0.2	7.3	0.9	0.1
Bo	0.5	81.9	6.7	1.7	0.4	0.2	2.8	0.6
Bonthe	0.4	72.4	1.6	0.3	0.2	0.1	1.0	0.4
Moyamba	0.3	55.4	22.3	0.7	0.4	0.1	1.5	1.0
Pujehun	0.1	95.8	0.7	0.3	0.1	0.3	0.7	0.1
Western Area Rural	3.4	12.8	47.4	11.3	2.4	1.5	6.1	2.5
Western Area Urban	6.2	14.6	37.3	14.1	2.3	1.6	7.3	3.1

Source: Statistics Sierra Leone, 2015
Population and Housing Census

Table 5.2: Ethnic composition of Sierra Leone, regions and district (continued)

Region	Kissi	Loko	Madingo	Sherbro	Yalunka	Krim	Vai	Non- S/Leonean,
Sierra Leone	2.5	2.3	2.3	1.9	0.7	0.2	0.0	0.5
Eastern	9.9	0.3	2.1	0.3	0.1	0.0	0.0	0.6
Northern	0.1	3.2	2.1	0.5	1.8	0.0	0.0	0.2
Southern	0.2	0.5	1.4	6.2	0.0	1.0	0.0	0.4
Western Area	0.6	4.9	3.6	2.0	0.3	0.0	0.0	1.2
District								
Kailahun	23.5	0.1	0.9	0.1	0.0	0.0	0.0	0.3
Kenema	0.9	0.5	2.2	0.5	0.1	0.0	0.0	0.6
Kono	6.5	0.4	3.4	0.2	0.4	0.0	0.0	0.7
Bombali	0.1	12.2	3.7	0.1	0.1	0.0	0.0	0.3
Kambia	0.0	0.2	0.5	2.4	0.0	0.0	0.0	0.4
Koinadugu	0.1	0.1	5.4	0.0	10.6	0.0	0.0	0.3
Port Loko	0.1	0.7	0.8	0.3	0.0	0.0	0.0	0.2
Tonkolili	0.0	0.2	0.3	0.1	0.0	0.0	0.0	0.1
Bo	0.3	0.6	2.6	0.9	0.1	0.0	0.0	0.6
Bonthe	0.1	0.1	0.3	16.2	0.0	6.6	0.0	0.1
Moyamba	0.1	1.0	0.8	15.9	0.0	0.0	0.0	0.2
Pujehun	0.2	0.1	0.4	0.2	0.0	0.4	0.1	0.3
Western Area Rural	0.6	4.5	2.7	3.2	0.3	0.0	0.0	0.9
Western Area Urban	0.6	5.0	3.9	1.5	0.3	0.0	0.0	1.3

Source: Statistics Sierra Leone, 2015 Population and Housing Census

The Eastern Region is predominantly home to the Mendes, Konos and Kissis, who together make up over four in every five people (84 per cent) in the population. In contrast, the Temne population in the Eastern Region is quite small and represents just about 5.0 per cent. The Southern Province is dominated almost exclusively by the Mende (78.1 per cent) and the Shebro (6.2 per cent). These two groups constitute 84.3 per cent of the population in the Southern Region.

The Northern Province recorded four major ethnic groups made up of the Temne (57.0 per cent); Limba (13.8 per cent); Koranko (10.1 per cent) and Susu (5.8 per cent). They comprise 86.7 per cent of the population in the Northern Region. It is, however, to be noted that the Mende ethnic group (which happens to be the largest in the country) is virtually absent in the Northern Region, representing only 1.1 per cent of the region's population.

In the Western Area Region, three ethnic groups are dominant: Temne (40.3 per cent); Mende (14.1 per cent) and Limba (13.2 per cent). Together, these three ethnic groups make up a little more than two thirds of the population of the region. Apart from these three ethnic groups in the Western Area Region, the next two common ethnic groups are the Fulla (6.9 per cent) and the Krios (5.4 per cent).

In conclusion, ethnic groups are poorly diffused spatially in the country but remain dominant and concentrated in particular regions. Non-Sierra Leonean nationals make up only 0.8 per cent of the total national population enumerated in 2015.

5.3 Religious composition

Religion is like ethnicity, in that it has hardly been analysed during past censuses. With the growing increase of various denominations in the country, it has become necessary to assess the religious composition of the population, albeit in terms of religions rather than denominations.

The results clearly indicate that there are two predominant religions in Sierra Leone. These are Islam (77.0 per cent) and Christianity (21.9 per cent of the total population).

