

# **POPULATION DATA ANALYSIS REPORTS**

## **Volume 1**

# **SOCIO-ECONOMIC AND DEMOGRAPHIC TRENDS ANALYSIS**

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## **PREFACE**

The Population Census is the single most important source of data on the population and its characteristics in the country. It provides information on the size, growth, composition and distribution of the entire population, and for subpopulations; as well as for geographical areas, to the lowest levels, below the district level, i.e., such as localities, villages and settlements, and residential areas in the municipal areas. In the absence of a reliable civil registration system, the population census is currently the only source of data from which population growth and estimates can be derived.

The 2000 Population and Housing Census, is therefore an indispensable source of data for planning in the country. The results of the 2000 Census are being made available to users in three stages. At the first stage, the summary results of the census were released, in 2003, in three reports. At the second stage, publications on detailed tables on the population composition and distribution by various characteristics that were collected during the census are produced. At the third, analytical reports based primarily on the census data, and complemented with data from other sources, including sample surveys and administrative records, are being made available to give a more comprehensive view of the state of the population and the policy implications of some of the observed patterns and trends.

Nineteen analytical reports have been produced as two sets of publications with funding from the United Nations Population Fund (UNFPA). The first set is published as regional reports in separate volumes, on the analysis of district data and their implications for planning. This publication is one of two-volume reports covering nine major themes. This Volume is on socio-economic and demographic trend data analysis and the second, on the implications of the census results for the demographic outlook and key policy needs of the country. Another set of reports are region-based, published in ten separate volumes corresponding to the ten regions. Each regional report is on the analysis of district data and their implications for planning.

This and all the other census-based reports are initially disseminated in print and will subsequently be made available on the web to promote a wider and easier access to census data. In addition, the reports will be issued in electronic format, on CD Rom, upon request. The tables in the basic census publications will also be made available at all the Regional Offices of the Statistical Service, located in the respective regional capitals.

The Statistical Service is exploring ways of improving its services to its stakeholders, through exchange of information and constructive feedback on how the needs of users could best be served. We would therefore greatly appreciate comments and suggestions from readers.

**August 2005**

**DR. GRACE BEDIAKO  
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## ACKNOWLEDGEMENTS

One of the objectives of the Data Analysis Project, from which this and other analytical reports have been produced, was to equip senior professional staff with analytic and report writing skills to support policy planners and policy makers. Senior GSS professional staff, with the required background, were paired with known and experienced researchers from the University of Ghana and other institutions. A team of 4 contributed to preparing this Volume of the report, while a team of 16 worked on Volume 2.

The local consultants who contributed to the various chapters have demonstrated an appreciation of the real issues. The Editors also devoted considerable amount of time to compile additional data and re-write portions of the draft of the chapters.

The tireless effort and professional dedication of my colleagues of the Editorial Team are acknowledged with appreciation. Dr. Philomena E. Nyarko, who acted as Secretary to the Editorial Team, assisted the Team to effect suggested changes. The professional staff of the Data Processing Unit willingly and in a timely manner generated tabulations to facilitate the analysis and we are grateful. Mr. Baah Wadieh devoted time and effort in ensuring that the many editorial changes were faithfully effected by the Secretary. Ms. Agnes A. Apau provided secretarial support to the editorial team and Ms. Justina Yeaboah assisted with revisions at the final stages of the report preparation. The commitment of all these contributors is very much appreciated.

We wish finally to acknowledge with gratitude the financial and logistics support of the Government and the UNFPA, particularly in responding readily to our requests for releases of funds, without which the analysis reports could not have been prepared. The personal interest, encouragement and moral support of the Resident Representative, Mr. Moses Mukasa, are also very much appreciated.

While acknowledging the assistance of individuals and institutions in finalizing this Volume, any shortcomings and demerits remain my responsibility as National Project Director and Chief Editor.

**DR. KWAKU A. TWUM-BAAH**  
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## **CHAPTER 1: POPULATION SIZE, COMPOSITION AND AGE-SEX STRUCTURE**

### **1.1 Introduction <sup>1</sup>**

The first attempt to count the people of Ghana, then Gold Coast Colony, dates back to 1891 under the British colonial administration. The exercise, which was extended to other parts of the present Ghana, was repeated every ten years until the World War II interrupted the series in 1941. The last population count of the pre-independence Ghana took place in 1948, three years after the war ended.

Although these census counts reflect a continuing population growth, they cannot be employed to gauge accurately the past demographic trends and the actual growth rate since the beginning of the 20<sup>th</sup> century, because the censuses did not cover the entire areas now known as Ghana. The 1921 census was the only one that covered the entire area of modern Ghana as a result of the attachment of mandated territory from the old German Togoland under British trusteeship.

Since independence, Ghana has witnessed a rapid improvement in census taking; the 1960 census was a classic example of such improvements in data collection methods, objectives, scope and production of adequate and reliable demographic information. The second census of the Republic was carried out in March 1970 and since then two more censuses were conducted, in 1984 and 2000. The results of these censuses and virtually all the demographic sample surveys conducted in the country are employed in explaining the demographic trends in the country.

### **1.2 Population Size and Change**

Ghana's population of just over 2 million in 1921 increased to about 6.7 million in 1960 and 8.6 million in 1970; it thus more than tripled in a short period of nearly fifty years (i.e. 1921-1970). Although data for the early part of the 20<sup>th</sup> century are not reliable, they are, indicative of a rapid increase in the country's population. The reported average annual growth rates of 1.6 in 1931-1948 and 4.1 per cent in 1948-1960 suggest an acute under-enumeration of the 1948 population. The average annual growth rates of 2.8 per cent between 1921 and 1960 and 2.7 per cent between 1931 and 1960 also confirm the undercount that occurred in 1948. The depression in

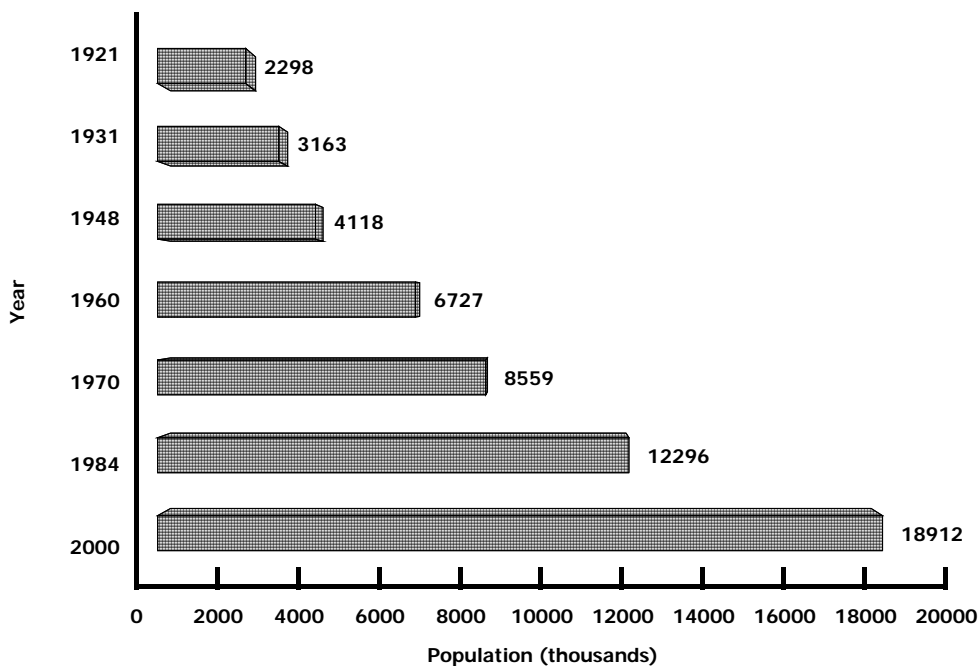
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<sup>1</sup> The Chapter has been prepared by Prof. S.K. Gaisie.

the 1930s however might have shrunk the immigration stream or even reversed it (Kimble 1960:88; Caldwell 1967:113) so that the level of incompleteness might not therefore be as high as portrayed by the results. Figure 1.1 presents a picture of the changes in population since 1921.

In view of the declining mortality and constant fertility levels until the 1980s, the reported average annual growth rate of 2.4 per cent in the decade of 1960-1970 appears to be relatively low. The population of Ghanaian by birth grew at a rate of about 3.0 per cent per annum during the same period, an indication of under-enumeration of the population of foreign origin. The 1970 census was conducted a few months after foreigners without residence permits were asked to leave the country and it was therefore not unlikely that a certain number of those who remained in the country might have declared themselves as Ghanaians or evaded enumeration. Some of these persons were counted in the 1960 census while a sizeable number of those who remained in the country might have been missed in the 1970 census for security reasons, more compelling explanations for the reported low growth rate for the period 1960-1970. Thus, both the reported average annual growth rates for the total population and population of Ghanaian origin appear to have been distorted by coverage errors. The 1960 population size therefore seems to have been more accurately reported than that of the 1970 (Gaisie and David 1974).

**Figure 1.1: Population Size, 1921-2000**





The results of the 1984 and 2000 censuses indicate that the population expanded very rapidly during the following three decades 1970-2000. It rose from 12.2 million in 1984 to 18.9 million in the year 2000; growing at the average annual growth rate of 2.7 per cent and tripling its size, once again, in four decades (1960-2000). It will be seen from table 1.1 that except the distortions of the 1948 and 1970 censuses, largely due to international migration and related issues, the average annual rate of population expansion has never fallen below 2.7 per cent and the rate of natural increase hovered around 3 per cent per annum until it started a slow decline to 2.8 per cent in the early 1990s.

**Table 1.1: Population Change, 1921-2000**

<b>Inter-censal Period</b>	<b>Population Increase (thousands)</b>	<b>percentage Increase</b>	<b>Average Annual Rate of Growth %</b>
1921-1931	866	193	3.2
1931-1948	955	30	1.6
1948-1960	2,608	63	4.1
1921-1960	4,429	193	2.8
1931-1960	3,563	113	2.7
1960-1970	1,832	27	2.4
1970-1984	3,737	44	2.6
1984-2000	6,616	54	2.7

Sources: 1921,1931,1948,1960,1970, 1984 and 2000 Population Censuses

### **1.3 Nationality**

The bulk of Ghana's population continues to be of indigenous African origin. The proportion of Africans among the Ghanaian population has never fallen below 99 per cent. Although the 1960 census results revealed that 12.3 per cent of the total population of Ghana were foreigners, about 96 per cent of them hailed from the neighbouring and nearby African countries. The enforcement of the immigration laws in 1969 reduced the foreign component of the population by almost half, to 6.6 per cent in 1970 and the proportion further declined to 3.9 per cent by the year 2000.

In absolute terms, there were almost three-quarters of a million (740,191) non-Ghanaians residing in Ghana in the year 2000 and only 133,931 were non-Africans (0.7 per cent of the total population). The non-African segment of the foreign population increased from 0.9 per cent in 1921 to 1.6 in 1948 and 2.3 per cent in 1960. It plummeted to 0.02 per cent in 1970 and rose to 0.7 per cent in 2000, due probably to economic depression in the 1970s and 1980s as well as political and economic transformation during the 1990s. Naturalised Ghanaians constituted nearly 4 per cent of the total population in 2000. The proportion of the population of Ghanaian origin increased from 87.7 per cent in 1960 to 93.4 in 1970 and 96.4 per cent in 1984 before declining slightly to 92.2 per cent in 2000.

The Ghanaian population is also made up of a large number of ethnic groups; among the major ones are the Akan, Ga-Adangbe, Guan, Ewe, Gurma, Mole-Dagbon, Grusi and Mande-Busanga. A detailed analysis of the components is undertaken at the district level.

#### **1.4 Age-Sex Structure**

##### Age structure

Ghana's population bears a youthful structure (table 1.2); with a broad base consisting of large numbers of children, and a conical top of a small number of elderly persons. The proportion aged less than 15 years is still more than 40 per cent, although it has been declining in recent years; falling from 45.0 per cent in 1984 to 41.3 per cent in 2000. The proportions were much higher in the 1960s and 1970s, rising from 44.5 per cent in 1960 to 46.9 per cent in 1970. The youth (15-24 years) constitute more than 18 per cent of the population, increasing from 1.1 million in 1960 to 2.3 million in 1984 and 3.5 million in 2000. About a third of the population is aged between 25 and 59 years, the proportion increased from 30.6 per cent in 1970 to 33.1 per cent in 2000. The aging process is slowly creeping in, with the proportions aged 60 years and older as well as those aged 65 years and older has been rising from 4.9 and 3.2 per cent in 1960 to 7.2 and 5.2 per cent in 2000 respectively.

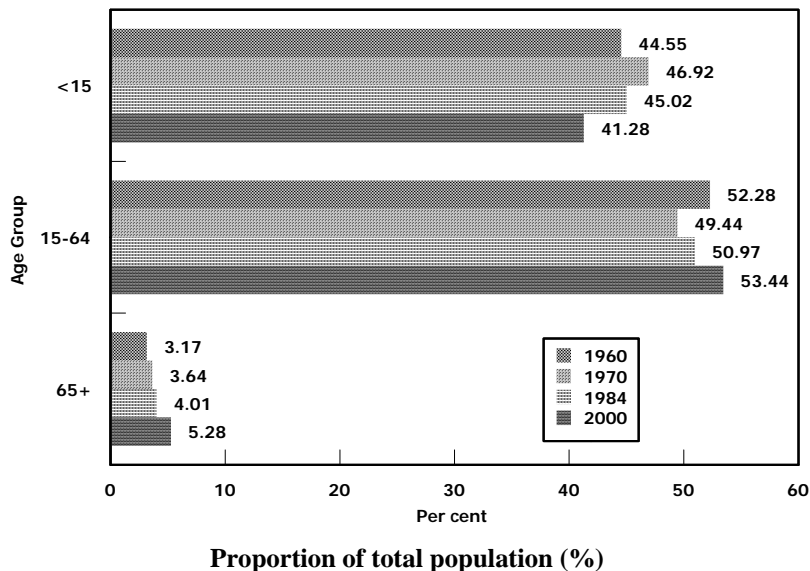
**Table 1.2: Age Structure by Sex and Broad Age Groups, 1960-2000**

Age Group	Sex	Year			
		1960	1970	1984	2000
0-15 years	Males	44.6	47.6	46.2	41.9
	Females	44.5	46.3	43.9	40.6
	Both Sexes	44.5	46.9	45.0	41.3
15-64 years	Males	52.1	48.7	49.8	52.8
	Females	52.5	50.1	52.1	54.1
	Both Sexes	52.3	49.4	51.0	53.4
65+ years	Males	3.3	3.7	4.0	5.3
	Females	3.0	3.6	4.0	5.2
	Both Sexes	3.2	3.6	4.0	5.3

Source: Compiled from 1960, 1970, 1984 and 2000 Population Census reports Central Bureau of Statistics, Ghana and Ghana Statistical Service..

The age structure in its broad picture and the changes over the 4-decade period (1960-2000) are graphically presented in Figure 1.2.

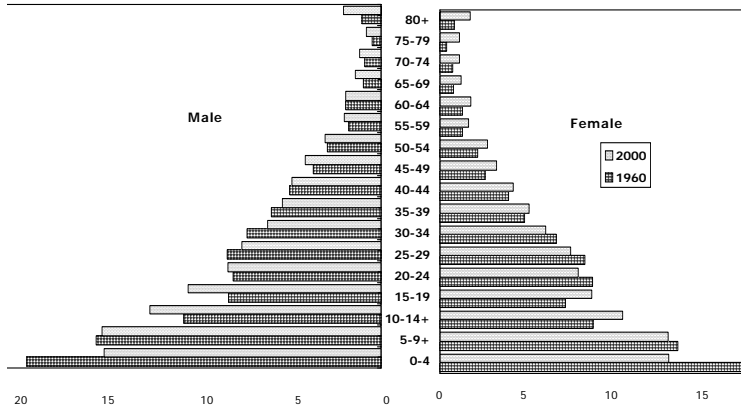
**Figure 1.2: percentage Distribution by Broad Age Groups, 1960-2000**



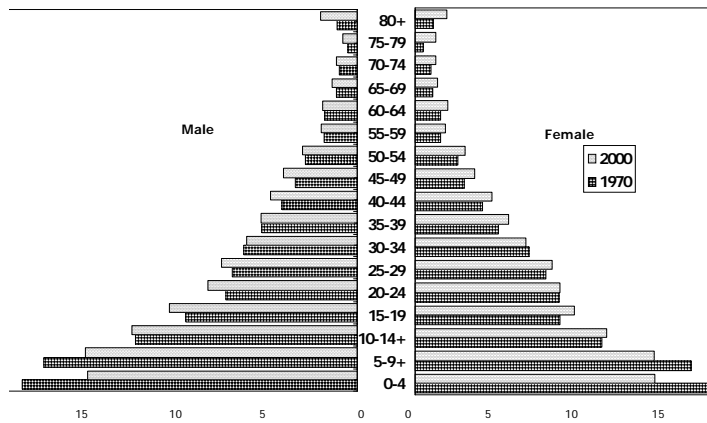
The age structure of the population has been changing gradually (figures 1.3, 1.4 and 1.5). The base of the 1960 or 1970 age structure is broader than either that of 1984 or 2000. The

proportions aged 0-4 and 5-9 years have been declining since 1960 and those of the adolescents and young adults have been rising over decades.

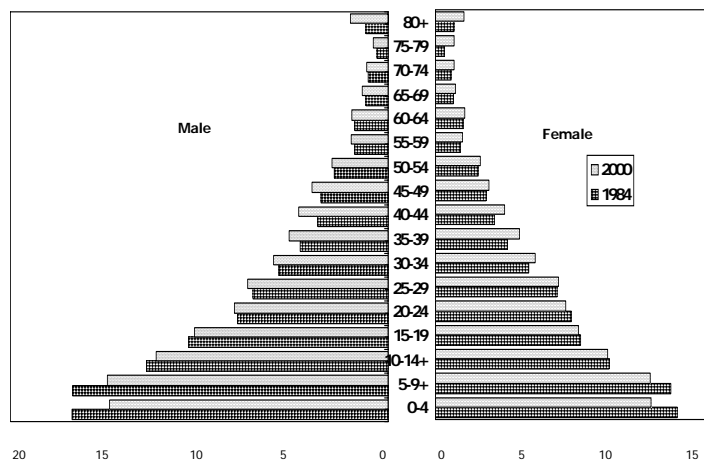
Population Pyramid By Five-Year Age Groups, 1960 and 2000



Population Pyramid By Five-Year Age Groups, 1970 and 2000



Population Pyramid By Five-Year Age Groups, 1984 and 2000



The growth of the elderly population is also evident in the gradual broadening of the tops of the pyramids in 1984 and 2000 (figure 1.5). The changes in the age structure are the outcomes of the gradual movements of fertility and mortality through the demographic transition, from high to low levels. In spite of the declines, the rates are still high, particularly fertility, and the population will continue to grow for a considerable period during the 21<sup>st</sup> century.