This pattern is not affected by geographic boundaries as Islam is prevalent across all regions and district. Regionally, Islam is most common in the Northern Region (85.1 per cent) whilst Christianity is most predominant in the Western Region (30.1 per cent). In terms of distribution by district, more than nine in every ten persons in Pujehun are Muslims. The largest concentration of Christians is however found in Kono, where just over four in every ten persons are Christians. The results of these analyses are presented in Table 5.3.

Table 5.3 Religious composition of household population in Sierra Leone by regions and districts

	Percentage					
Region	Christianity	Islam	Bahai	Traditional	Other	No Religion
Sierra Leone	21.9	77.0	0.5	0.1	0.7	0.3
Eastern	29.0	69.4	0.1	0.1	1.2	0.2
Northern	13.7	85.1	0.0	0.0	0.6	0.5
Southern	19.2	79.9	0.0	0.0	0.6	0.3
Western Area	30.1	69.1	0.1	0.0	0.6	0.1
District						
Kailahun	34.0	64.0	0.1	0.2	1.4	0.3
Kenema	12.8	86.7	0.0	0.0	0.4	0.1
Kono	43.5	54.3	0.1	0.2	1.8	0.1
Bombali	26.9	71.4	0.0	0.0	1.2	0.4
Kambia	5.3	94.1	0.0	0.0	0.3	0.3
Koinadugu	12.7	86.6	0.0	0.0	0.4	0.2
Port Loko	5.9	92.8	0.0	0.0	0.5	0.8

Table 5.3- Religious composition of household population in Sierra Leone by regions and districts (continued)

	Percentage					
Region	Christianity	Islam	Bahai	Traditional	Other	No Religion
District						
Tonkolili	14.0	84.9	0.0	0.1	0.5	0.4
Bo	26.9	72.1	0.0	0.0	0.7	0.2
Bonthe	13.1	85.4	0.0	0.0	1.4	0.1
Moyamba	24.9	74.2	0.0	0.0	0.4	0.4
Pujehun	4.8	94.6	0.0	0.0	0.1	0.5
Western Area Rural	27.3	72.0	0.1	0.0	0.6	0.1
Western Area Urban	31.3	67.9	0.1	0.0	0.6	0.1

Source: Statistics Sierra Leone, 2015 Population and Housing Census

5.4 Youth population

In Sierra Leone, youth are those persons aged 15-35 years. An assessment of the youth population is crucial as it hinges on issues of employment, education, reproductive health and other services. The youth population accounts for 39.4 per cent of the national population. There are more female youths: 52.8 per cent compared to male youths (47.2 per cent). The sex ratio of the youth population is 89.2, which implies that for every 100 female youths there are 89.2 male youths.

The analysis of the youth population in each region and district indicates that on average they represent about 40.0 per cent of the population. Noticeable deviations are the Western Area where 45.6 per cent of the region's population are youth. The lowest population of youth is in Moyamba District, where they account for 33.9 per cent of the total district population (Table 5.4).

Table 5.4: Youth population (15-35 years) Sierra Leone, by region, district and sex

Region	Total population	Total pop (15-35)	Youth pop as % of total pop	Male youth pop	% of youth pop	Female youth pop	% of female Pop
Sierra Leone	7,092,113	2,794,301	39.4	131758	47.2	1476720	52.8
Eastern	1,642,370	646472	39.4	302383	46.8	344089	53.2
Northern	2,508,201	924067	36.8	425028	46.0	499039	54.0
Southern	1,441,308	539741	37.4	308225	57.1	291516	42.9
Western Area	1,500,234	684021	45.6	341945	50.0	342076	50.0

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Table 5.4: Youth population (15-35 years) Sierra Leone, by region, district and sex (continued)

Region	Total population	Total pop (15-35)	Youth pop as % of total pop	Male youth pop	% of youth pop	Female youth pop	% of female Pop
District							
Kailahun	526,379	208,272	39.6	98,405	47.2	109,854	52.8
Kenema	609,891	243,039	39.8	112,614	46.3	130,425	53.7
Kono	506,100	194,899	38.5	91,166	46.8	103,733	53.2
Bombali	606,544	227,061	37.4	107,011	47.1	120,050	52.9
Kambia	345,474	122,629	35.5	54,190	44.2	68,439	55.8
Koinadugu	409,372	154,393	37.7	73,453	47.6	74,817	52.4
Port Loko	615,376	222,375	36.1	98,165	44.1	124,210	55.8
Tonkolili	531,435	197,609	37.1	92,209	46.7	105,400	53.3
Bo	575,478	221,927	38.6	103,491	46.6	118,436	53.4
Bonthe	200,781	74,933	37.3	34,765	46.4	40,168	53.6
Moyamba	318,588	108,109	33.9	48,184	44.6	59,925	55.4
Pujehun	346,461	134,772	38.9	61,785	45.8	72,987	54.2
Western Area Rural	444,270	192,031	43.2	93,990	48.9	98,041	51.1
Western Area Urban	1,055,964	491,990	46.6	247,955	50.4	244,035	49.6

Source: Statistics Sierra Leone, 2015 Population and Housing Census

5.5 Adolescent population

As in most countries of the world, adolescent are recorded as persons aged 10-19 years. Their juvenile nature exposes them to numerous reproductive health risks such as early sex, early pregnancy and unplanned births. They are further exposed to other social problems such as drugs and other forms of delinquency. They may be school drop outs, particularly girls who become pregnant at an early age.