### **Age-structure and Population Expansion**

The age structure of Ghana's population in 2000 is typical of a country just entering the transition from high to low fertility. The population remains young and therefore has a high growth potential. Populations continue to grow after fertility reaches replacement level because of a temporary imbalance in the age structure. During the transition from high to low fertility levels, populations tend to be characterized by large numbers of men and women in the reproductive years, which lead to large numbers of children being born, even if these women have on average only 2.1 children each. Women in the reproductive ages (15-49 years) will constitute a comparatively large group in the population because they were born before fertility started a significant decline and they have experienced low levels of mortality.

The female population aged 15 to 49 years increased from 1.1 million in 1960 to 2.3 million in 1984 and then rose further to 3.5 million in 2000. The population bulge at ages 15 to 49 years tends to last for four decades. This dynamic aspect of population age structure is referred to as "population momentum"; a phenomenon which generates rapid population growth for 15 years after fertility has declined to the replacement level; the process leads to an ultimate population increase of two-thirds before growth ceases. According to the latest United Nations Projections, Ghana's total fertility rate will not drop to a replacement level until between 2030 and 2035; the population is therefore expected to grow for a considerable period of time into the latter part of the 21<sup>st</sup> century.

### **Regional Age Structures**

The age structures in the ten regions are shown in table 1.3. Although some of the regional differences in the age structures may be explained in terms of differential age reporting and the type of migration occurring in each region, they tend to mirror, in most cases, similar changes in

the country's age structure, over the four decades. The impact of immigration in the late 1940s and 1950s is reflected in the 1960 age structure with comparatively lower proportion aged less than 15 years and higher proportion in the 15-59 years age group. The regional age structures indicate that the proportion of the population aged less than 15 years has been declining slowly since 1970. But it is still above 40 per cent in all the regions except Greater Accra, the destination of most of the rural-urban migrants (table 1.3).

Table1.3: Age Structure by Region

Region	Year	Age Groups		
		0-15Yrs	15-59Yrs	60+Yrs
Ghana	1960	44.5	51.0	4.5
	1970	46.9	47.7	5.4
	1984	45.0	49.1	5.9
	2000	41.3	51.5	7.2
Western	1960	42.3	53.7	34.0
	1970	45.5	49.8	4.6
	1984	44.7	50.3	5.0
	2000	42.4	51.4	6.2
Central	1960	47.4	46.2	6.4
	1970	47.6	46.1	6.3
	1984	45.2	48.2	6.8
	2000	43.2	49.0	7.8
Greater Accra	1960	39.4	56.5	4.1
	1970	42.0	54.8	3.2
	1984	41.6	54.5	3.9
	2000	33.1	61.4	5.5
Volta	1960	45.6	48.4	6.0
	1970	47.6	45.7	6.7
	1984	44.2	47.9	7.9
	2000	41.1	50.0	8.9
Eastern	1960	45.5	49.1	5.4
	1970	47.8	46.0	6.2
	1984	44.1	49.3	6.6
	2000	41.7	50.3	8.0
Ashanti	1960	46.3	49.5	4.2
	1970	49.2	46.2	4.6
	1984	45.6	49.1	5.2
	2000	42.0	50.1	7.9
Brong Ahafo	1960	46.1	50.2	4.1
	1970	48.7	46.4	4.9
	1984	46.8	47.8	5.4
	2000	43.1	50.7	6.2
Northern	1960	48.6	47.8	3.6
	1970	47.1	48.0	4.9
	1984	48.5	45.7	5.8
	2000	46.2	47.3	6.5

Upper East	1960	48.4	44.5	6.0
	1970	42.0	51.9	6.1
	1984	44.7	48.8	6.5
	2000	43.4	47.7	8.9
Upper West	1960	46.9	47.2	5.9
	1970	49.1	44.7	6.2
	1984	47.0	46.5	6.5
	2000	43.4	47.7	8.9

Source: 1960, 1970, 1984 and 2000 Population Censuses of Ghana.

The Northern and Upper East experienced an increase in the proportion under 15 years of age between 1970 and 1984. They are among the high fertility regions (together with Brong Ahafo and Upper West) as well as regions with relatively high levels of out-migration; the proportions of children under 15 years of age ranging between 43 and 46 per cent in 2000 as compared with between 41 and 42 per cent in the other regions, and Greater Accra with the lowest 33 per cent. The rise in the proportion under 15 years may be attributed, in part, to age-selective out migration in the northern regions.

Barring age misstatement, the variations in the proportions aged 15-59 years may be explained largely in terms of net migration in the regions. The major sending regions are Northern, Upper East and Upper West while Greater Accra is the major receiving region, where six out of every ten persons are aged between 15-59 years. The population pyramids for Northern, Upper East and Upper West (Appendix A1.1) depict quite clearly the impact of out-migration on the age structures while the pyramid of the population of Greater Accra has a comparatively narrow base and a bulge between 15 and 30 years, reflecting a major fertility decline and in-migration from the other regions. The base of the population pyramids for Upper East and Upper West suggests massive underreporting of infants and young children and/or very high under-five mortality rates.

Though the data may be distorted to some extent by age misreporting, the steady increase in the population aged 60 years and older underscores the aging process. The implications of the prevailing age structure are manifold. The obvious related dimensions of such an age structure are the labour force potential, high dependency ratios, consumption needs and social and economic requirements (education, health care and jobs) for the present and future generations. These are treated in greater detail in subsequent chapters.

## **Sex Structure**

The sex composition of a population is influenced largely by the sex ratio at birth (ratio of male births to female births), differences between the sexes in death rates and differences between sexes in net migration. In most populations, there is a slightly excess of males and females at birth. This results in males outnumbering females at younger ages while the females are usually in majority at the older ages, because of higher male death rates at all ages. The average sex ratio at birth throughout the world is observed to be about 105 or 106. In African communities, however, the sex ratio at birth is much lower than those found in white societies. The sex ratio at birth among African populations is reported to be 103 and it is not known whether this lower ratio is due to differences in level of living conditions or other factors.

The sex structure is related to the age structure in the sense that although sex is much more easily determined, a differential age misstatements by sex tends to complicate the assessment of the sex balance within individual age groups. Ghana had a slight excess of males from the mid-1940s to the early 1960s. This is the consequence of immigration. The results of the 1970 and subsequent censuses show that the sex ratio of 102.3 in 1960 declined to 97.3 in 1984 and rose to 97.9 in 2000. But the sex ratio of the population of Ghana origin has always hovered around 97 males per 100 females, well within the experience of most African countries.

Females generally have lower death rates than males at all ages and in most populations. The excess of males at birth is therefore gradually reduced with advance in age. In fact 'normal' sex ratios arise as consequence of the effects of death rates. The 'normal' pattern of sex ratios exhibits slight downward trend in sex ratios at early childhood ages after which the sex ratios decrease gradually but not below 100 until age 40 years or beyond; and then decline gently at first but more precipitously at older ages. Migration is an important factor that also produces differences in sex ratios. The impact of immigration on the sex structure of the population is noticeable in the 1960 and, to some extent the 1970 age-sex structures (table 2). The irregular pattern of the sex ratios as portrayed by all the census results is a clear indication of differential age misstatement by sex. A detailed examination of this irregular trend is taken up in the next chapter.



Appendix 1:

Figure A 1.1 Population Pyramids, Ghana 2000

Fig. 4 Western Region, 2000

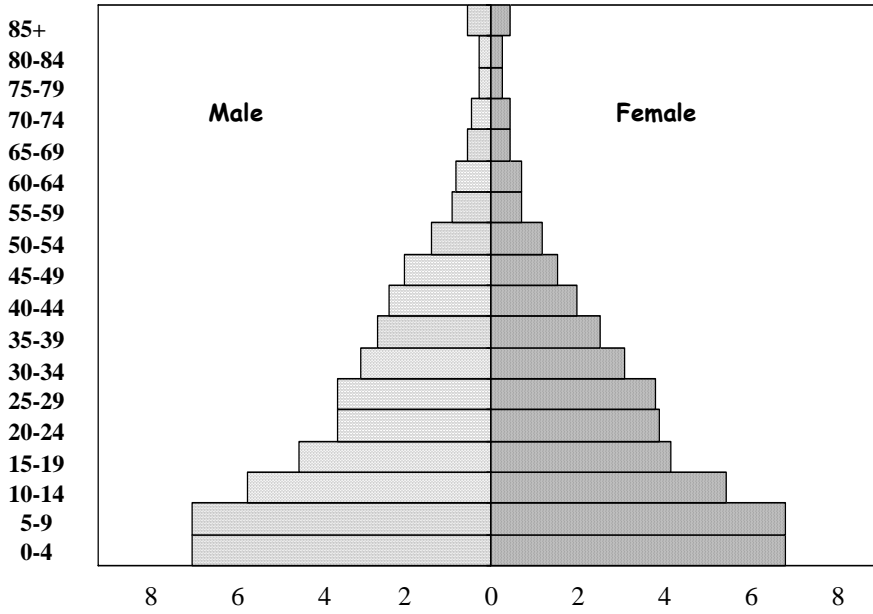
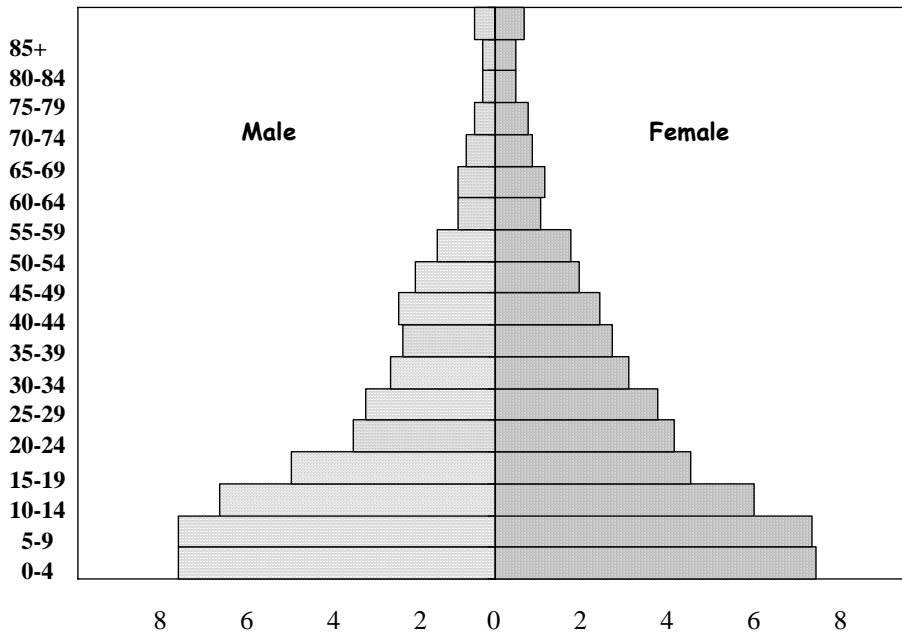
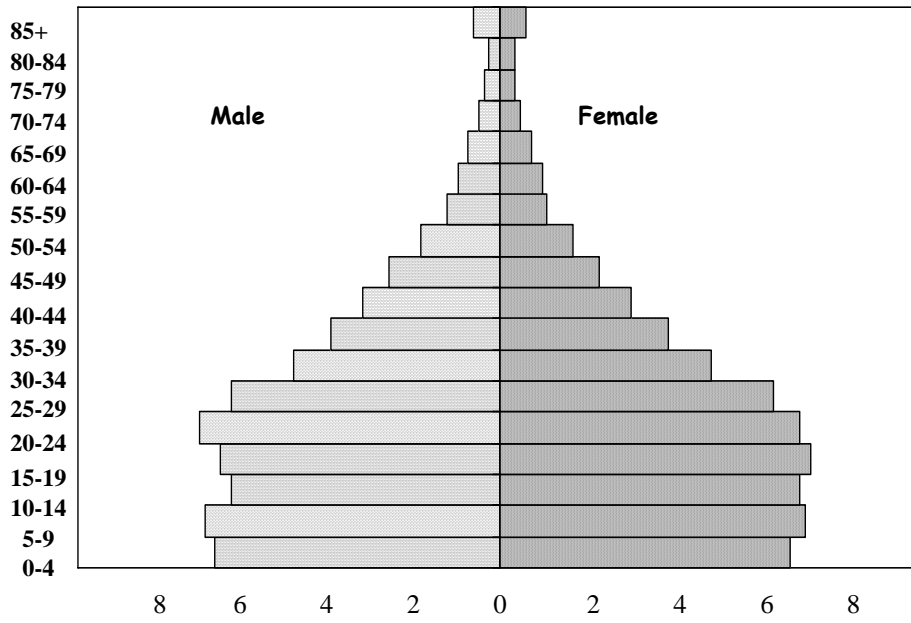


Fig. 3 Central Region, 2000



**Fig. 1 Greater Accra, 2000**



**Fig. 5 Volta Region, 2000**

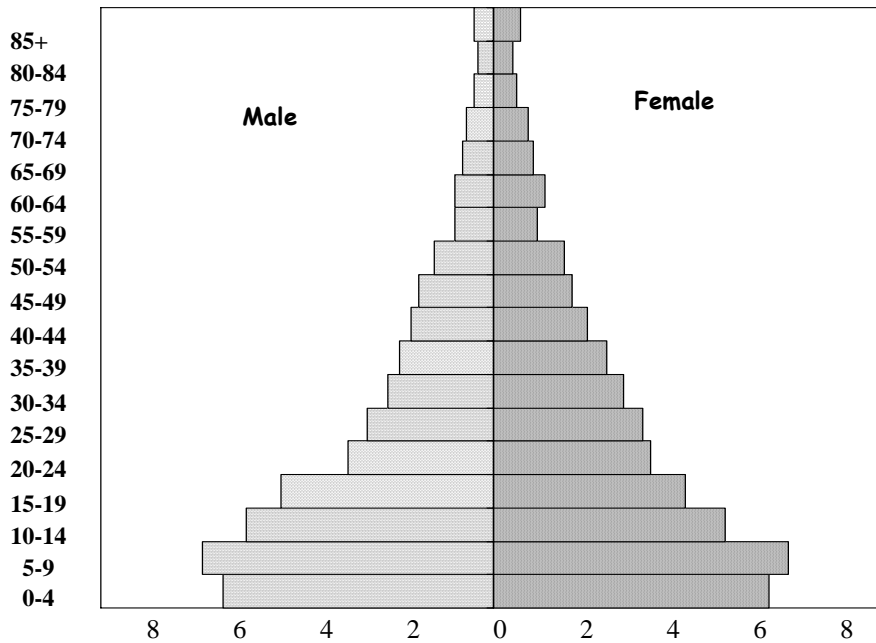
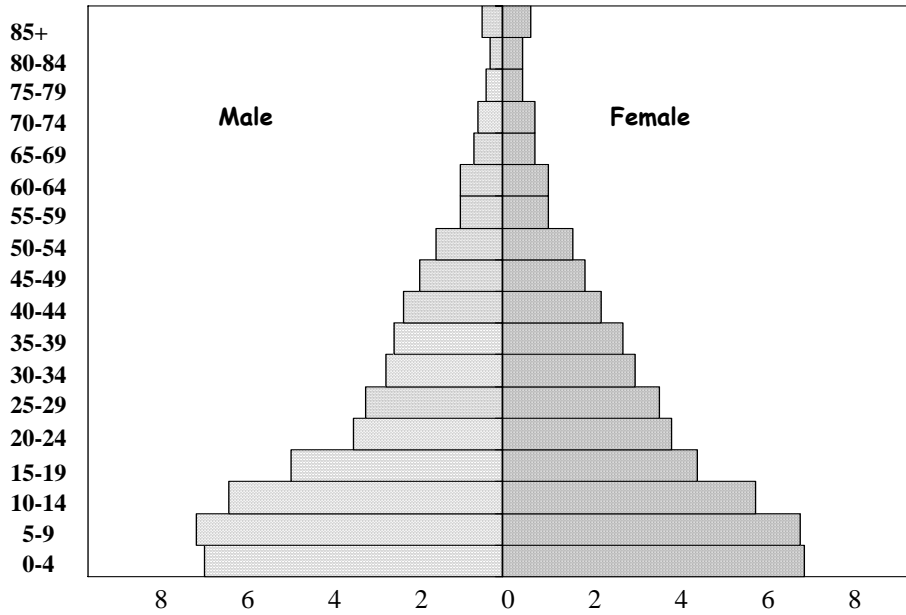
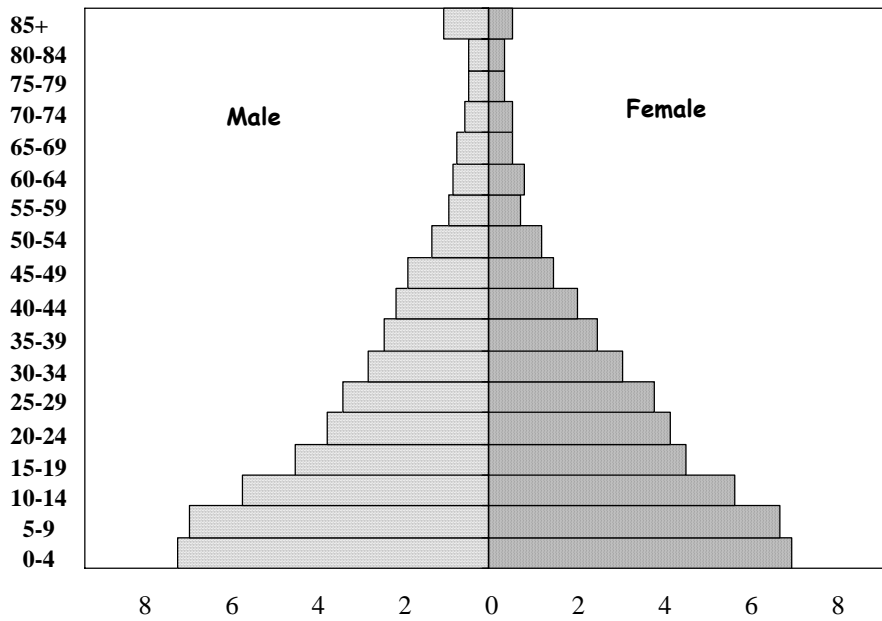


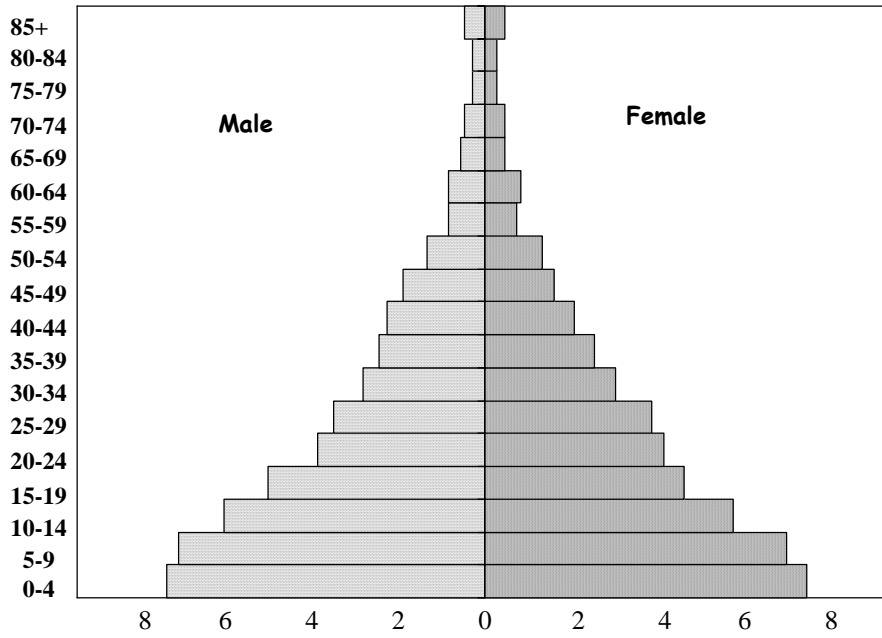
Fig. 2 Eastern Region, 2000



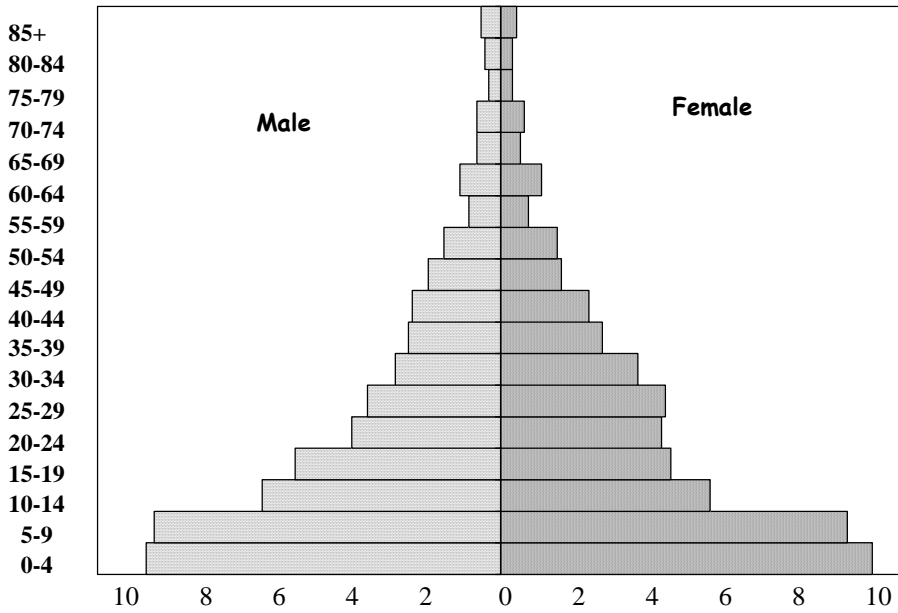
Ashanti Region, 2000



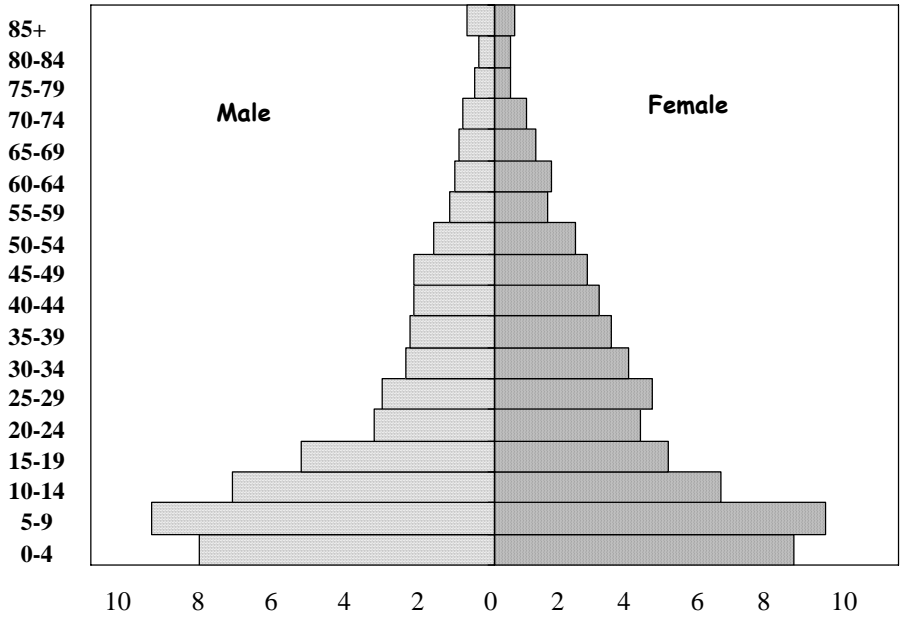
**Brong Ahafo Region, 2000**



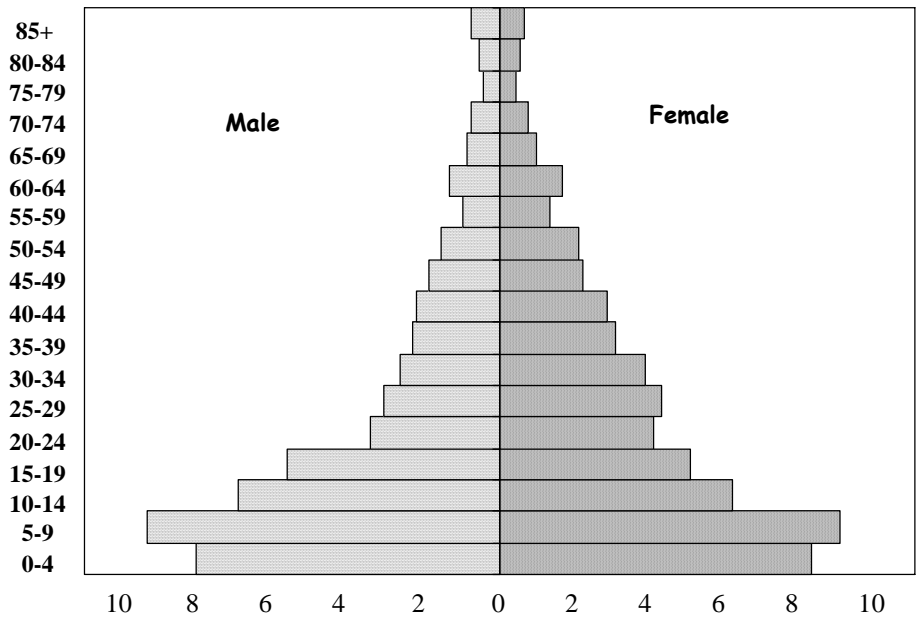
**Northern Region, 2000**



### Upper East Region, 2000



### Upper West Region, 2000



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## **CHAPTER 2: ASSESSMENT AND ADJUSTMENT OF POPULATION AGE AND SEX STRUCTURES, 1960-2000 GHANA CENSUSES**

### **2.1 Introduction**

Evaluation of data is an essential and fundamental step in data analysis. Evaluation provides, among other things, guidelines for data users and, at the same time, offers the data producing agencies basic information for dealing with some of the deficiencies in the data collection methodology in future operations. Evaluation also furnishes the analyst and the user with a basis for adjusting or correcting the raw data as well as for constructing demographic parameters (e.g., fertility and mortality levels and trends) for social and economic planning and research purposes.

A number of specific procedures have been developed for the evaluation of the quality of census and survey data. The underlying principle of all the methods is a determination of the consistency within the data themselves and/or the extent to which the data are consistent with other existing data. The following analysis presented in this chapter deals largely with the internal consistency methods.

### **2.2 Evaluation of Age-Sex Distributions**

Age is one of the most important items on which information is collected in all censuses and surveys. This is because it is a basic demographic characteristic of individuals and is highly correlated with most of the population phenomena, such as fertility, mortality, migration and socio-economic characteristics of the population. Age data are utilized in conjunction with other data to estimate demographic parameters for countries which lack vital statistics. The quality of age data is therefore of paramount importance to the analyst, the user and the planner. Consequently, census and survey data are subjected to rigorous examination and analysis and are eventually adjusted to meet the practical need for good quality information for planning and research purposes. Some of these activities constitute the core of this analysis.

#### **Detecting Age Misreporting**

##### Graphical cohort analysis

Comparison of a number of age distributions of a country helps to analyse data consistency. This involves graphical cohort analysis of the population data by year of birth. The historical series of age-sex distributions of the 1970, 1984 and 2000 censuses are used for this exercise, and presented in Figure 2.1 and 2.2. The graphs show how the population born in the same period of years and enumerated in the successive censuses is reduced through time. Thus, the spaces between the lines should represent the reduction of each cohort by mortality during the intercensal period. As a result, parallelism is expected for the same cohort. However, the spaces may also reflect errors in the data or different levels of census completeness.

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Prof. S.K. Gaisie has contributed this chapter.

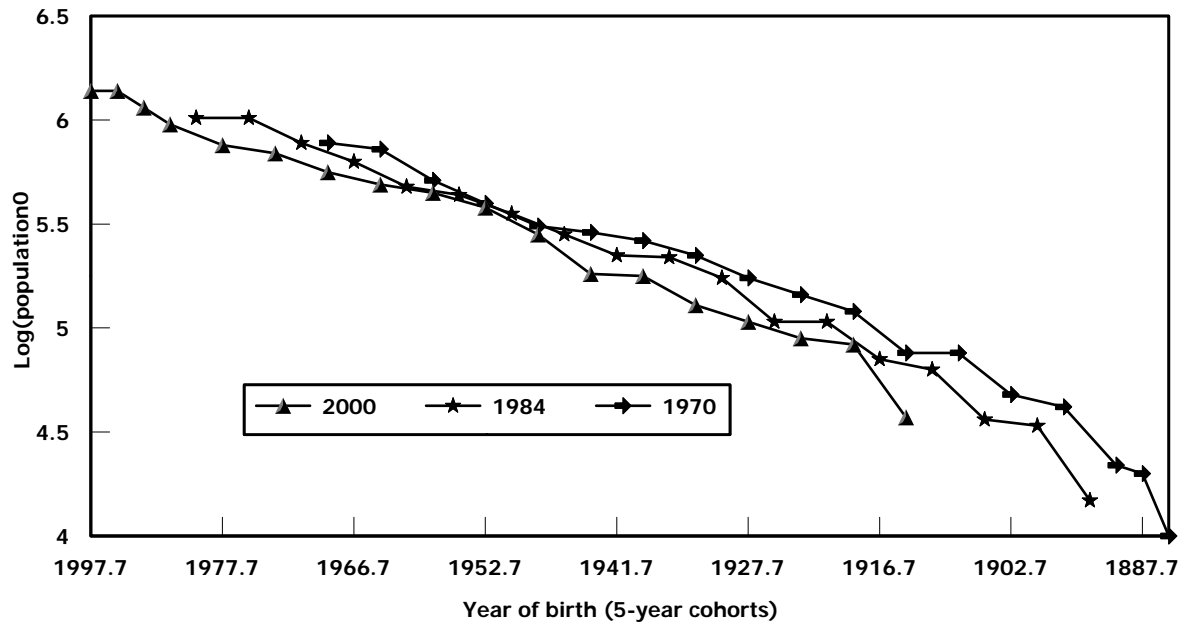
The irregular pattern of the line for each census as compared with parallelism is indicative of age misreporting in both the male and female populations. It is observed from Figure 2.1 that there are virtually no spaces between the lines for male cohorts born around 1940 and 1950 and enumerated in the 1970 and 1984 censuses (aged 20-40 years) as well as cohorts born around 1960 and 1965 and enumerated in the 1984 and 2000 censuses. The implications of this pattern are that either the cohorts have not been losing members through time or there has been a constant flow of emigration during the inter-censal periods; emigration seems to be a more plausible explanation. Another factor that may be responsible for the irregular pattern is age misstatement.

The female lines exhibit the same irregularities as the male, suggestive of marked age misreporting. Figure 2.2 indicates three noticeable features. The cohorts born around 1970 and 1975 and enumerated in the 1984 and 2000 censuses (aged about 15-30 years) replicate the pattern noted among the males (i.e. lack of spaces between the lines). Secondly, the cohort born around 1950 and 1965 and enumerated in the 1970 census is smaller in size than the same cohort enumerated in 1984. This may partly be explained in terms of the enforcement of the Aliens' Compliance Order in 1969 and partly by differential age misreporting in the two counts. Thirdly, the lines for older women aged 59 years and older seem to be much more distorted than that of their male counterparts, an indication of female age misreporting.

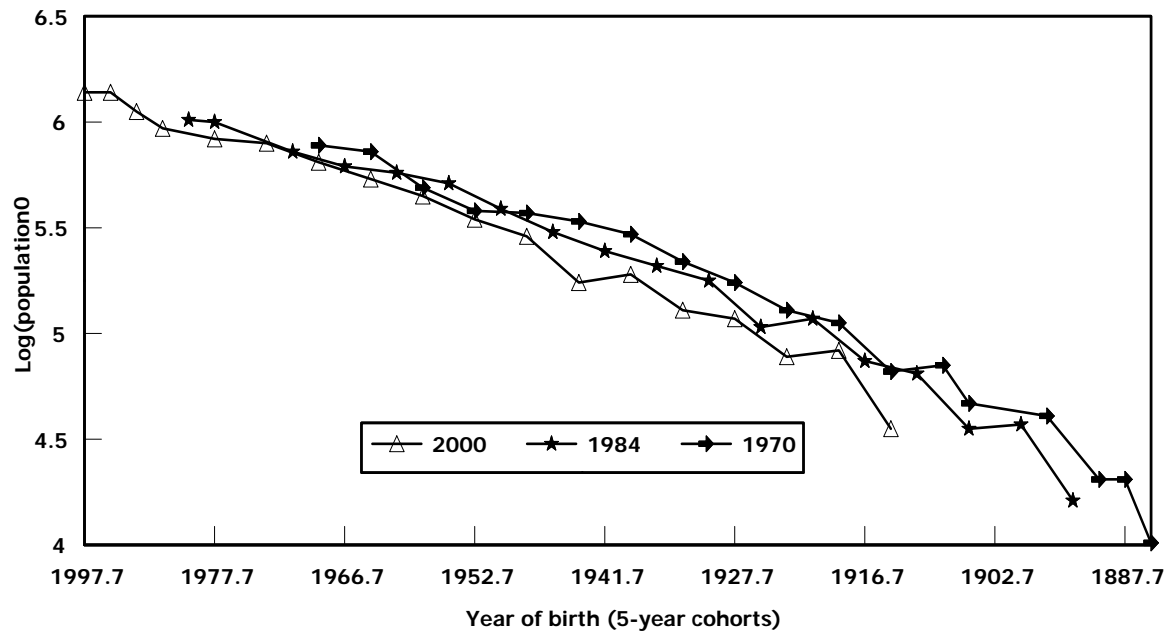
As pointed out already, lack of parallelism is indicative of age misreporting errors and/or different levels of census coverage. Unless under-enumeration or over-enumeration of certain cohorts is much more marked in one census than the other, different levels of completeness are not likely to distort parallelism. Thus, irregularities depicted in the graphs are largely due to age misreporting or age estimation errors. The male age structure, however, seems to have been affected by emigration, but the irregularity is difficult to determine.