As indicated earlier, estimates of the number of adolescents at national and sub-national levels, disaggregated by sex, could guide both service providers and planners in terms of implementing appropriate policies and programmes to address the special needs and challenges of the adolescent population.

The results of analysis of the adolescent population, based on the 2015 Census, are presented in Table 5.5, by region, district and sex.

Table 5.5 Distribution of the adolescent population for Sierra Leone by regions, districts and sex

Region	Total population	Total pop (10-19)	Teenage pop as % of region/ district pop	Male	% of male pop	Female	% of female
Sierra Leone	7,092,113	1,720,912	24.3	862,380	50.1	858,532	49.1
Eastern	1,642,370	420,346	25.6	211,747	50.4	208,599	49.6
Northern	2,508,201	603,284	24.1	309,438	51.3	293,846	48.7
Southern	1,441,308	345,616	24.0	174,308	50.4	171,305	49.6
Western Area	1,500,234	351,666	23.4	166,887	47.5	184,779	52.5
District							
Kailahun	526,379	140,127	26.6	72,302	51.6	67,825	48.4
Kenema	609,891	150,748	24.7	74,919	49.7	75,829	50.3
Kono	506,100	129,396	25.6	64,469	49.8	64,927	50.2
Bombali	606,544	146,277	24.1	74,703	51.1	71,574	48.9
Kambia	345,474	79,116	22.9	40,184	50.8	38,932	49.2
Koinadugu	409,372	113,194	27.6	59,474	52.5	53,720	47.6
Port Loko	615,376	139,712	22.7	70,276	50.3	69,436	49.7
Tonkolili	531,435	124,985	23.5	64,801	51.8	60,184	48.2
Bo	575,478	138,768	24.1	68,692	49.5	70,076	50.5
Bonthe	200,781	47,346	23.6	24,123	51.0	23,223	49.0
Moyamba	318,588	67,839	21.3	34,760	51.2	33,079	48.8
Pujehun	346,461	91,663	26.5	46,733	51.0	44,930	49.0
Western Area Rural	444,270	10,511	23.7	50,469	48.0	54,632	52.0
Western Area Urban	1,055,964	246,565	23.3	116,418	47.2	130,147	52.8

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Firstly, adolescents account for 24.3 per cent of the national population with an almost equal distribution by sex (50.1 per cent males and 49.1 per cent females). The distribution by regions suggests that the largest concentration of adolescents is in the Eastern Region (25.6 per cent). The Southern Region has the least percentage of adolescents accounting for 24.0 per cent of the region's population.

The distribution of the adolescent population by district ranges from 21.3 per cent in Moyamba to 27.6 per cent in Koinadugu. The distribution by district indicates that there are nine districts with higher percentages of male adolescents compared to five districts with higher percentage of female adolescents than male adolescents.

5.6 Female population age 15-49 years

It is important to highlight the reproductive health status of females of reproductive ages (considered to be 15 and 49 years). To do this, however, requires the analysis of their distribution by district to inform planning, policy and research activities. The female population 15-49 years account for 51.0 per cent of the female population, as seen in Table 5.6. About a third of all women in the reproductive span are in the Northern Region.

Table 5.6: Percent female population 15-49 years by region and district

Region	Percentage of National Population	Age/sex accuracy index
Sierra Leone	100.0	1,835,328
Eastern	23.0	421,997
Kailahun	7.3	134,657
Kenema	8.7	159,650
Kono	7.0	127,690
Northern	34.0	624,921
Bombali	8.3	151,606
Kambia	4.7	85,857
Koinadugu	5.5	101,022
Port Loko	8.5	156,511
Tonkolili	7.1	129,925
Southern	19.9	364,855
Bo	8.1	147,604
Bonthe	2.7	49,969
Moyamba	4.2	77,881
Pujehun	4.9	89,401
Western Area	23.1	423,555
Urban	6.6	120,747
Rural	16.5	302,808

Source: Statistics Sierra Leone, 2015 Population and Housing Census

Although the Southern Region has the least proportion of women in the target population (1,549), it accounts for a fifth of all women in the target group. With respect to the districts, the Western Urban Area has a total of 16.5 per cent of all women in the age bracket compared to Bonthe District, with only 2.7 per cent.