**Figure 2 1. Male Population, 5-Year Cohorts, 1970-2000**



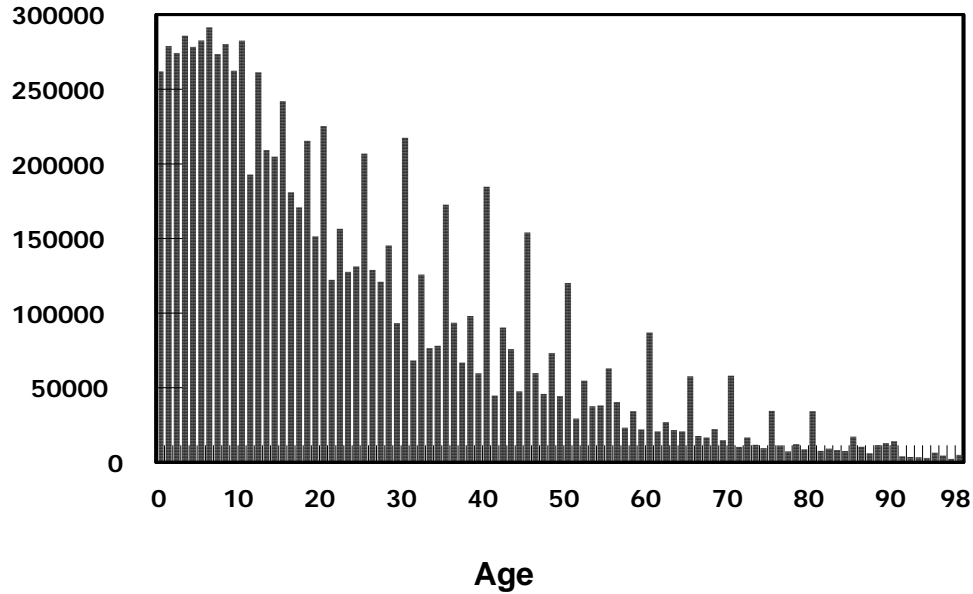
**Figure 2.2: Female Population, 5-Year Cohorts, 1970-2000**



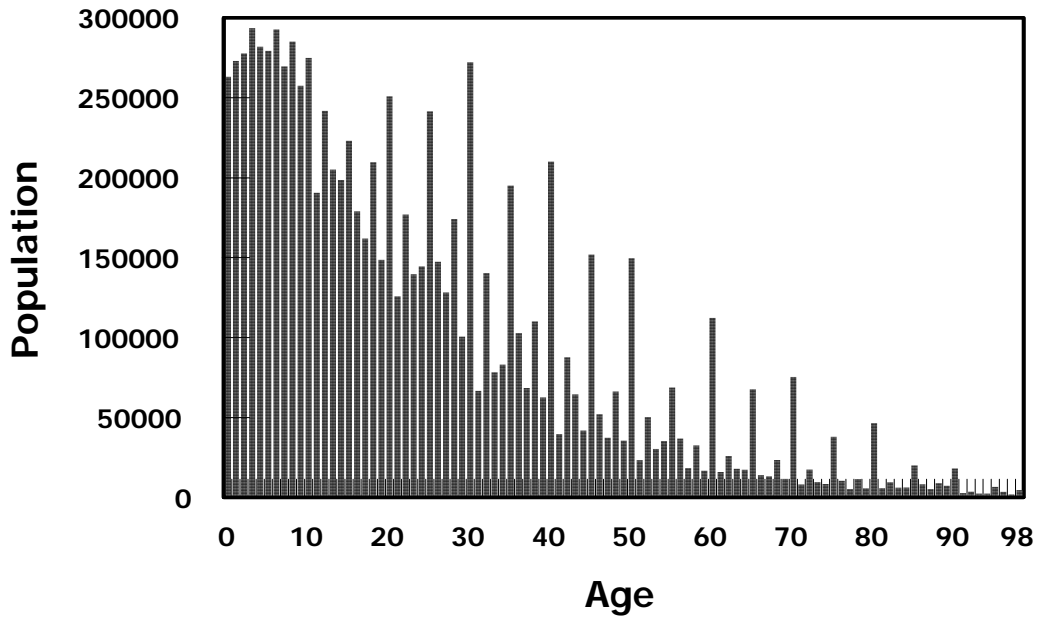
Digit preference

Digit preference can also cause errors in the age data. This type of error can be detected more easily by either graphs or indices. Single year of age distributions of the 1984 and 2000 censuses are presented in Figure 2.3 and Figure 2.4. Age errors are quite noticeable. A very common type of age misreporting is “age heaping” caused largely by digit preference.

**Figure 2.3: Male Population by Single Years of Age, 2000**



**Figure 2.4: Female Population by Single, Ghana 2000**

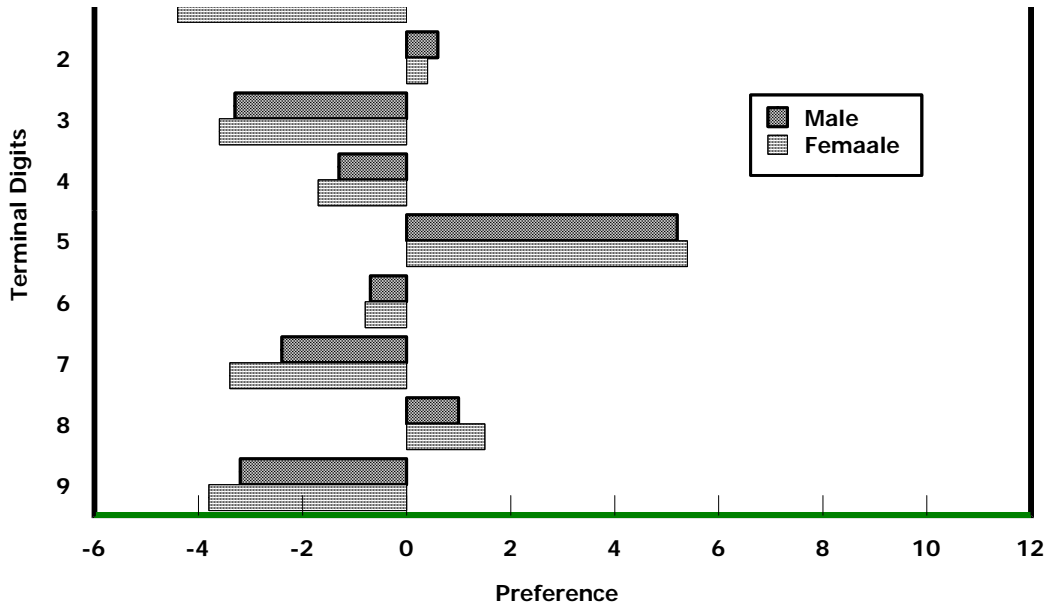


Ages ending in 0 and 5 appear to be generally preferred to other digits such as 1, 3 or 9. Hence the irregular patterns with peaks at ages 5, 10, 15, 20, etc. and troughs at ages terminating in odd numbers. A close inspection of the figures suggests that deficiencies are greatest at ages with final digits 1, 3, 7, or 9 and this is not surprising in view of the strong preference for figures ending in 0 and 5.

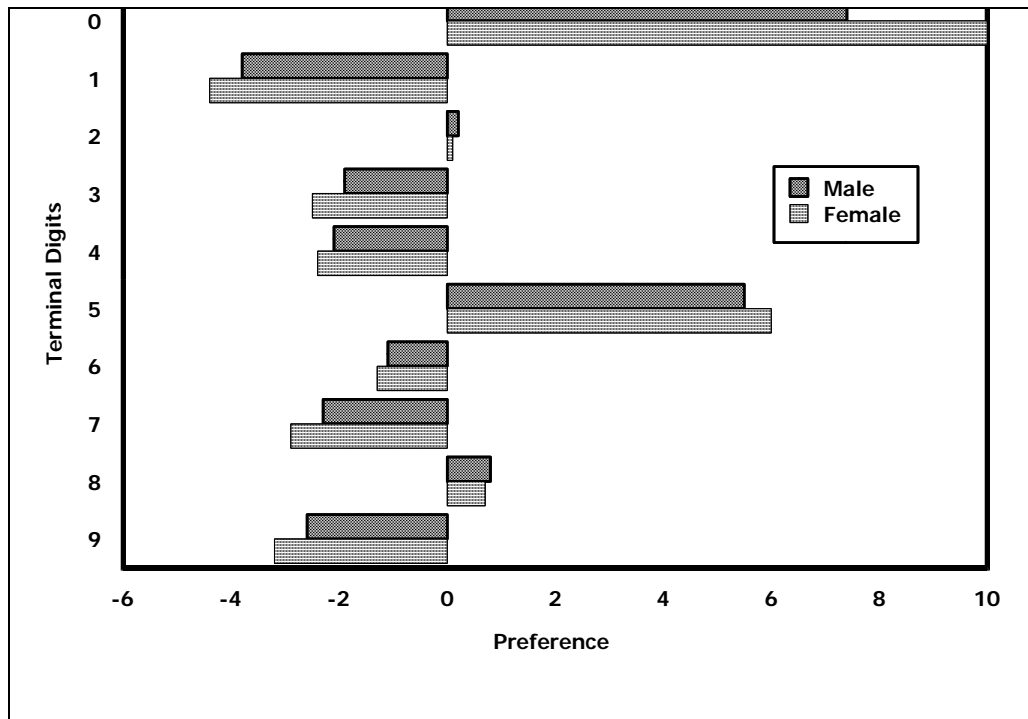
Errors in the single year age distributions can also be detected by algebraic methods such as Whipple's and Myer's indices. Whipple's index (calculated simply by expressing the population reporting age ending in 0 and 5 as a percentage of the population aged between 23 and 62 years and then multiplying by five) is a measure of preference for ages ending in 0 and 5. The computed index for the 1984 data is 186 (177 for male and 195 for females). The corresponding value for the 2000 data is 185 (176 for males and 192 for females). According to the United Nations scale for estimating reliability of age data, both the 1984 and 2000 age data may be described as extremely rough (the quality of age data is said to be very rough if the computed index is over 175). Whipple's index is a crude measure in the sense that it considers only two terminal digits and excludes ages outside 23 and 62 years. The quality of the data may, therefore, not be as bad as shown by the indices.

The "Myer's Blended Index" is the most widely known index among the more complex measures. It is more complex to calculate than the Whipple's index but its advantage is that it provides an index of preference for each digit as well as an overall measure. The indices for the 1984 age distributions are 29.6 for male and 35.2 for female (32.5 for both sexes). The corresponding indices for the 2000 are 27.6 for male and 33.6 for female age distributions (30.7 for both sexes). Values close to 0 are indicative of excellent age reporting (i.e. no heaping) and an index of 90 represents a situation where all ages are reported with the same terminal digit.

**Figure 2.5 Myers Preference by Digit, Ghana 1984**



**Figure 2.6 Myers Preference by Digit, Ghana 2000**



Figures 2.5 and 2.6 portray the extent of excess and deficit of persons at ages ending in any of the 10 digits. The strong preference for digits 0 and 5 is underlined by the larger values of the indices for these digits. There are other indices that are derived from age and sex structure of a population in five-year age groups and used to measure the extent of age-misreporting (age-sex ratio analysis).

### Age Ratio Analysis

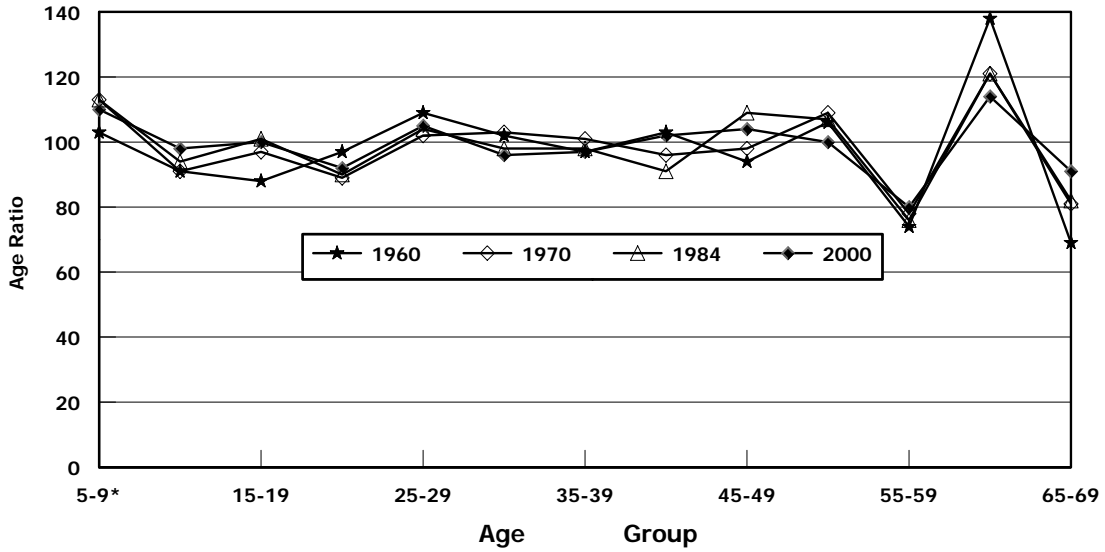
The quality of age data can also be gauged by age and sex ratios. The age ratio, defined as the ratio of the population in a given age group to an average of the sum of the populations in the adjacent age groups, is usually computed for each sex. They are a simple tool for measuring net age-misreporting. Theoretically, the age ratios are supposed to form a linear series in the absence of fluctuations in fertility, mortality and migration and they are, therefore, not expected to deviate far from 100. The age ratio score (the mean deviation of the age ratios from 100 per cent irrespective of sign) is used to appraise quality of the age data.

The data for the four censuses exhibit virtually the same pattern of female age ratios, reflecting the tendency of the number of females in their teens to be understated and that of those in adult ages (60 years and older) to be overstated (Figure 2.8). The relatively high age ratio for 5-9 age group suggests omission of young children aged 0-4 years and/or massive underreporting of ages among the 10-14 year-olds. The pattern may also be due to shifting of 0-4 year-olds across to age 5 and the 10-14 year-olds across to age 15.

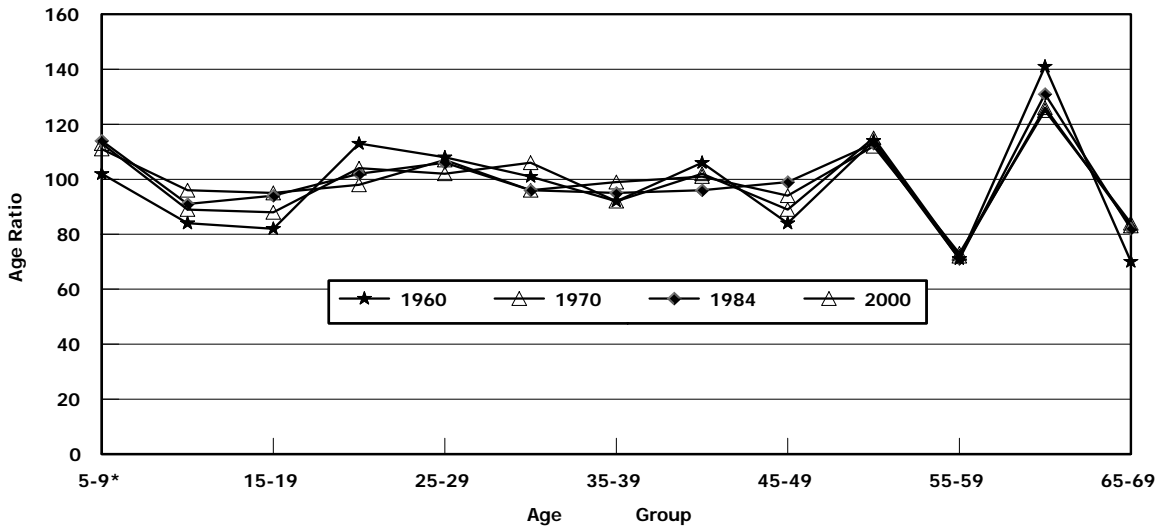
The age ratio of less than 100 for the 15-19 year age group suggests a tendency to “push” young teenagers into a higher age group. The age ratios for the age groups 25-44 years tend to be relatively stable while wide fluctuations after age 45 years and older indicate distortions by digit preference and/or overstatement of age. In general, the net under-enumeration is moderate over the age range 25-44 years. The alternation of positive and negative values over the age distribution is indicative of net age misreporting.

The male age ratios (Figure 2.7) for the age groups 5-9 years, 10-14 years and 50 years and older, follow the same pattern noted for females. The striking differences between the two sets of age ratios are that while the females ratios are positive for the age group 20-24 years and negative for the 45-49 years age group, corresponding values for the males are negative for the age group 20-24 years and positive for the age group 45-49 years; the patterns underscore the difficulty of obtaining accurate age information at both ends of the reproductive period. This is probably due to the estimation of ages on the basis of marital and/or reproductive status of the woman. Age misreporting is more widespread among persons aged 55 years and older. Overall, the deviations of the male age ratios from 100 are not as large as those of the females. The female age structure appears to be more distorted than that of the males, especially in the 15-54 years age brackets, though the male age ratios also reflect net under-enumeration and net-misreporting errors.

**Figure 2.7: Male Age Ratios by Age, 1960-2000**



**Figure 2.8 Female Age Ratios by Age, 1960-2000**



Nonetheless, age reporting seems to have improved over the years with the age ratio scores declining by 45 per cent among the males and 42 per cent among the females during the past 40 years (Table 2.1). The age ratio scores computed from age distributions, smoothed or adjusted by different methods, are also presented in the table. They indicate the extent to which age-misreporting errors are removed by different adjustment procedures.

**Table 2.1 Ghana Censuses: Summary of Indices Measuring the Accuracy of Data**

Index:	Reported	Carrier/ Farrag	K. King/ Newton	Arriaga	United Nations	Strong
Sex Ratio Score						
1960	8.77	6.06	6.40	6.11	6.26	3.14
1970	8.00	5.51	5.82	5.49	5.40	2.55
1984	6.17	4.27	4.37	4.20	4.11	1.88
2000	7.11	4.14	4.42	4.13	4.24	1.98
Male Age Ratio Score						
1960	10.95	3.51	4.30	3.60	4.21	2.45
1970	7.80	3.33	3.58	3.28	3.33	1.92
1984	8.87	1.87	1.87	1.97	3.94	1.79
2000	6.04	4.24	4.20	4.50	3.46	2.19
Female Age Ratio Score						
1960	15.42	6.45	7.34	6.33	5.59	3.07
1970	11.46	3.63	4.19	3.51	3.98	2.26
1984	10.09	3.53	3.67	3.28	3.86	1.60
2000	9.01	2.60	2.65	2.92	2.80	2.08
Accuracy Index <sup>1</sup>						
1960	52.54	28.13	30.84	28.26	28.68	14.95
1970	43.26	23.51	25.23	23.24	23.52	11.81
1984	37.47	18.22	18.66	17.86	20.12	9.04
2000	36.39	19.26	20.11	19.82	18.99	10.20

**Note:**

<sup>1</sup>The accuracy index is the sum of the male and female age ratio scores plus three times the sex ratio score, all calculated using data for ages 10-14 years through 65-69 years.

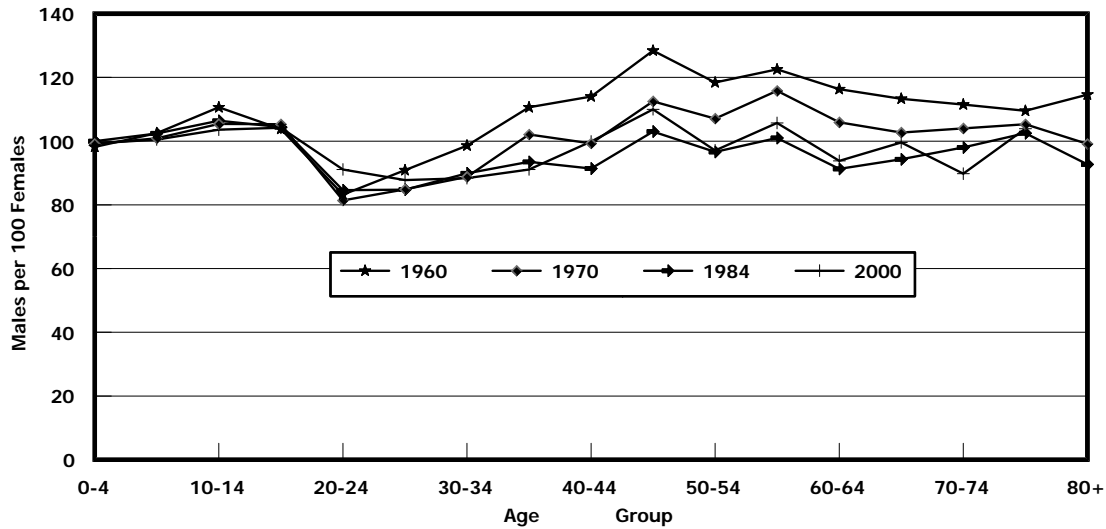
Source:

**Sex Ratio Analysis**

Sex is another important demographic characteristic. Data classified by sex can be used, among other things, as an evaluative tool or as an analytical framework. The sex ratio (number of males per 100 females) of a population is not expected to fluctuate from one period to another unless there have been major changes in the dynamics of population growth. The computed sex ratios by age are therefore supposed to provide clues to defects in the age-sex data (Figure 2.9). The sex ratio at birth, for example, is one of the few stable parameters of a population.

It usually lies between 100 and 108. The sex ratio at birth among African populations is reported to range from 100 to 104. In the absence of fluctuations in fertility, mortality and migration, the sex ratio at birth should not deviate much from the ranges pointed out above. With the higher mortality among males, the overall sex ratio of a population is expected to lie between 94 and 98. Since we are more interested in age shifting and/or omissions, the sex ratios are calculated for five-year age groups. The male dominance in 1960 is largely attributed to heavy immigration into the country during the period 1948-1960.

**Figure 2.9 Sex Ratio by Age: Ghana 1960-2000**



A comparison of this set of sex ratios with that based on the population of Ghanaian origin confirms the presence of a significant number of male immigrants (Table 2.2). The sex ratios substantially declined during the ensuing decade (1970 data), presumably due to the enforcement of the aliens' compliance order in 1969. The sex ratios computed from the 1984 and 2000 data are close to 100 at the younger ages but comparatively high at the ages 45 years and older. In view of the high mortality rates among the males, this pattern may either reflect higher female mortality (high maternal mortality) and/or overstatement of ages by the males. Although the sex ratio score (computed by summing the absolute deviations of successive sex ratios and dividing it by the number of such deviations, irrespective of sign) has been declining during the past three decades, it is still high and indicative of unremitting errors in the data. (Table 2.1 shows that even the Strong smoothing method is unable to completely remove all the errors, though it manages to reduce them to some extent).

**Table 2.2: Reported Sex Ratios by Age: 1960-2000**

Age	1960	1960*	1970	1984	2000
0-4	98.2	99.8	99.1	100.0	99.3
5-9	102.5	101.1	100.9	102.4	100.5
10-14	110.6	99.2	105.4	106.4	103.6
15-19	103.8	99.6	105.3	104.4	104.2
20-24	83.2	98.6	81.4	84.6	91.1
25-29	90.9	97.6	84.9	84.8	87.8
30-34	98.6	103.3	88.8	89.9	88.4
35-39	110.6	95.9	102.1	93.5	91.1
40-44	114.0	94.6	99.3	91.4	99.9
45-49	128.4	90.6	112.5	103.0	110.0
50-54	118.4	89.1	107.1	96.6	97.1
55-59	122.5	87.1	115.8	101.0	105.7
60-64	116.3	83.3	105.9	91.3	93.8
65-69	113.3	78.9	102.7	94.3	99.6
70-74	111.6	75.0	104.0	98.0	89.8
75-79	109.5	78.2	105.3	102.5	103.9
80-84	---	---	99.1	92.7	---

\*Ghanaians



## Combination of Age and Sex Ratios

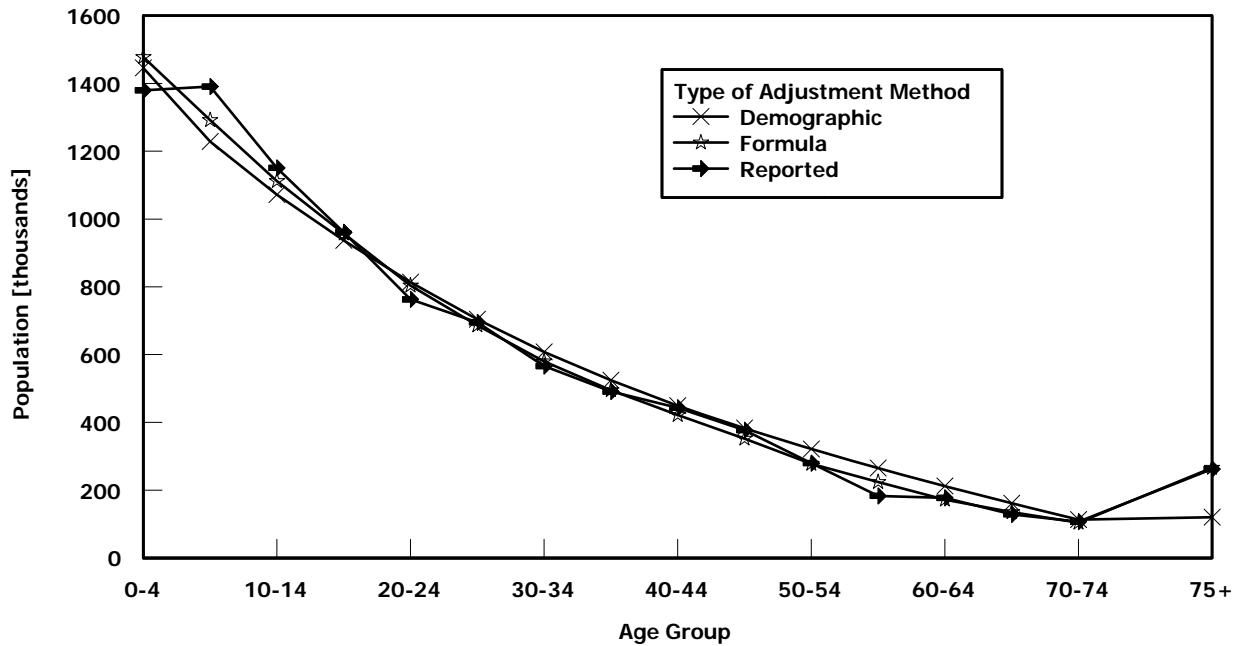
As noted earlier, the ratios are tools for carrying out a two dimensional evaluation of the consistency of census data. A combination of the two can be converted into an index of data quality. The United Nations has designed a joint index known as “age-sex accuracy index” (computed as three times the sex ratio score plus the male and female age ratio scores). Experience indicates that if the index is less than 20, then the age-sex structure could be considered as accurate; inaccurate if the joint score index is between 20 and 40 but the data are still usable with adjustment, and highly inaccurate if the value of the index is over 40. The computed indices presented in Table 2.1 show that the 1960 and 1970 data on age-sex structures are highly inaccurate, while the 1984 and 2000 censuses data may be regarded as inaccurate though the data could still be used with some amount of adjustment. The series, however, underscores improvement in the quality of the population age-sex reporting with the index declining from 53 in 1960 to 36 in 2000. Notwithstanding, there is still room for substantial improvement in the collection of age data.

### **2.3 Adjustment of the Age Distribution**

The results of the evaluation exercise show quite clearly that the reported age distributions of the enumerated populations contain age-misreporting and digit preference errors that can be removed or, at least, reduced by some adjusting instruments. The irregularities in the age structure are considerable and one needs a “Strong” adjusting method (formula or algebraic procedure) that would remove the major distortions in the age structure. The following are the essential features of the method employed: the census population is combined into 10-years age groups and those from the age 10 to 69 are smoothed by averaging the consecutive 10 year age groups with specific weights. The total population of the smoothed age groups is then adjusted proportionally to the census total. Finally, the smoothed 10-year age groups are subdivided into 5-year age groups using Arriaga’s formula (1968). A demographic procedure was also used to adjust the 2000 age structure by fitting an appropriate model population to the reported age distribution. The results are presented in Figure 2.10 and Figure 2.11.

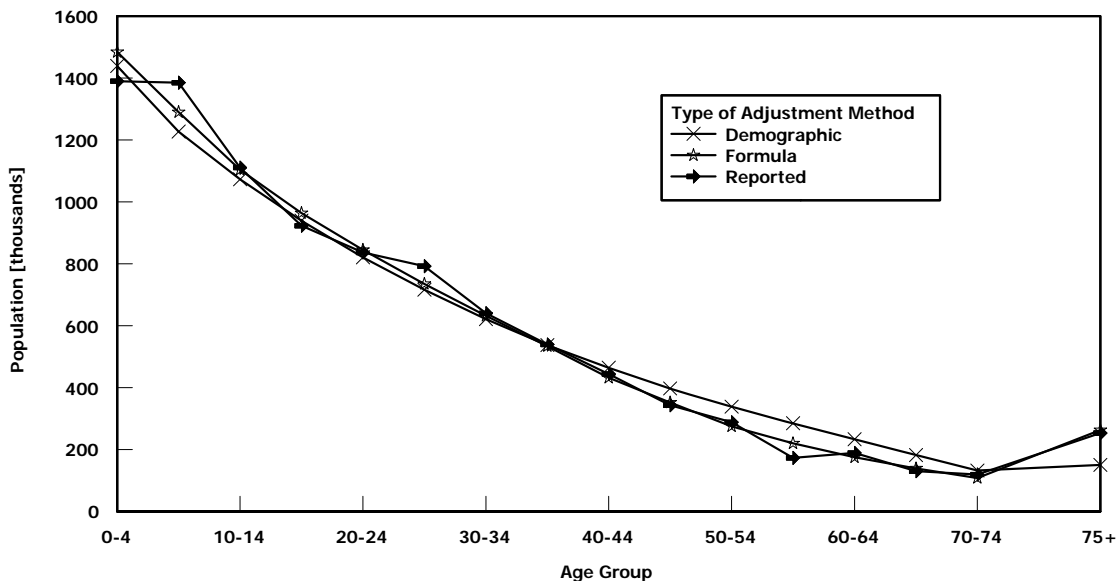
An estimated gross reproduction rate (GRR) of 2.4 (based on the 1998 DHS data) and life expectancy at birth of 57.2 years (United Nations, 2002 Revision) provided the empirical basis for identifying the most suitable model. The inter-censal rate of growth of 2.7 per cent per annum yielded a model that tended to exaggerate the populations in the 0-4 years, 5-9 years and 10-14 years age groups and did not therefore indicate the slow movement through the fertility transition. The model interpolated on the basis of GRR appears to be a more plausible one.

Figure 2.10: Reported and Adjusted 2000 Male Population by Age



It is important to note that at a given level of mortality, only fertility affects the age structure of a stable population in so far as it affects the intrinsic rate of natural increase. The reported rate of growth rose from 2.59 in the period 1970 -1984 to 2.69 per cent per annum between 1984 and 2000. In view of the recent incipient decline in fertility, the observed increase in the rate of growth may be explained, among other things, in terms of different levels of census completeness.

Figure 2.11 Reported and Adjusted 2000 Female Population by Age



One of the useful and practical tests of stability is the absence of substantial change in the age structure and of inter-censal rate of increase in three consecutive censuses. Barring errors inherent in the raw data, the rate of growth and the age structure do not seem to have undergone any substantial changes. For instance, the proportion of the population under 15 years has not been less than 40 per cent since 1960. What the population has not experienced yet are major swings in fertility producing one or more consecutive small five-year cohorts and sustained trends in mortality. The assumption of approximate stability may not therefore be far fetched.

It is observed from the diagrams that both techniques yield practically similar results at the middle section of the age distribution (i.e. 15-49 years in the case of the males and 10-44 years in the case of the females), while the demographic method provides a much better fit at the older ages and most likely at the younger ages (0-4 years age group). The algebraic procedure also tends to adjust upwards the tail ends of the age distributions. This is probably due to the fact that the age range 10-70 years is smoothed and the age groups at the ends (0-4 years, 5-9 years and 70+ years are derived by proportionate adjustment to the census total.

## APPENDIX

**Table A2.1: Reported and Adjusted Female Population by Age: 2000**

Age	Reported	Adjusted*	Adjusted**
0-4	1,389,651	1,484,385	1,438,912
5-9	1,384,554	1,289,820	1,226,801
10-14	1,111,085	1,104,320	1,072,973
15-19	922,591	964,156	939,211
20-24	837,769	845,052	820,734
25-29	791,805	735,301	715,634
30-34	640,370	631,981	621,045
35-39	538,901	533,928	536,965
40-44	443,647	432,415	464,351
45-49	343,042	352,394	397,468
50-54	288,419	274,745	338,230
55-59	172,999	220,487	284,725
60-64	189,004	175,207	233,130
65-69	129,619	139,265	182,492
70-74	118,645	107,949	131,853
75-79	70,562	81,258	84,081
80+	182,034	182,034	66,092
Total	9,554,697	9,554,697	9,554,697

\* Adjusted by algebraic method; \*\* Adjusted by demographic method;

**Table A2.2: Reported and Adjusted Male Population by Age: 2000**

Age	Reported	Adjusted*	Adjusted**
0-4	1,379,770	1,477,961	1,445,741
5-9	1,390,652	1,292,461	1,228,646
10-14	1,151,131	1,112,044	1,072,375
15-19	961,162	957,048	936,691
20-24	763,051	803,557	814,107
25-29	695,494	686,220	703,687
30-34	566,439	580,110	608,240
35-39	490,864	495,304	524,022
40-44	443,284	422,061	449,162
45-49	377,315	351,697	382,723
50-54	279,950	278,746	320,964
55-59	182,843	223,654	264,819
60-64	177,347	172,446	212,417
65-69	129,090	135,082	160,951
70-74	106,513	103,395	113,226
75-79	74,268	77,386	70,182
80+	188,209	188,209	49,429
Total	9,357,382	9,357,382	9,357,382

\* Adjusted by algebraic method, \*\* Adjusted by demographic method

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## CHAPTER 3: HOUSEHOLD SIZE, COMPOSITION AND DISTRIBUTION

### 3.1 Introduction

Living arrangements among societal groups are largely influenced by socio-cultural factors. Marriage, family and household formation are closely related to the type of socio-cultural practices of the society. The family system, whether extended or nuclear, depicts the type of kinship ties that exists in a particular society.

In Ghana, the structure, composition and size of households differ among the various ethnic groups based on the prevailing kinship, and the two broad descent and inheritance systems, i.e., the patrilineal and matrilineal. In the patrilineal system, inheritance and descent are traced from the father's line and household heads are mostly men. In the matrilineal systems which trace descent from the mother's line, a large proportion of household heads are women.

The matrilineal system, which is peculiar to Akan groups, also allows for couples to live apart and grants economic and legal autonomy to females. The Ga-Dangme, a patrilineal group also supports wives living separately from their husbands. By contrast, among the Ewes, a patrilineal group, the woman at marriage goes to live with the husband. Among the Mole Dagbon, another patrilineal ethnic group, the wife lives in her father-in-law's house. These different cultural systems influence the nature and characteristics of the household structure, size and composition in the various parts of the country.

### 3.2 Objectives and Scope of Analysis

The chapter sets out to changes in the structure, size, composition, headships and other characteristics of households and what trends could be identified from 1960 to 2000, using data from the various censuses. The proportion of the population enumerated in households in the 1960, 1970, 1984 and 2000 censuses is close to 100 per cent.

### 3.3 Definition of Concepts

The concept of household, as has been widely used in censuses and surveys in many countries, is used to identify and group persons defined as the unit of enumeration. Except in 1960, when the concept of housing unit was used, all other subsequent censuses and surveys in Ghana focus on the household as the unit of enumeration. This is because expenditures (and to some extent incomes) are derived for households rather than for housing units whose occupants are not necessarily related. The adopted working definition of a household therefore is "a person or group of persons living together in the same house or compound, sharing the same housekeeping arrangements and being catered for as one unit". Grouping people into households on the basis of varied living arrangements on cultural and ethnic lines gives rise to several forms of households, namely:

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This chapter was contributed by Mrs. Edith K. Mote.

- a man, his wife and children with other relative(s) or house-help living with them;
- in large family houses with more than two generations of people, a common catering arrangement is employed as the underlying principle in breaking people up into households when all other activities are carried out as a unit;
- a lodger who sleeps and eats at least one meal a day with the household is considered a member of that household;
- two or more unrelated persons living together in one flat or in one room are considered as constituting a household only if they have a common catering arrangement.

### **3.4 Data Sources and Limitations**

Data for this analysis are mostly from the 1960, 1970, 1984 and 2000 censuses. Where there are gaps, data generated from national surveys within the period have been used as supplement. Some volumes of previous censuses relating to households are not published; hence, trend analysis with respect to economic characteristics of household heads is limited. Secondly, since the de facto concept of households was used in the censuses, the size of household refers to the total number of usual members and visitors present in the household on census night, and excludes usual members who were absent from the house on census night. In this case some element of omission could occur, as temporary household heads may not have details of visitors or of absent usual members.

### **3.5 Household Distribution**

The distribution of households from the censuses shows that Greater Accra, Eastern and Ashanti are the regions with the highest proportions of total households in the country between 1970 and 2000. Northern and Upper West, on the other hand, are the regions with the least proportions of total households within the same period (Table 3.1).

Ashanti is the region that has, over time, maintained a relatively constant proportion of about 18 per cent as its share of the total. The share of the total number of households appears to have declined for all other regions from 1960 to 2000, except for Western, Greater Accra and, to some extent, Northern. Indeed, the share for Greater Accra has to increase, from 9.0 per cent in 1960 through 14.5 per cent in 1984 to 16.9 per cent in 2000.

Table 3.1 also shows that all regions have experienced increases in the number of households. The increase between 1960/1970 and 1970/1984 inter-censal periods appears to be more substantial for all regions than between 1970/1984 and 1984/2000 inter-censal periods. Western, Greater Accra, Ashanti and Northern are the fastest grouping regions. Household formation is particularly significant for Northern and it may probably be the result of better operationalization and understanding of the household concept by enumerators. Indeed the enumerators training laid emphasis on how to identify households in the three northern regions and other communities where there is the tendency to regard the patriarch in big compounds with separate families as the head of the 'household'.