5.7 Age dependency ratio

This index uses three age groups: population less than 15 years; population 15-64 years; and 65 years and over, to compute the level of dependency in a given population. The population less than 15 years and the old age population (65 years and over) constitute the economically inactive population, while the population 15-64 years represents the economically active population.

The age dependency ratio is calculated as:

$$\text{Age Dependency Ratio} \quad \frac{P<15 + P65+}{P15\text{-}64} \times K$$

Where P<15 is the population less than 15 years
P65+ is the population 65 years and over
P15-64 is the population between 15-64 years
K represents 100

These results are presented in Table 5.7 for Sierra Leone by regions and districts.

The ratio implies the extent to which the economically inactive population relies on the economically active population for their livelihood. The ratio describes the number of persons in the economically active ages 15-64 years that takes care of 100 dependent population. This means that the higher the ratio, the higher the dependency and the greater the socio-economic problems that must be addressed as opposed to lower dependency ratios.

Table: 5.7: Age dependency ratio in Sierra Leone by regions and districts

Region	2004	Age Dependency 2015 Ratios
Sierra Leone	85.5	79.5
Eastern	81.3	80.8
Kailahun	89.4	82.8
Kenema	78.2	77.8
Kono	77.6	82.9
Northern	97.1	90.4
Bombali	93.1	86.3
Kambia	106.1	95.3
Koinadugu	95.1	91.3
Port Loko	97.8	89.7
Tonkolili	95.8	92.4
Southern	90.5	85.9
Bo	84.0	81.5
Bonthe	96.8	87.8
Moyamba	95.7	92.4
Pujehun	94.4	86.6
Western Area	67.1	57.9
Urban	79.0	66.4
Rural	64.7	54.6

Source: Statistics Sierra Leone, 2015 Population and Housing Census

The results indicate that the ratios for 2015 have dropped for all the geographic entities compared to the 2004 estimates. Nationally, for example, the 2015 estimate is about 7.0 per cent lower than that for 2004. The lowest dependency ratios seem to occur in the Western Region with 57.9 per cent in 2015. The Western Area rural has a much higher level of dependency (79.0 per cent) than the urban area (64.7 per cent).

Overall, the least dependency ratio is reported in the Western Area Urban whilst the highest dependency ratio is reported in the Kambia District, where the dependency ratio is almost one economically active person to one economically inactive person. This suggests that there would be little savings of resources which could exacerbate the poverty levels. The results above could also reflect age differentials. In the Northern Region, for example, where the dependency burden is up to 90.4 per cent, the proportion of children 0-14 is 46.0 per cent.

However, in the Western Region where the dependency ratio is the lowest, the percentage of 0-14-year olds is still high at 32.9 per cent. Overall, these results suggest a heavy reliance of the non- working groups (below 15 years and 65 years and over), on the working group (15-64 years).

5.8 Demographic dividend

The concept of demographic dividend relates to the situation where there is sustained decline in fertility and mortality which alters the age structure of the population, resulting in an increased working age population. This would mean a greater proportion of the population is able to be productive and consequently contribute to the growth of the economy.

In more specific terms UNFPA (2015) makes the point that: "A country with both increasing numbers of young people and declining fertility has the potential to reap a demographic dividend."

The case of Sierra Leone, based on the results of the 2015 Census, indicates that young people 0-14 years account for 42.0 per cent of the population. Even in 1974, this sub-population accounted for 40.6 percent of the population. Over the years, therefore, young people have continued to contribute significantly to the size of the population in Sierra Leone, promising a potential contribution to the future workforce.

The second criterion for the demographic dividend to occur is declining fertility. With respect to this factor, there are indications that fertility is declining. The first Demographic and Health Survey in 2008 revealed a total fertility rate of 5.1 children, a decrease of one child from the 6.1 level reported by the 2004 Census.

The crucial factor, though, is whether the economically active group 15-64 years has been increasing in proportion. The results of the 2004 Census suggest that this segment of the population accounted for 55.7 per cent. In 2004, the contribution of this sector of the population was 53.9 per cent. Consequently, over a period of more than four decades (1974-2015) the size of the working population has only increased by 1.8 per cent. This situation may suggest that the young population aged 0-14 years is constantly being nourished by persistent high levels of fertility.

In Sierra Leone, therefore, although the population aged under 15 years is large, and fertility has been on the decline, the working age population has not grown enough for an impact to be felt in productive capacity. Another dimension which needs to be improved to enhance productivity is the quality of the work force.

In the final analysis, the UNFPA makes the point that there are three key areas that would contribute to harnessing the demographic dividend. These are empowerment, education and employment. (UNFPA 2016).