**Table 3.1: Share and Rate of Increase of Households by Region**

Region	Share of Households				Rate of Increase		
	1960	1970	1984	2000	1960-1970	1970-1984	1984-2000
Western	23.3 <sup>1</sup>	10.5	10.6	11.1	10.5 <sup>1</sup>	39.6	56.2
Central	---	11.4	12.0	9.9	---	45.6	23.1
Greater Accra	9.0	12.0	14.5	16.9	56.8	67.1	73.9
Volta	11.1	10.5	10.1	9.3	11.2	33.0	37.4
Eastern	15.5	14.5	13.8	12.3	10.0	31.6	33.0
Ashanti	18.4	18.5	17.7	18.5	18.2	32.3	55.9
Brong Ahafo	10.1	9.5	9.5	9.3	10.6	38.3	46.1
Northern	12.6 <sup>2</sup>	5.7	5.4	6.6	22.3 <sup>2</sup>	31.0 <sup>2</sup>	82.4
Upper East	---	7.4 <sup>3</sup>	6.4 <sup>3</sup>	3.9	---	---	42.2 <sup>3</sup>
Upper West	---	---	---	2.2	---	---	---
Total	100.0	100.0	100.0	100.0	17.6	38.3	49.2
N	1,525,240	1,793,580	2,480,368	3,701,241			

Source: Compiled from 1960, 1970, 1984 & 2000 Population Censuses of Ghana  
 1960 & 1970 Demographic Characteristics Vol. 3  
 1984: Demographic & Economic Characteristics Report, 1987  
 2000: Compiled from unpublished 2000 Census results

- Notes 1. includes Central  
 2. includes Upper East and Upper West  
 3. includes Upper West  
 ---- Not applicable

The distribution of households by place of residence also reveals several changes that have taken place. Overall, the rural share of total households has declined from 67.3 per cent in 1970 to 52.8 per cent in 2000 (Table 3.2), with faster rate of increase in the formation of urban households than rural households. The trend mirrors changes in urbanization and, is probably why the majority of households in all regions, except Greater Accra and Ashanti, are in rural areas.

**Table 3.2: Households by Region and Locality of Residence**

Region	Urban			Rural		
	1970	1984	2000	1970	1984	2000
Western	28.6	24.4	38.8	71.4	75.6	61.2
Central	30.1	26.7	38.7	69.9	73.3	61.3
Greater Accra	88.5	85.7	88.4	11.5	14.3	11.6
Volta	16.6	21.9	28.5	83.4	78.1	71.5
Eastern	27.4	31.2	37.9	72.6	68.8	62.1
Ashanti	21.6	34.4	53.3	78.4	65.6	46.7
Brong Ahafo	22.8	29.2	40.1	77.2	70.8	59.1
Northern	23.8	28.5	29.6	76.2	71.5	70.4
Upper East	8.2 <sup>1</sup>	15.0	17.3	91.8 <sup>1</sup>	85.0	82.7
Upper West	---	13.5	21.6	---	86.5	78.4
All Regions	32.7	36.0	47.2	67.3	64.0	52.8

Source: Compiled from 1960, 1970, 1984 & 2000 Population Censuses of Ghana  
 1960 & 1970 Demographic Characteristics Vol. 3; 1984: Demographic & Economic Characteristics Report, 1987;  
 2000: Compiled from unpublished 2000 Census data/

- Note:  
 1. includes Upper West  
 ---- Not applicable



### 3.6 Household Size

The number of people who constitute a household can provide useful information for the use of policy makers in ensuring maximum allocation of resources. Policies on housing facilities could also factor in changes in the mean household size over time to direct programmes.

Over the period, the average household size in both urban and rural areas is much higher in the three northern regions than elsewhere (table 3.3). Nationally, the average household size has increased gradually from 4.2 in 1960 to 5.1 in 2000. This trend is true for both urban (from 3.6 to 4.7) and rural areas (from 4.6 in 1960 to 5.4 in 2000). Western, Greater Accra, Ashanti and Brong Ahafo also reflect this gradual increase in household size in both urban and rural areas over the four decades; in the rest of the regions no clear pattern is evident.

**Table 3.3: Average Household Size by Region, Rural and Urban, Ghana**

Region	Total Country				Urban				Rural			
	1960	1970	1984	2000	1960	1970	1984	2000	1960	1970	1984	2000
Western	3.8 <sup>1</sup>	4.0	4.4	4.7	3.5 <sup>1</sup>	3.7	4.0	4.4	4.0 <sup>1</sup>	4.1	4.5	4.9
Central	---	4.3	3.8	4.4	---	4.0	4.0	4.2	---	4.4	3.7	4.4
Greater Accra	3.4	3.8	3.9	4.6	3.3	3.7	3.8	4.6	4.2	4.7	4.6	4.9
Volta	4.5	5.0	4.8	4.7	4.0	4.6	4.3	4.5	4.7	5.1	4.9	4.8
Eastern	4.6	4.8	4.8	4.6	3.8	4.1	4.2	4.2	4.9	5.0	5.1	4.9
Ashanti	3.9	4.4	4.8	5.3	3.5	4.5	4.7	5.1	4.0	4.0	4.9	5.5
Brong Ahafo	3.8	4.5	5.1	5.3	3.5	4.5	4.5	4.8	3.8	4.5	5.3	5.6
Northern	6.7 <sup>2</sup>	6.5	8.7	7.4	5.1 <sup>2</sup>	5.5	7.6	6.7	6.8 <sup>2</sup>	6.8	9.1	7.7
Upper East	---	6.5 <sup>3</sup>	7.5 <sup>3</sup>	7.2	---	5.4 <sup>3</sup>	6.1 <sup>3</sup>	5.8	---	6.6 <sup>3</sup>	7.7 <sup>3</sup>	6.5
Upper West	---	---	---	6.4	---	---	---	5.8	---	---	---	7.5
All Regions	4.2	4.7	4.9	5.1	3.6	4.1	4.3	4.7	4.6	5.0	5.2	5.4

Source: Compiled from 1960, 1970, 1984 & 2000 Population Censuses of Ghana  
 1960 & 1970 Demographic Characteristics Vol. 3  
 1984: Demographic & Economic Characteristics Report, 1987  
 2000: Compiled from unpublished 2000 Census results

Notes:  
 1. Includes Central  
 2. Includes Upper East and Upper West  
 3. Includes Upper West  
 ---- Not applicable

Table 3.4 shows that single person households have declined from 21 per cent in 1970 to 13 per cent in 2000. This decline is even sharper in urban areas (almost 50%), from 28 per cent in 1970 to 15 per cent in 2000. Changes in 2 or 3-person households are insignificant. The share of households of 4 or more persons, however, increased between 1970 and 2000 more in the urban areas than in rural areas.

**Table 3.4: Households by Size and Locality of Residence**

Household Size	Total Country			Urban			Rural		
	1970	1984	2000	1970	1984	2000	1970	1984	2000
1 Person	21.2	19.8	12.6	27.6	24.1	14.6	18.1	17.5	10.8
2 Persons	12.4	12.0	11.4	14.6	13.7	13.1	11.4	11.0	10.0
3 Persons	12.4	11.8	12.4	12.4	12.7	13.4	12.0	11.4	11.5
4 Persons	11.4	11.4	12.7	10.7	11.7	13.1	11.8	11.3	12.4
5 Persons	10.2	10.3	11.9	9.1	10.0	11.8	10.7	10.5	12.1
6 Persons	8.4	8.6	10.2	7.1	8.0	9.6	9.1	9.1	10.8
7 Persons	6.4	6.7	8.0	5.4	5.9	7.3	7.1	7.3	8.7
8 Persons	4.8	5.1	6.0	3.8	4.2	5.2	5.3	5.6	6.7
9 Persons	3.4	3.6	4.7	2.7	2.8	4.0	3.8	4.1	5.3
10+ Persons	9.4	10.7	9.8	6.6	6.9	7.8	10.7	12.2	11.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from 1960, 1970, 1984 & 2000 Population Censuses of Ghana  
1960 & 1970 Demographic Characteristics Vol. 3  
1984: Demographic & Economic Characteristics Report, 1987  
2000: Compiled from unpublished 2000 Census results

Information on the size of households among regions also shows changes that have taken place over the 1960-2000 period, but there are some predominant features that have remained unchanged over time. The trend observed at the national level appears to reflect in all regions: significant decline in single-person households, no substantial changes in 2 and 3 person households; and steady increases in households with 4 persons or more. The changes, where they occur, are more pronounced between 1984 and 2000 than between 1970 and 1984 (Table 3.5).

In spite of these trends, about two-thirds of households in Western (65%), Central (70%), Greater Accra (68%), Volta (66%) and Eastern (67%) 5 persons in 2000; while Ashanti (57%) and Brong Ahafo (58%) have a majority of households in this bracket. On the other hand, growth of households continues to be a feature for the three northern regions, where households of 6 persons or more predominate (62%, Northern; 52%, Upper East, and 61%, Upper West) in 2000, particularly households of 10 persons or more (Table 3.5).

**Table 3.5: Households by Size and Region**

Household Size	Western			Central			Greater Accra			Volta			Eastern		
	1970	1984	2000	1970	1984	2000	1970	1984	2000	1970	1984	2000	1970	1984	2000
1 Person	26.2	20.8	14.3	22.2	32.1	17.2	30.2	26.9	13.1	17.5	16.9	14.0	22.2	18.9	15.3
2 Persons	13.9	13.0	12.2	13.5	14.2	13.7	15.3	14.1	13.7	11.4	12.6	12.6	11.3	11.7	12.9
3 Persons	12.8	13.3	13.1	13.2	11.1	13.9	12.3	12.9	14.4	12.0	13.1	13.6	10.9	11.9	13.3
4 Persons	11.6	12.3	13.4	12.2	10.2	13.3	10.4	11.8	14.0	11.7	12.6	13.4	10.6	11.6	13.2
5 Persons	9.8	10.8	12.3	10.6	8.7	11.9	8.4	9.9	12.4	10.8	11.0	12.2	9.9	10.6	12.1
6 Persons	7.7	8.6	10.3	8.3	7.0	9.7	6.6	7.6	9.8	9.3	9.1	10.0	8.7	9.0	10.0
7 Persons	5.6	6.6	8.0	6.2	5.1	7.1	4.9	5.5	7.1	7.5	7.0	7.4	7.0	7.2	7.5
8 Persons	3.9	4.7	5.7	4.3	3.6	4.8	3.5	3.7	5.0	5.6	5.1	5.3	5.4	5.5	5.3
9 Persons	2.7	3.2	4.2	2.9	2.5	3.1	2.4	2.5	3.7	3.9	3.6	3.9	3.8	3.9	3.7
10+ Persons	5.8	6.7	6.5	6.6	5.5	5.3	6.0	5.1	6.8	10.3	9.0	7.6	10.2	9.7	6.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Household Size	Ashanti			Brong Ahafo			Northern			Upper East			Upper West		
	1970	1984	2000	1970	1984	2000	1970	1984	2000	1970*	1984*	2000	1970	1984	2000
1 Person	22.3	18.2	11.5	15.6	16.8	11.4	9.4	7.9	6.2	6.4	5.6	5.2	.	.	4.9
2 Persons	13.1	12.4	10.3	9.1	11.3	10.4	7.5	5.7	5.8	8.7	6.3	7.2	.	.	5.8
3 Persons	12.5	12.6	11.1	9.2	12.2	12.0	9.6	7.1	7.7	11.6	8.5	10.0	.	.	7.9
4 Persons	11.7	12.0	12.0	8.6	11.7	12.4	10.5	8.4	8.8	13.0	10.1	12.6	.	.	9.3
5 Persons	10.3	10.8	11.8	7.5	10.7	12.0	10.2	8.8	9.8	12.1	10.9	13.0	.	.	10.6
6 Persons	8.6	9.2	10.7	6.1	9.3	10.7	9.5	8.7	9.6	10.5	10.4	12.1	.	.	10.6
7 Persons	6.5	7.2	9.0	4.5	7.5	8.6	7.8	7.7	8.8	8.3	9.1	9.7	.	.	10.0
8 Persons	4.7	5.4	7.4	3.7	5.7	6.6	6.8	6.8	7.9	6.4	7.4	7.4	.	.	8.6
9 Persons	3.2	3.8	6.2	2.2	4.0	5.1	5.4	5.6	7.1	5.0	6.2	5.9	.	.	7.6
10+ Persons	7.1	8.4	10.0	5.5	10.8	10.8	23.3	33.3	28.3	18.0	25.5	16.9	.	.	24.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	.	.	100.0

Source: Compiled from 1960, 1970, 1984 & 2000 Population Censuses of Ghana  
 1960 & 1970 Demographic Characteristics Vol. 3  
 1984: Demographic & Economic Characteristics Report, 1987  
 2000: Compiled from Unpublished 2000 Census.  
 Note: \* includes Upper West  
 ... Not applicable

Table 3.6 shows that the average number of adult members (aged 20 years and older) per household has increased from 2.1 in 1960 to 2.5 in 2000, an indication that household members do not simply leave to form their own households as they get older.

**Table 3.6: Average Number of Adults (aged 20 years and older) per Household by Region**

Region	Average Number of Adults			
	1960	1970	1984	2000
Western	1.7 <sup>1</sup>	1.9	2.0	2.3
Central	---	2.0	1.7	2.1
Greater Accra	1.9	2.1	1.9	2.6
Volta	2.1	1.8	2.2	2.3
Eastern	2.1	2.1	2.2	2.2
Ashanti	1.8	1.8	2.1	2.6
Brong Ahafo	1.8	3.2	2.2	2.5
Northern	3.4 <sup>2</sup>	3.1 <sup>2</sup>	3.7	3.3
Upper East	---	---	3.5 <sup>3</sup>	3.0
Upper West	---	---	---	3.3
<b>Total</b>	<b>2.1</b>	<b>2.8</b>	<b>2.2</b>	<b>2.5</b>

Source: Compiled from 1960, 1970, 1984 and 2000 Censuses

1. Includes Central
  2. Includes Upper East and Upper West
  3. Includes Upper West
- Not applicable

### 3.7 Household Headship

It is generally assumed that the head of the household sees to the day to day running of the household and ensures that the needs and well being of members are addressed. It is based on this consideration that heads of households are considered key when analyzing issues at the micro level. The age, sex and socio-economic characteristics (education, occupation, employment status) of heads of household are therefore analysed to help our understanding of household dynamics and standard of living of household members.

Table 3.7 shows that single-person households are predominantly male. While the proportion of male single-person households has declined substantially, particularly between 1984 and 2000, the proportion of male single-person households (13.5%) is still higher than that of females (12.2%). The proportion of females heading households of size 2-6 is higher than that of males and this is true for all periods. This pattern also runs through both urban and rural localities. Larger households of sizes from 7 persons have higher proportions of male than female heads.

**Table 3.7: Household Size by Sex of Head, Urban/Rural**

Sex of Head	All Sizes	Number of people in household										
		1	2	3	4	5	6	7	8	9	10-14	15+
<b>1970</b>												
Total Country												
Male	100.0	23.7	11.0	10.7	10.5	9.7	8.4	6.7	5.1	3.7	7.8	2.7
Female	100.0	15.1	15.9	15.6	13.9	11.4	8.7	6.2	4.2	2.8	5.1	1.1
Urban												
Male	100.0	32.4	13.7	11.1	9.6	8.2	6.7	5.2	3.8	2.7	5.0	1.6
Female	100.0	17.1	16.3	15.1	13.1	10.8	8.2	5.9	4.0	2.8	5.2	1.5
Rural												
Male	100.0	19.6	9.7	10.5	10.9	10.3	9.2	7.4	5.7	4.2	9.2	3.3
Female	100.0	14.0	15.7	15.8	14.4	11.8	8.9	6.4	4.2	2.8	5.0	1.0
<b>1984</b>												
Total Country												
Male	100.0	21.6	10.5	10.5	10.4	9.8	8.6	7.1	5.4	4.0	8.7	3.4
Female	100.0	15.3	15.3	15.3	13.7	11.4	8.8	6.3	4.4	3.0	5.4	1.1
Urban												
Male	100.0	28.6	12.4	11.2	10.5	9.3	7.7	5.9	4.2	2.8	5.3	2.1
Female	100.0	16.2	16.0	15.4	13.8	11.1	8.4	5.9	4.1	2.8	5.1	1.2
Rural												
Male	100.0	18.3	9.5	10.1	10.3	10.1	9.1	7.6	6.0	4.5	10.4	4.1
Female	100.0	15.4	14.4	14.6	13.7	11.6	9.3	6.5	4.7	3.2	5.6	1.0
<b>2000</b>												
Total Country												
Male	100.0	13.5	10.1	11.0	11.9	11.8	10.6	8.5	6.5	5.0	9.2	1.9
Female	100.0	12.2	14.4	15.0	13.9	11.8	9.2	6.9	5.1	4.0	6.5	1.0
Urban												
Male	100.0	16.5	12.3	12.2	12.4	11.7	9.8	7.5	5.5	4.1	6.7	1.3
Female	100.0	12.9	14.8	15.3	13.9	11.6	8.9	6.6	4.8	3.8	6.4	1.0
Rural												
Male	100.0	11.0	8.4	10.0	11.5	11.9	11.1	9.4	7.3	5.8	11.2	2.4
Female	100.0	11.4	13.9	14.8	13.9	12.3	9.6	7.1	5.3	4.1	6.6	1.0

Source: Compiled from 1970, 1984 and 2000 Population Censuses of Ghana.

Census data for the past four decades indicate that households have been headed predominantly by males (Table 3.8). However, the proportion of households headed by males has reduced slightly from 71.4 per cent in 1970 to 68.7 per cent in 2000, the decline being relatively steeper in urban (from 69.1% to 65.4%) than rural areas (from 72.4% to 71.6%). In spite of the gains in headship by females, socio-cultural factors may explain why household heads are predominantly male.

These figures follow similar findings from the 1997 Core Welfare Indicators Questionnaire (CWIQ) survey and 1998 Ghana Living Standards Survey (GLSS). For instance, the 1997 CWIQ survey indicated that about two thirds (64.8%) of households in the country were headed by males, while slightly more than a third (35.2%) are headed by females.

The decline in male-headed households (between 1970 and 2000) is more pronounced in Central and Volta, while there is a slight decline in all other regions except the three northern regions. It is worth noting that Northern, Upper East and Upper West have a significantly higher proportion of male headed households than elsewhere. The data suggest that while it is mostly men who are heads of household, more females assumed the responsibility as heads of households since the 1960s, but in Northern, Upper East and Upper West the proportion of female headed households has remained below 25 per cent.

**Table 3.8: Household Heads (15 years and older) by Sex and Place of Residence**

Place of Residence	1960		1970		1984		2000	
	Male	Female	Male	Female	Male	Female	Male	Female
<u>Locality</u>								
Total	74.3	25.7	71.4	28.6	68.1	31.9	68.7	31.3
Urban	72.3	27.7	69.1	30.9	64.2	35.8	65.4	34.6
Rural	75.0	25.0	72.4	27.6	70.3	29.7	71.6	28.4
<u>Region</u>								
Western	72.0 <sup>1</sup>	28.0 <sup>1</sup>	75.9	24.1	72.6	27.4	72.4	27.6
Central	---	---	60.7	39.3	58.7	41.3	61.2	38.8
Greater Accra	74.7	25.3	74.6	25.4	54.0	46.0	68.1	31.9
Volta	71.6	28.4	67.7	32.3	63.3	36.7	62.9	37.1
Eastern	71.9	28.1	68.2	31.8	66.6	33.4	66.1	33.9
Ashanti	68.1	31.9	65.3	34.7	63.0	37.0	65.4	34.6
Brong Ahafo	72.8	27.2	71.5	28.5	69.7	30.9	70.1	29.9
Northern	94.6 <sup>2</sup>	6.4 <sup>2</sup>	90.6	9.4	88.8	11.2	85.9	14.1
Upper East	---	---	87.7 <sup>3</sup>	12.8 <sup>3</sup>	76.2	12.8	77.8	22.2
Upper West	---	---	---	---	86.2	13.8	81.7	18.3

Source: Compiled from 1960, 1970, 1984 & 2000 census reports, Statistical Service, Accra

1. includes Central

2. includes Upper East and Upper West.

3. includes Upper West

--- Not applicable

An examination of headship rates by sex and age (Table 3.9) shows that at all ages, in both urban and rural areas, the proportion of males who are heads of household is higher than that of females; this pattern runs through all the periods under consideration.

For both sexes, urban and rural headship rates increase with age. There appears, however, that headship rates have declined from 1970 to 2000 for both males and females, an indication of a slow-down in household formation. Prior to 2000, the majority of females 50 years and older and in urban areas were heads of household, but this has dropped to about 45 per cent in 2000. Another important feature is that female headship rates are much higher in urban than rural areas, irrespective of age and period of assessment. Figures A3.1, A3.2 and A3.3 in the Appendix give a graphical presentation of the results.

**Table 3 9: Headship Rates by Age and Sex, 1970, 1984 & 2000**

Age Group	Total		Urban		Rural	
	Male	Female	Male	Female	Male	Female
<b>1970</b>						
15-19	5.0	3.4	6.5	4.1	4.4	3.0
20 – 24	31.1	11.3	38.7	16.0	26.5	9.1
25 – 29	59.3	14.4	70.3	21.6	52.6	11.2
30 – 34	72.9	19.2	82.0	28.6	68.0	15.7
35 – 39	80.5	23.3	86.8	33.6	77.6	19.4
40 – 44	83.9	29.1	88.2	41.8	82.3	24.8
45 – 49	87.1	34.0	89.6	46.7	86.0	30.0
50 – 54	88.2	39.6	89.4	52.2	87.9	35.6
55 – 59	90.0	43.8	91.1	55.5	89.8	40.1
60 – 64	89.5	46.4	89.2	58.6	89.5	42.8
65+	87.4	45.5	87.1	55.6	87.4	42.5
All Ages (15+)	59.5	19.0	62.8	26.7	58.1	18.7
<b>1984</b>						
15-19	3.3	2.3	3.9	2.8	3.0	1.8
20 – 24	20.7	9.2	23.3	12.9	19.3	7.2
25 – 29	47.5	15.2	55.1	22.0	43.5	11.4
30 – 34	65.1	19.6	74.0	28.1	60.4	15.3
35 – 39	74.7	24.2	82.2	33.6	70.6	19.4
40 – 44	80.2	29.4	86.0	40.4	77.2	24.3
45 – 49	85.2	35.2	89.2	46.7	83.2	30.2
50 – 54	86.8	41.0	89.6	53.3	85.6	36.1
55 – 59	89.1	47.0	90.9	58.2	88.3	42.5
60 – 64	88.7	48.9	89.2	60.7	88.5	44.7
65+	88.7	49.2	87.6	57.9	88.9	45.9
All Ages (15+)	52.3	21.4	55.2	26.8	50.9	18.8
<b>2000</b>						
15-19	2.8	1.8	3.2	2.1	2.4	1.5
20 – 24	15.8	7.4	15.8	9.0	15.8	5.7
25 – 29	38.4	12.6	38.4	16.1	38.5	9.3
30 – 34	54.7	16.4	55.7	20.8	53.7	12.4
35 – 39	64.0	20.4	64.5	25.1	63.6	16.1
40 – 44	69.3	26.7	69.2	31.9	69.4	22.4
45 – 49	72.1	31.4	71.2	36.9	72.9	27.1
50 – 54	74.0	34.9	73.7	40.8	74.3	30.8
55 – 59	72.4	39.2	70.5	44.6	73.9	35.1
60 – 64	73.9	43.1	71.5	49.3	75.5	39.2
65+	59.0	43.1	50.2	45.3	65.0	41.7
All Ages (15+)	43.9	19.1	42.0	21.2	45.5	17.3

Source: Compiled from 1970, 1984 and 2000 Population Censuses of Ghana

1970: Demographic Characteristics Vol. 3

1984: Compiled from Unpublished 1984 Vol. 3.

### 3.8 Household Composition

The household typically consists of a head, with or without a spouse, children, in-laws, parents, grandchildren and other relatives (Table 3.10). Table 3.10 shows that the proportion of male heads of households is more than twice the proportion of female heads for all the years. There is a drop in the proportion of female spouses from 21.5 per cent to 17.2 per cent over the period, while the proportion of female heads has remained almost the same over the period.

On the other hand, the proportion of other relatives has increased for both males and females over the period and may indicate changes occurring in marital status of heads/spouses, in that in the event of a break in marriage (divorced and widowed), the partner may retire to live in the family house or with a sibling. The decline in the proportions of children of head in both male and female headed households may also reflect the practice of fostering, by which children may go to live with siblings or other relatives.

**Table 3.10: Household Composition by Sex and Status**

Household Composition	Males			Females		
	1970	1984	2000	1970	1984	2000
Head	30.7	28.0	25.7	11.2	11.9	11.4
Temporary Head	0.2	0.2	0.5	0.8	0.6	1.9
Spouse	0.4	0.6	1.5	21.5	20.5	17.2
Child	44.5	47.0	39.0	40.5	41.1	35.9
Son/Daughter-in-law	-	0.1	0.8	1.1	1.7	1.5
Parent/Parent-in-law	0.2	0.5	0.3	2.0	1.9	1.3
Grand Child	8.2	9.7	7.0	8.6	9.8	7.1
Other Relatives	13.5	12.6	22.4	13.0	11.8	21.1
Non relative	2.3	1.3	2.8	1.3	0.7	2.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: 1970, 1984 and 2000 censuses.

Table 3.11 gives the composition of household members by urban/rural residence. Children of the head again constitute the highest proportion of the household in all years, irrespective of the locality of residence or sex of household head.

**Table 3.11: Household Composition by Sex and Locality of Residence**

Household Composition	Males			Females		
	1970	1984	2000	1970	1984	2000
<b>Urban</b>						
Head	34.4	30.9	26.7	14.2	15.5	13.4
Temporary Head	0.7	0.2	0.6	0.7	0.6	2.0
Spouse	0.4	0.6	1.8	18.5	16.9	15.2
Child	40.6	45.4	34.8	39.7	41.7	33.6
Son/Daughter-in-law	-	0.1	0.9	0.5	0.7	1.3
Parent/Parent-in-law	0.1	0.5	0.3	1.2	1.5	1.1
Grand Child	7.4	9.2	6.3	8.2	9.0	6.6
Other Relatives	13.5	11.7	25.3	14.3	12.4	23.4
Non Relative	2.9	1.4	3.3	2.7	1.7	3.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Rural</b>						
Head	29.1	26.4	24.6	10.1	10.3	9.8
Temporary Head	0.2	0.2	0.5	0.8	0.4	1.8
Spouse	0.3	0.6	1.2	22.7	20.6	18.8
Child	45.9	47.8	42.4	40.2	40.0	37.7
Son/Daughter-in-law	0.1	0.1	0.8	1.4	2.0	1.8
Parent/Parent-in-law	0.2	0.6	0.3	2.4	4.6	1.5
Grand Child	8.5	10.0	7.5	8.7	8.9	7.5
Other Relatives	13.6	13.1	20.2	12.9	12.7	19.2
Non Relative	2.1	1.2	2.5	0.8	0.5	1.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: 1970, 1984 and 2000 censuses.



In general, the proportions of children and grandchildren of the head, which form the highest proportion of the household composition, have declined between 1970 and 2000 for both urban and rural heads. The proportion of other relatives, on the other hand, increased for all households between 1970 and 2000.

### 3.9 Marital Status of Household Heads

Table 3.12 shows that while the proportion of never married male heads has declined from 14.5 per cent to 11.2 per cent, that of female heads has increased from 3.1 per cent in 1960 to 9.2 per cent in 2000. The observed pattern is true for urban and rural households.

Most of the households are headed by currently married persons; in general, the proportion of currently married male heads has increased while it has declined for female heads. A significantly higher proportion of households are headed by divorced and widowed females than males and the trend seems to be increasing. The higher proportion of females observed to be widowed or divorced may be due to higher mortality for males as well as the wide gap in age at first marriage between males and females. Higher remarriages common among men in the event of a death of a spouse or divorce may also be a plausible reason for the lower proportions of divorced and widowed males.

**Table 3.12 Marital Status of Household Heads (15 years and older) by Sex and Locality**

Marital Status	Total				Urban				Rural			
	Male		Female		Male		Female		Male		Female	
	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000
Never Married	14.5	11.2	3.1	9.2	21.9	16.2	5.2	12.7	11.6	7.3	2.2	5.4
Currently Married <sup>1</sup>	77.6	81.4	58.9	46.3	71.7	76.9	59.3	46.4	79.8	85.0	58.7	46.4
Divorced <sup>2</sup>	5.6	5.5	16.7	22.4	4.8	5.4	16.0	21.9	5.9	5.5	16.9	23.0
Widowed	2.3	1.9	21.3	22.0	1.6	1.7	19.5	19.0	2.7	2.1	22.2	25.3

Source:

- Notes: 1. Includes consensual union  
2. Includes separated

Figures A3.4 and A3.5 show the trend in marital status between 1960 and 2000. It clearly brings out the higher proportion of males than females in unions as well as the higher proportion of females than males who are either divorced or widowed.

### 3.10 Educational Level of Household Head

Education allows an individual to gain access to better economic opportunities, earn a good salary, and enhances his/her understanding and appreciate value of issues within their proper context. There is the observation that educated persons have a better understanding of issues and their environment. Having increasing proportions of household heads with higher education therefore will ensure that they take more informed decisions concerning their families as well as contribute to issues relating to their communities.

Table 3.13 indicates that a higher proportion of female than male heads in the three censuses had never received any formal education. Education of household heads has improved considerably between 1970 and 2000, especially for the never attended which dropped by more than 20 percentage points for both males and females. In 1970, 82 per cent of female household heads compared with 63 per cent of male heads had never been to school. In 1984, the proportion declined to 65 per cent for females and 47 per cent for males; with further declines in the proportion of female heads who have never been to school from 58 per cent in 2000. The drop is highest (26 points) for urban females and lowest (17 points) for rural female heads.

There has been a sharp increase in the proportion of heads who have had middle/JSS education, particularly between 1984 and 2000. Though not substantial, the proportion with secondary school, commercial, teacher training and university has more than doubled from 1970 to 2000. This could be a reflection of many educated persons moving from family homes to set up one-person households while working to make a living.

**Table 3.13 Education Level of Household Heads by Sex and Locality of Residence**

Education	Male			Female		
	1970	1984	2000	1970	1984	2000
<b>Total country</b>						
Never Attended	63.3	46.7	38.8	82.3	65.3	57.7
Primary	7.3	7.7	4.9	6.9	9.0	6.0
Middle/SSS	23.0	35.2	33.6	9.0	20.8	23.0
Secondary/SSS	2.8	5.6	8.5	0.6	2.1	4.2
Commercial Tech	1.4	2.7	5.6	0.4	1.3	3.6
Post Secondary	1.5	2.0	3.9	0.7	1.2	3.3
Tertiary	0.7	1.2	4.7	0.1	0.3	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Urban</b>						
Never Attended	40.2	28.9	22.3	71.6	53.2	45.7
Primary	6.6	5.3	4.1	8.1	8.4	5.9
Middle/SSS	38.8	43.5	38.7	16.2	28.7	29.0
Secondary/SSS	6.7	11.4	13.2	1.5	4.3	6.5
Commercial Tech	3.8	5.8	9.2	1.0	2.8	5.7
Post Secondary	2.0	2.3	4.7	1.3	2.2	4.6
Tertiary	1.9	2.8	7.8	0.3	0.4	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Rural</b>						
Never Attended	74.0	55.1	52.2	88.0	73.5	70.7
Primary	7.6	8.8	5.5	6.1	9.4	6.0
Middle/SSS	15.6	30.3	29.5	5.1	15.4	16.5
Secondary/SSS	1.0	2.6	4.7	0.2	0.6	1.8
Commercial Tech	0.2	1.1	2.7	0.1	0.3	1.4
Post Secondary	1.4	1.7	3.2	0.4	0.7	2.0
Tertiary	0.2	0.4	2.2	0.1	0.1	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1960, 1970, 1984 and 2000 Population Census reports  
Central Bureau of Statistics, Ghana and Ghana Statistical Service..

It is worth noting that the increase in the proportion of household heads with post basic education is more pronounced among female than male heads of households.

Figures A3.6, A3.7 and A3.8. show graphically the educational status of household heads from 1970 to 2000. The charts clearly show a remarkable improvement in the educational levels attained by the household heads over the period. This improvement in education appears to be greater for female heads than males over time.

### 3.11: Type of Activity of Household Head

Table 3.14 summarizes the proportions of household heads by activity status. The data show that 93.8 per cent of male heads of household were employed in 1970, but this declined to 85.0 per cent in 2000. The pattern and trend also apply to both urban and rural areas. In the case of female household heads, the decline is from 83.6 per cent in 1970 to 74.1 per cent in 2000. Another significant decline among female heads is with homemakers. These declines are compensated for by increases in the proportion unemployed. This observation, again, is true for both males and females as well as urban and rural residents. The given data, however, suggest that most household heads are engaged in some type of activity that enables them to meet their responsibilities towards their households.

**Table 3.14: Activity Status of Household Heads by Sex Locality of Residence**

Type of Activity	Total		Urban		Rural	
	1970	2000	1970	2000	1970	2000
<b>Male</b>						
Employed	93.8	84.9	92.1	82.3	94.7	87.0
Unemployed	2.1	6.2	3.6	6.7	1.4	5.7
Homemaker	0.2	1.2	0.2	1.6	0.1	0.8
Student	0.7	0.8	1.1	1.2	0.6	0.5
Old Age	0.0	2.6	0.0	2.1	0.0	3.0
Retired/Pensioner	0.0	1.8	0.0	2.9	0.0	1.0
Person with disability	2.6 <sup>1</sup>	0.6	1.8 <sup>1</sup>	0.5	3.0 <sup>1</sup>	0.7
Other	0.6	1.9	1.2	2.7	0.2	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Female</b>						
Employed	83.6	74.1	79.6	71.7	86.0	76.8
Unemployed	1.3	7.1	2.3	7.8	0.7	6.2
Homemaker	8.6	5.0	12.0	6.1	6.8	3.7
Student	0.4	0.7	0.5	1.0	0.4	0.5
Old Age	0.0	8.1	0.0	7.5	0.0	8.9
Retired/Pensioner	0.0	1.2	0.0	1.6	0.0	0.6
Person with disability	5.7 <sup>1</sup>	1.1	5.2 <sup>1</sup>	0.9	6.0 <sup>1</sup>	1.4
Other	0.4	2.7	0.4	3.4	0.1	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from 1970 and 2000 Population Censuses of Ghana

Note: <sup>1</sup> includes Old Age and Retired/Pensioner

### 3.12 Occupation of Household Head

The concept of occupation relates to the type of work performed by the individual. Thus censuses, guided by the international standard classification of occupations, categorize various types of work performed by people in the country.

Table 3.15 shows that the highest proportion of household heads, especially in rural areas, is engaged in agriculture, animal husbandry and fishing in both 1970 and 2000, in spite of a substantial decline over the period. In urban areas, the agricultural and related workers proportion in 1970 (33.1%) dropped to less than a fifth (18.4%) in 2000. The occupations that

gained from this decline in rural areas are professional/technical and related workers, clerical workers and production and related workers. Improvement in the level of education of household heads may have enabled them to move into the non-agricultural sector. In the case of urban household heads, the move has been in favour of production and related workers and persons.

**Table 3.15: Occupation of Household Heads by Locality of Residence, 1970, 2000**

Occupation of Head	Total		Urban		Rural	
	1970	2000	1970	2000	1970	2000
Professional, Technical & related Worker	5.4	8.9	13.9	12.9	3.0	5.5
Admin., Executive & Managerial Workers	0.6	0.4	2.1	0.8	0.2	0.1
Clerical workers	4.0	6.1	13.8	10.4	1.2	2.4
Sales workers	8.8	12.7	23.8	22.2	4.5	4.6
Service workers	3.6	5.3	11.4	8.8	1.4	2.3
Agriculture, Animal Husbandry and fishing	76.3	48.2	33.1	19.0	88.6	73.1
Production and related workers	1.3	16.8	1.9	23.7	1.1	10.9
Others ( No longer employed)	0.0	1.6	0.0	1.0	0.0	1.1
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from 1970 and 2000 Population Censuses of Ghana

1970: Unpublished Census Vol. IV Report

2000: Population and Housing Census

### 3.13 Employment Status of Household Head

Majority of household heads (68.7%) are self-employed without employees; and an additional 21.2 per cent are employees. (Table 3.16). Apprentices and unpaid family workers account for 3.6 per cent of household heads. Household heads who are domestic employees may represent household helps who may be living with households but make separate feeding arrangements for themselves or for their families.

**Table 3.16: Employment Status of Household Heads by Sex**

Employment Status	Total	Male	Female
Employee	21.2	25.0	12.0
Self employed, no employee	68.7	64.7	78.4
Self employed, with employee	5.7	5.9	5.1
Unpaid family worker	2.1	2.2	2.1
Apprentice	1.5	1.4	1.5
Domestic employee	0.2	0.2	0.3
Other	0.6	0.6	0.6
Total	100.0	100.0	100.0
N	3,052,266	2,170,609	881,657

Source: 2000 Population Census of Ghana

Table 3.17 on the distribution of female household heads from the 1993 Ghana Demographic and Health Survey reveals a similar pattern, with four-fifths (80.0%) of female household heads being self-employed. The 1997 Core Welfare Indicators Questionnaire (CWIQ) Survey also reports 72.2 per cent of household heads as self-employed.