CHAPTER 6: DATA ADJUSTMENT

6.1 Introduction

The underlying assumption in this process of adjustment is that the total population is correct, but that the age structure is distorted because of shifting of ages or general age misreporting. As noted earlier, the results of the evaluation of age reporting based on the single and five- year age data revealed serious discrepancies. These problems occurred across regions as well as districts and both sexes were also affected.

6.2 Justification for Adjustment

Adjustment of the 2015 Census data are based on the following considerations:

a) The errors in age data are huge and widespread. The single-year age data have revealed prominent peaks and troughs, reflecting preferences for selected digits, primarily digits '0' and '5' and avoidance of digits such as digit '1'.
b) Errors also occur in the five-year age data with age ratios reaching 123 for males and 125 for females, exceeding the level of tolerance of 100 for males as well as females.
c) Census figures may be used for allocation of funds, services and political representation (including delineation of constituencies). Such errors (such as inaccurate census data) may therefore negatively affect the allocation of these services.
d) It is necessary to have accurate estimates of the population to serve as baseline for intercensal estimates and projections.
e) Data adjustments could therefore aid development planning by providing accurate data for all forms of sectoral planning such as education, health, employment, housing and agriculture. It is against these considerations that the process of smoothing the data on age and sex distribution of the national population has been applied.

6.3 Data adjustment

The distribution of the population by age/sex was adjusted to take into consideration issues of misreporting.In this connection, the spreadsheet AGESMTH which is a component of PAS (Population Analysis Spreadsheet) was used and the results generated based on Arriaga's (1968) method. This method was used because age data can be smoothed for age group 0-4 to age group 75-79, unlike the other methods (Carrier Farrag, United Nations, Karup King/Newton and Strong.) Essentially, the method of smoothing involves a halving formula in which the age distribution is grouped into 10-year age groups. These are then separated into five-year age groups using the following formula:

$${}_5P_x{+}5 = (-\ {}_{10}P_{x-10} + 11\ {}_{10}P_x + 2\ {}_{10}P_x{+}10) / 24 \text{ and}$$

$${}_5P_x = {}_{10}P_x - {}_5P_x{+}5$$

Where: ${}_5P_x{+}5$: is the population ages x+5 to x+9:

${}_{10}P_x$: is the population ages x to x+9; and

${}_5P_x$: represents the population at ages x to x+4

The results of the smoothing process are presented in Table 6.1.

Table 6.1: Reported and adjusted population by age and sex for Sierra Leone

Age group	Male		Female	
	Reported	Smoothed	Reported	Smoothed
0-4	469,092	527,667	469,361	531,539
5-9	555,292	496,717	553,423	491,245
10-14	431,588	460,992	415,704	450,567
15-19	430,792	401,388	442,828	407,965
20-24	308,135	319,763	354,684	369,011
25-29	277,618	265,990	330,365	316,038
30-34	199,964	217,852	234,239	253,309
35-39	201,459	183,571	219,713	200,643
40-44	154,121	159,481	145,094	144,649
45-49	133,783	128,423	108,405	108,850
50-54	99,050	90,214	87,743	77,817
55-59	59,261	68,097	51,188	61,115
60-64	53,987	51,343	28,695	53,237
65-69	36,414	39,058	37,308	42,766
70-74	30,606	29,121	34,962	32,427
75-79	20044	21,529	19,684	22,219
80+	29,772		37,739	

Source: Statistics Sierra Leone, 2015 Population and Housing Census

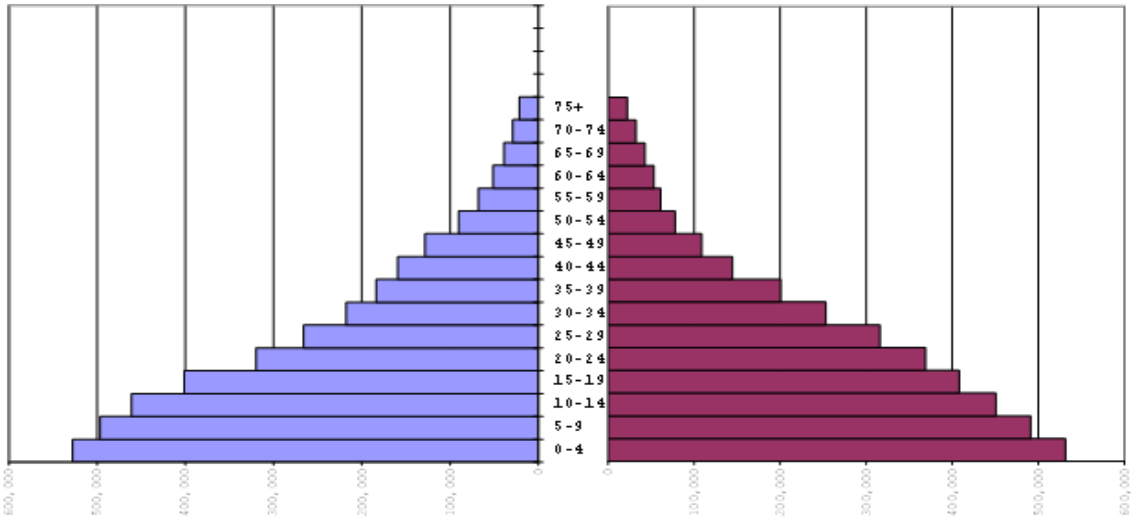
It should be noted that the reported population does not follow the expected pattern of a decrease in population with age due to mortality. This is unlike the smoothed data which follows a linear decline with age. Age groups 5-9 and 35-39 for males as well as age groups 5-9 and 15-19 for females create a 'bulge' in the age distribution, which is unexpected.

The data in Table 6.1 also reveal positive and negative differences by age and sex between the enumerated and smoothed data, which to a large extent are due to the magnitude of errors in age reporting. Age group 0-4 for males, for example, suggests a difference of 58,575 between the reported and the smoothed data; or an increase of 12.5 per cent. Overall the smoothing process reveals that half of the age groups experienced an increase, whilst another half recorded a decrease in population.

A population pyramid reflecting the smoothed data is presented in Figure 6.4. The characteristic features of this pyramid are:

a) The peaks are truncated at age 75+.
b) The population 0-4 years has now become the broadest segment for both sexes as expected.
c) There is a consistent decline in population with age, as is expected.

Figure 6.4: Smoothed population for Sierra Leone by five-year age groups and sex



6.3.1 Comparison between reported and smoothed data by age and sex for Sierra Leone

In Figures 6.5 and 6.6 the reported age data by age and sex are compared with the smoothed data to underline the extent of differences or similarities between the two curves. Regarding the males, there are more similarities than differences. The reported data are to a large extent consistent with the smoothed data, especially from age group 15-19 and beyond. This is attributed to better age reporting among the males.

In Figure 6.6, there are wide disparities between the reported and smoothed data. The gap is widest at the younger ages and narrows as age increases. This result emphasizes the point made earlier that age reporting among females is less accurate than among males.

Figure 6.5 Reported and smoothed five year aged data for males Sierra Leone 2015

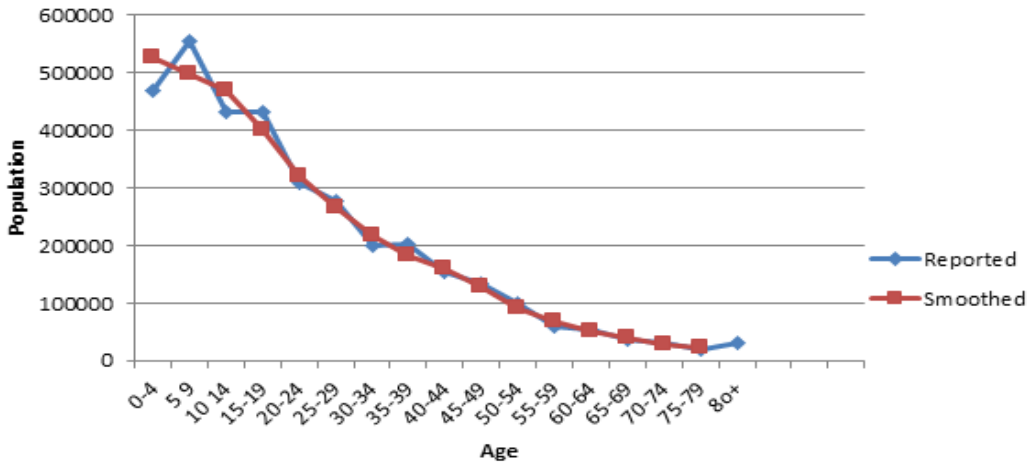
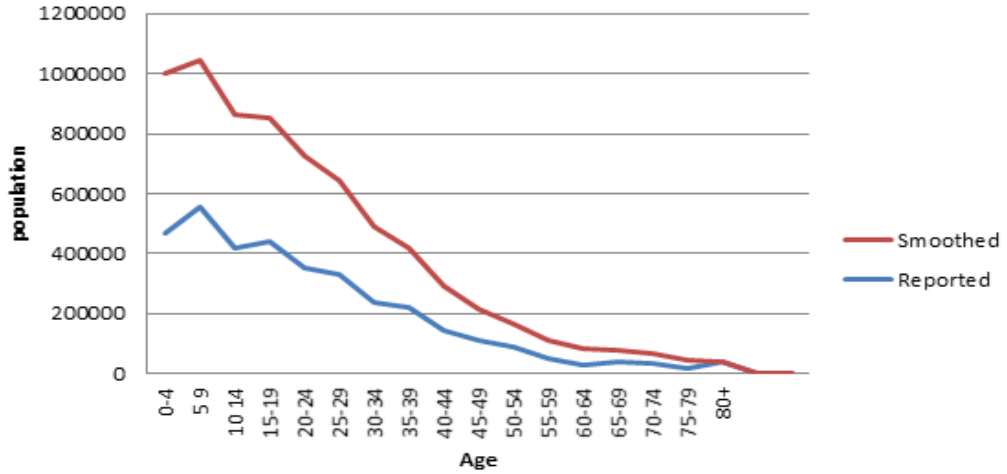


Figure 6.6 Reported and smoothed five year age data for females in Sierra Leone 2015



CHAPTER 7: DISCUSSION OF RESULTS, CONCLUSIONS, POLICY IMPLICATIONS AND RECOMMENDATIONS

7.1 Discussion of results

The analysis of the age and sex structure of the population, as revealed by the 2015 Census results suggests several issues. Firstly, although the growth rate of the population has been on the increase since 1963, the growth rate of 3.2 per cent between 2004 and 2015 has been the highest in the country's history. This could have very serious social, economic and environmental implications for the country.

Related to this, are the short doubling times of the national population, as well as that of the regions and districts. Just like the rapid growth rates, the short periods required for the populations to double could have serious effects on employment, education, health, the environment and services such as water and electricity supply.

Secondly, the poor quality of data is itself a demographic issue. Given the poor quality of the age data revealed in the 2015 Census, by all the indices used, the data may not be used effectively without a recourse to smoothing techniques.

Historically, as illustrated by various indices of evaluation, age reporting has been poor during censuses. Two factors may be responsible for this problem. The first, is the fact that large numbers of people may not know their ages, which may lead to inaccurate reporting. The second is the possibility that enumerators may not have correctly estimated the ages of their respondents.

Age dependency burden has demographic and economic implications; the size of the economically inactive group (0-14 and 65 years and over) could almost outweigh the working population (15-64 years). When this happens, the rates can be high.

This has historically been the situation in Sierra Leone, based on the analyses of all census results. In Sierra Leone, the elderly population 65 years and over has always been small (accounting for 3-5 per cent) and the driving force behind the high dependency burden is the large population (40 per cent plus) aged under 15 years.

With a high dependency burden, considerable pressure is put on the working population which support this economically inactive population on almost a one-to-one basis. This could provide fertile grounds for poverty to thrive.

The three specific populations discussed in this report are important because of their share in the general population. Women in their reproductive ages account for more than half 52.6 per cent of the total female population. The youths (15-35 years) constitute over a third of the total population while adolescents make up close to a quarter of the total population. Their sheer numbers raise a demographic concern with implications for policy and programme implementation.

For women in their reproductive ages, the provision of adequate quality health facilities to reduce the current high maternal mortality and morbidity rates should be a major concern. The youth population raises issues regarding the provision of education, employment, health and training. Inability to provide these services could spark off undesired responses like those which were associated with the 11-year Civil War in the country. The implications of their numbers cannot therefore be over emphasized.

7.2 Conclusion

The 2015 Census regarding population structure and distribution has been useful in providing many important results for development purposes. It has also provided relevant up-to-date statistics allowing comparisons with the past, in order to determine demographic trends such as the growth of the population nationally, by regions and districts in Sierra Leone.

The data have flaws, relative to age misreporting. This is, however, not unique to the 2015 Census. Misreporting of age has been a long-standing problem and has been reported in all censuses since 1963. Efforts, in terms of developing strategies to minimise the occurrence of age inaccuracies, should be embarked on as a matter of high national priority.

7.3 Policy implications

Issues raised in this report have serious policy implications. The issue of high growth rate and doubling time indicate the need for increased efforts to regulate the population, to achieve levels where growth does not outstrip existing resources and lead to increased poverty among the population.

The issue of poor quality data has been a perennial problem affecting censuses in Sierra Leone. Undoubtedly, development cannot be achieved with poor and inaccurate data. As such, efforts must be made to improve the quality of data. Etienne Van de Walle (1968, p.13) mentioned vital registration as a possible method of improving the quality of age reporting. Although it could take a long time to produce the desired results, it may be an effective start.

Regarding the dependency burden, a major strategy for reducing its high level would be to reduce the rate of growth of the young population of the country. A strict policy on birth control may be ineffective, given the predominant cultural environment in the country which supports large family sizes.

Given the size of the specific populations identified in this report, greater achievements would be made by improving the implementation of existing policies related to the youth and women of reproductive ages. Currently, a youth policy known as the Free Care Health Initiative is being planned, which if implemented effectively could successfully improve health care for this large youth population.

7.4 Recommendations

Efforts should be made to **reduce the population growth rate nationwide.** This would require an increase in the contraceptive prevalence rate which is currently about 16.0 per cent for married women.

Government should provide **financial incentives for family planning** providers to work in the rural areas where over 60.0 per cent of the population lives. Family planning providers should **design and implement more innovative projects and programmes** targetting both males and females in their reproductive ages, taking the socio-cultural environment into consideration.

Government must **fully support, the births and death registration process**, financially and logistically, to enable the office to expand its coverage across the entire country, both in rural and urban areas. This effort should also include the **creation of more registration centres**, especially in the rural areas. This would reduce the distance people have to travel to registration centres, which has always been a setback in the registration of births and deaths.

Efforts should be made to **reduce the historically high dependency burden** nationwide. This would require a major policy intervention to **reduce the population of children below 15 years**. There must be an **effective implementation of the current population policy** involving the use of contraceptives.

Government and its development partners should also **support educational efforts which seek to enrol and keep more girls in school**. This could be an indirect strategy of reducing levels of fertility among women. Efforts to **improve the rate of child survival** as a way of regulating the number of births should also be stepped up.

The Government's objective regarding the three special populations outlined in this report (youth, adolescents and women in their reproductive ages) should be to provide the necessary services to improve the status of the three populations. For the youth and adolescents, Government's intervention should contribute to **improving the level of productivity** of these sub-populations.

This must be done by providing **education and other forms of training**, especially in vocational skills, as well as **appropriate education in reproductive health** to improve their knowledge of such issues and enhance their reproductive health practices.

For women in their reproductive ages, a major thrust of Government intervention should be to **reduce the high level of maternal mortality and morbidity** which currently constitute a huge challenge nationwide. Government should provide **more and better maternal health facilities**, especially in the rural areas. In addition to the facilities, the corresponding human resources (for example, **doctors, midwives) should also be trained and recruited**. The existing **Free Health Care Initiative should be evaluated after seven years** of implementation, to ensure the programme is achieving its intended objectives.

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APPENDIX

Appendix 1: Digits of preference and avoidance by sex, Eastern Region

Method and terminal digit Myers Method	Level of Preference or Avoidance		
	Male	Female	Both sexes
Digit	55.5	61.3	58.4
0	13.8	16.4	15.1
1	-5.4	-5.8	-5.6
2	-2.1	-2.4	-2.3
3	-4.8	-5.0	-4.9
4	-5.3	-5.7	-5.5
5	13.6	13.3	13.5
6	-4.1	-4.2	-4.1
7	-2.1	-3.8	-2.9
8	0.3	-3.8	-3.8
9	-3.9	-3.8	-3.8

Appendix 2: Digits of preference and avoidance by sex, Northern Region

Method and terminal digit Myers Method	Level of Preference or Avoidance		
	Male	Female	Both sexes
Digit	63.2	60.3	57.2
0	9.7	16.6	13.0
1	-6.2	-5.9	-6.0
2	-3.2	-2.0	-2.6
3	-5.4	-4.9	-5.2
4	-5.8	-5.5	-5.6
5	8.8	12.7	10.7
6	13.2	-3.9	4.9
7	-4.5	-4.0	-4.3
8	-1.5	-0.9	-0.4
9	-5.0	-4.0	-4.5

Appendix 3: Digits of preference and avoidance by sex, Southern Region

Method and terminal digit Myers Method	Level of Preference or Avoidance		
	Male	Female	Both sexes
Digit	51.3	56.8	54.2
0	13.1	15.6	14.4
1	-5.0	-5.6	-5.3
2	-1.4	-2.0	-1.7
3	-4.2	-4.4	-4.3
4	-4.8	-5.3	-5.0
5	12.4	12.0	12.2
6	-3.6	-3.8	-3.7
7	-3.0	-3.9	-3.5
8	0.1	0.9	0.5
9	-3.5	-3.5	-3.5

Appendix 4 :Digits of preference and avoidance by sex, Western Area Region

Method and terminal digit Myers Method	Level of Preference or Avoidance		
	Male	Female	Both sexes
Digit	27.2	28.3	27.7
0	2.8	6.5	6.2
1	3.5	-3.9	-3.7
2	0.7	0.5	0.6
3	1.3	-1.2	-1.3
4	2.9	-3.0	-2.9
5	6.7	6.2	6.4
6	2.4	-2.3	-2.4
7	1.4	-1.7	-1.5
8	0.5	1.0	0.7
9	2.2	-2.0	-2.1


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