**Table 3.17: Female Household Heads by Employment Status and Locality**

Employment Status	Locality of Residence		
	Total	Urban	Rural
Employee	18.0	10.7	13.6
Self-employed	80.0	85.7	83.5
Unpaid family worker	2.0	3.6	2.9
Total	100.0	100.0	100.0

Source: 1993 Ghana Demographic and Health Survey

About three-quarters (74.0%) of household heads are employed in the informal sector accounts, while about a tenth (9.6%) is in the public and 15 per cent in the private formal sector. Thus, only a quarter (25.4%) of household heads work in the formal sector, where employment and earnings may be more stable even if inadequate for subsistence living. Findings from the 1997 CWIQ survey also indicate that 83.9 per cent of household heads work in the private informal sector.

**Table 3 18: Employment Sector of Household Heads by Sex**

Employment Sector	Total	Male	Female
Public	9.6	10.8	6.5
Private formal	14.6	15.4	12.7
Private informal	74.0	71.7	79.7
Semi public or parastatal	1.0	1.2	0.5
NGO's or International	0.2	0.3	0.1
Other	0.5	0.5	0.5
Total	100.0	100.0	100.0
N	3,052,266	2,170,609	881,657

Source: 2000 Population Census of Ghana

### 3.14 Summary and Conclusion

#### Summary

The chapter indicates an increase in households throughout the country, with Greater Accra recording consistent increases in its share of the national total. Rural households continue to constitute the larger share of households in the country, even though there is a steady increase in the proportion of urban households from 1960 to 2000. The analysis also reveals a decline over time in the single person households in both rural and urban areas.

With regard to the headship of households, male-headed households continue to be more than female-headed households for the entire period of the analysis. For instance, more than two-thirds of heads reported in the 2000 census are males, while only about a third are females, though there is a decline of male household heads from 74.3 per cent in 1960 to 68.7 per cent in 2000.

The three northern regions have maintained the highest proportions of male household heads over time. Even though there is a decline over the years, more than three quarters of heads of household in the three northern regions are reported to be males (Western follows closely with 72.4%). Female-headed households tend to be smaller in size (up to 5 persons) while male-

headed households are larger in size, particular in households with 10 persons or more. Headship rates also tend to increase with age.

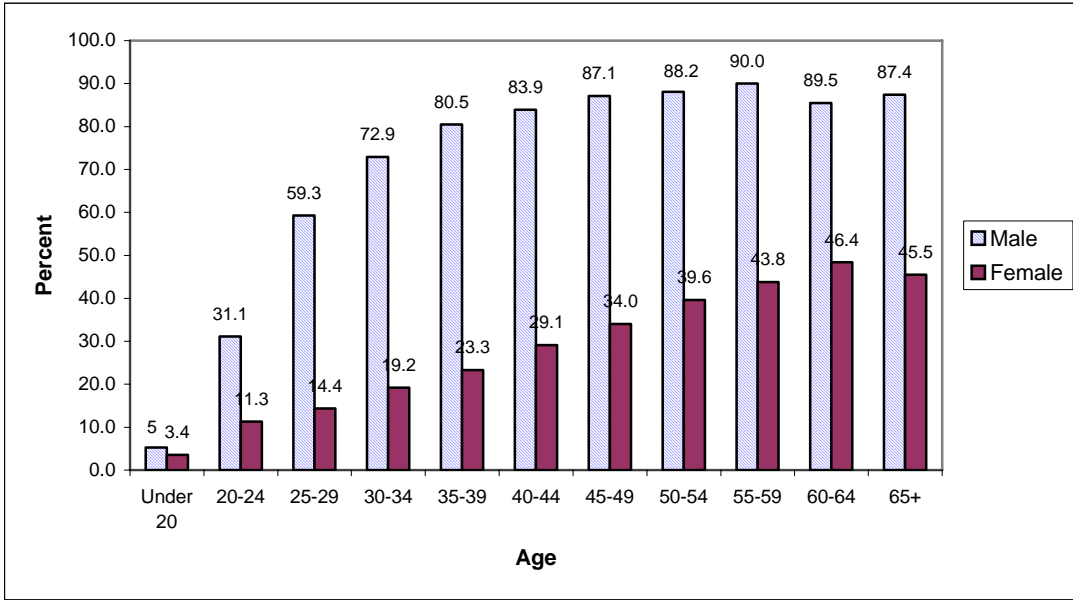
Household composition appears to have undergone changes over the 1970-2000 period. The proportion of spouses of household heads declined between 1970 and 2000 in both urban and rural areas for female headed households. Similarly, there is a decline in the proportion of children of household head recorded over the same period. The proportions of other relatives reported for both urban and rural areas have increased, suggesting that the extended family system has persisted in the face of rapid urbanization. A higher proportion of male than female heads are married while higher proportions of female heads, divorced or widowed.

The educational attainment of household heads (both male and female) appear to have improved tremendously. Higher proportions of male heads than female, however, are educated at the various levels of education. The majority of household heads (male and female) are to agriculture, animal husbandry and fishing as well as mine workers, and are also self employed without employees in the private informal sector.

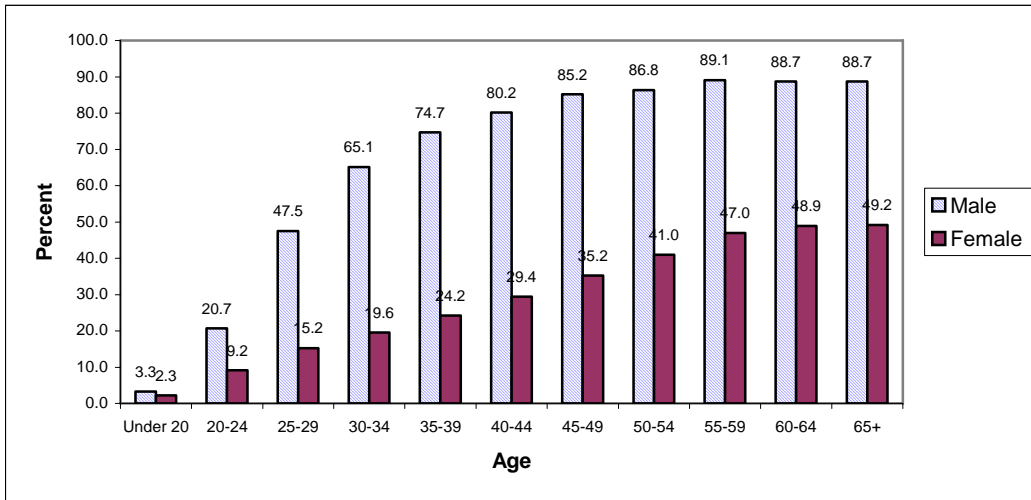
### Conclusion

The trend data on household size, composition of headship and other characteristics of the household indicate that a lot of transformation has taken place at the household level. Changes such as improvements in the educational status of heads over time are noted. Children of heads of household still constitute the highest proportion of household members, despite the fact that there is a decline over the period. There also appears to be a shift in the predominant occupations of heads from agriculture to non-farm occupations. These may lead to an improvement in the standard of living of households over time.

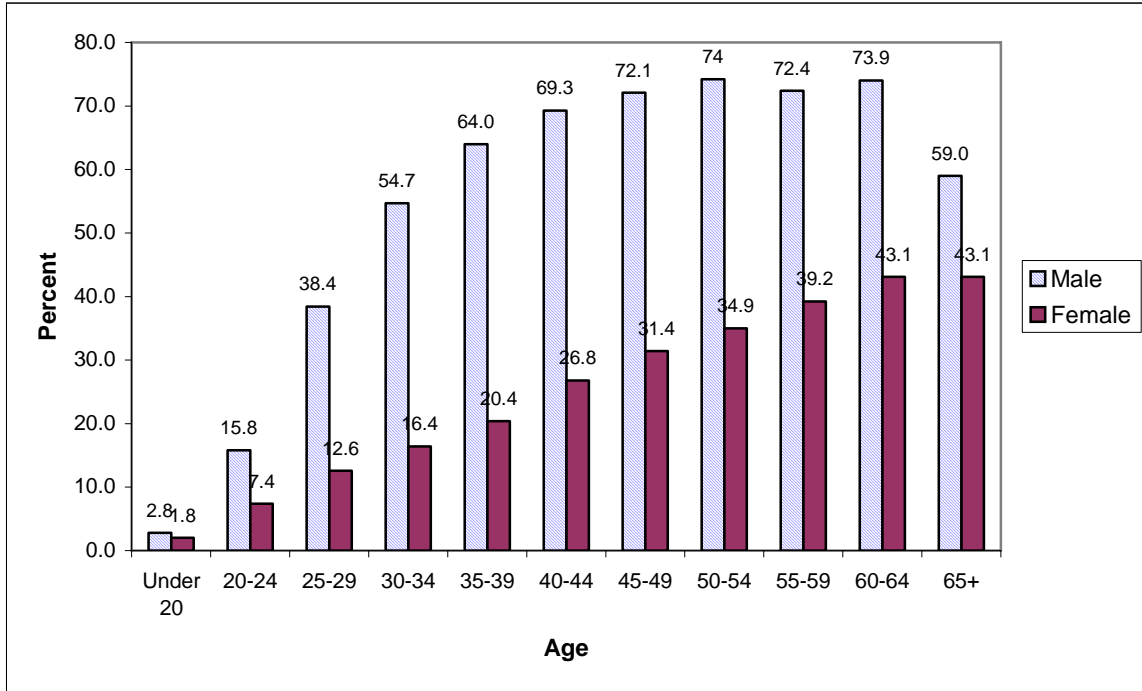
**Figure A3.1: Headship Rates by Age and Sex - 1970**



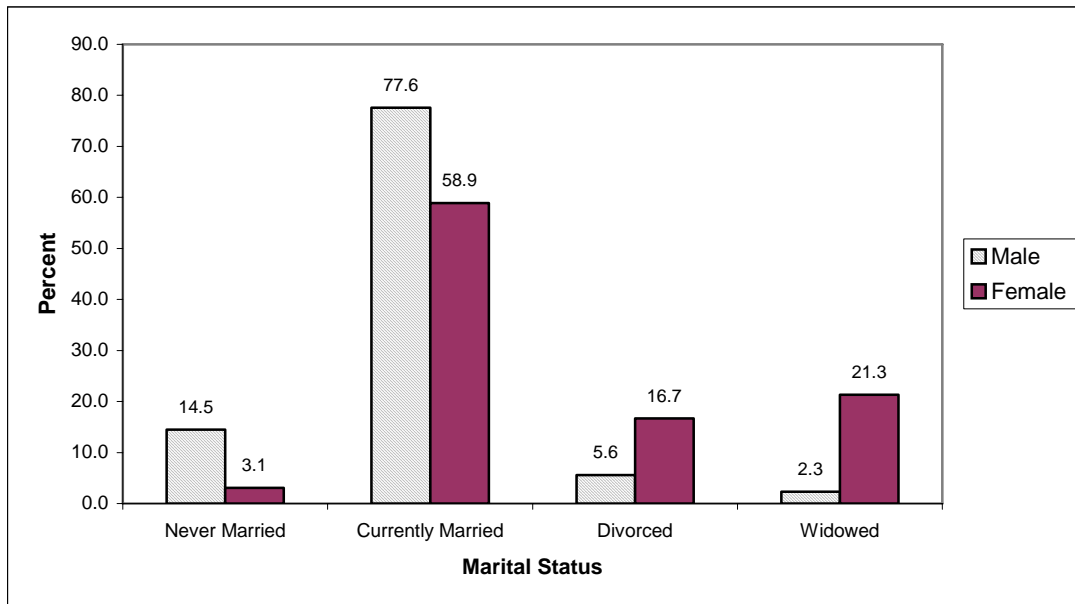
**Figure A3.2 Headship Rates by Age and Sex – 1984**



**Figure A3.3: Headship rates by Age and Sex – 2000**

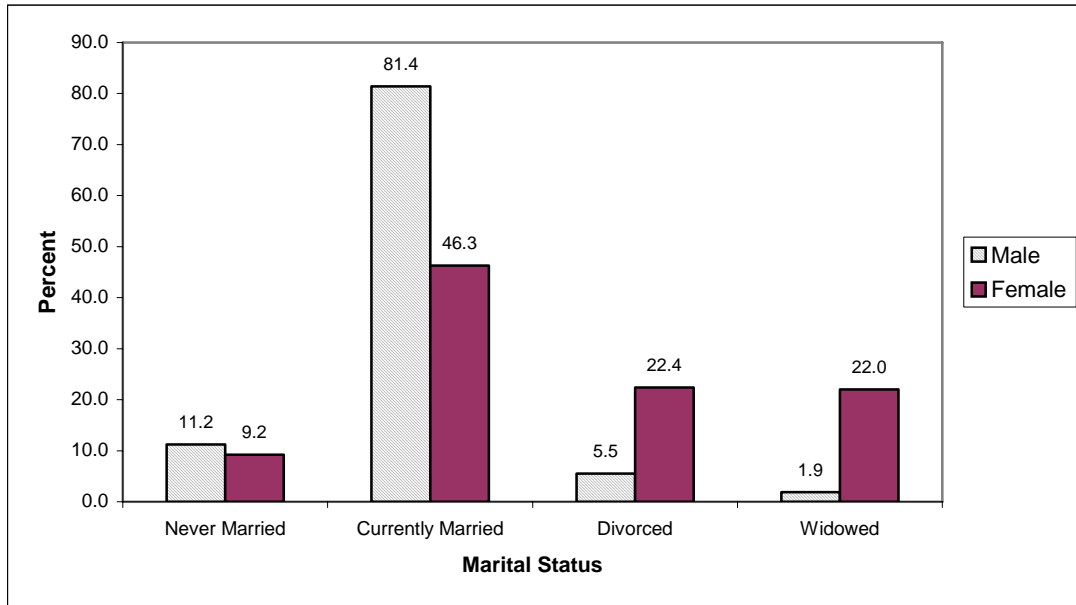


**Figure A3 4: Household heads (15 years and older) by sex & marital status -Total country, 1960**

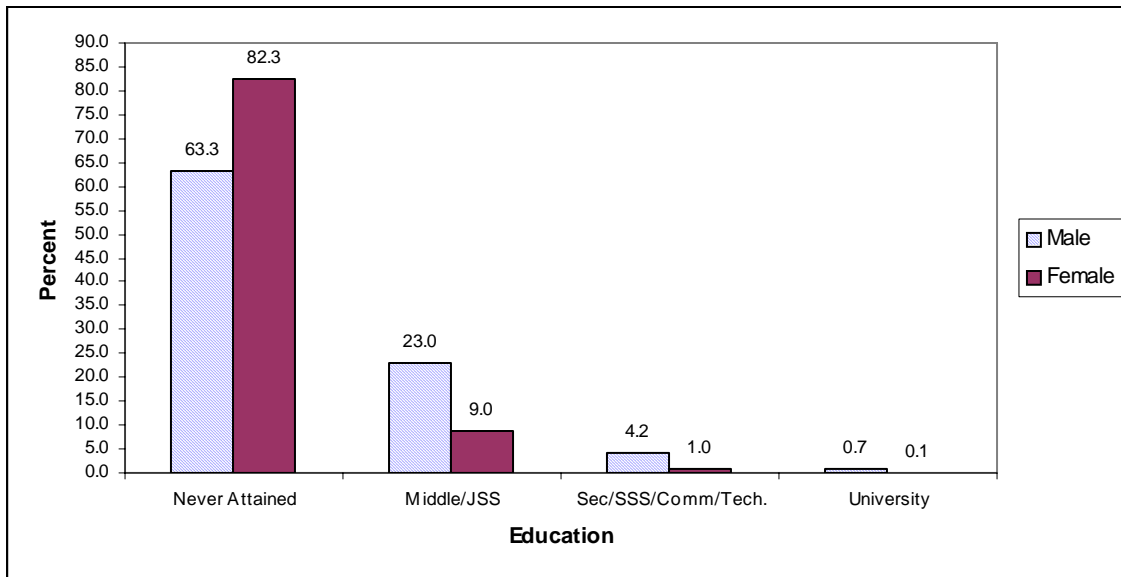




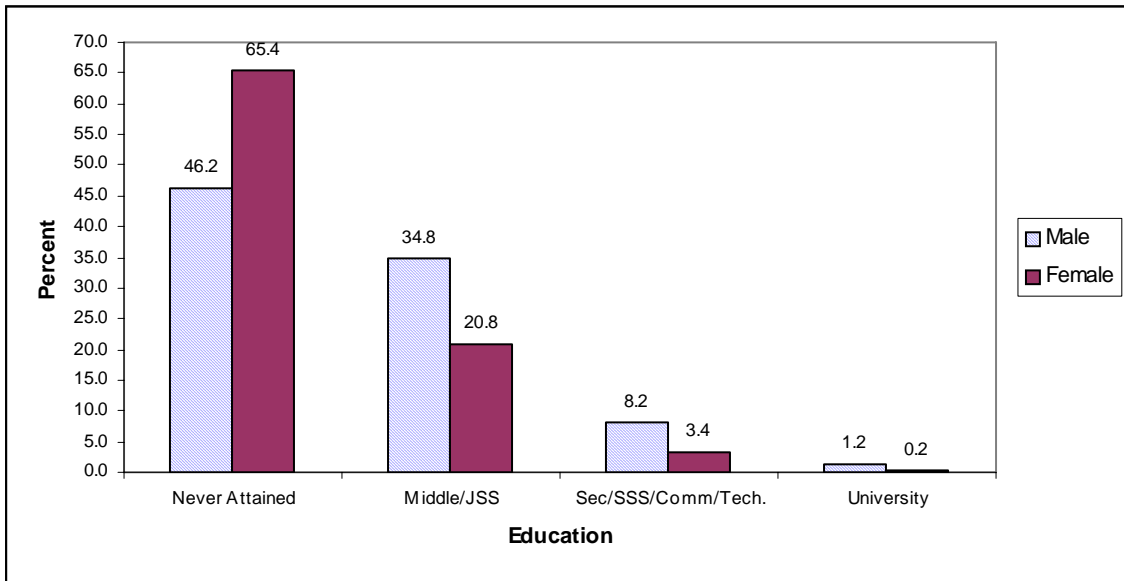
**Figure A.3.5: Household heads (15 years and older) by sex & marital status – Total country, 2000**



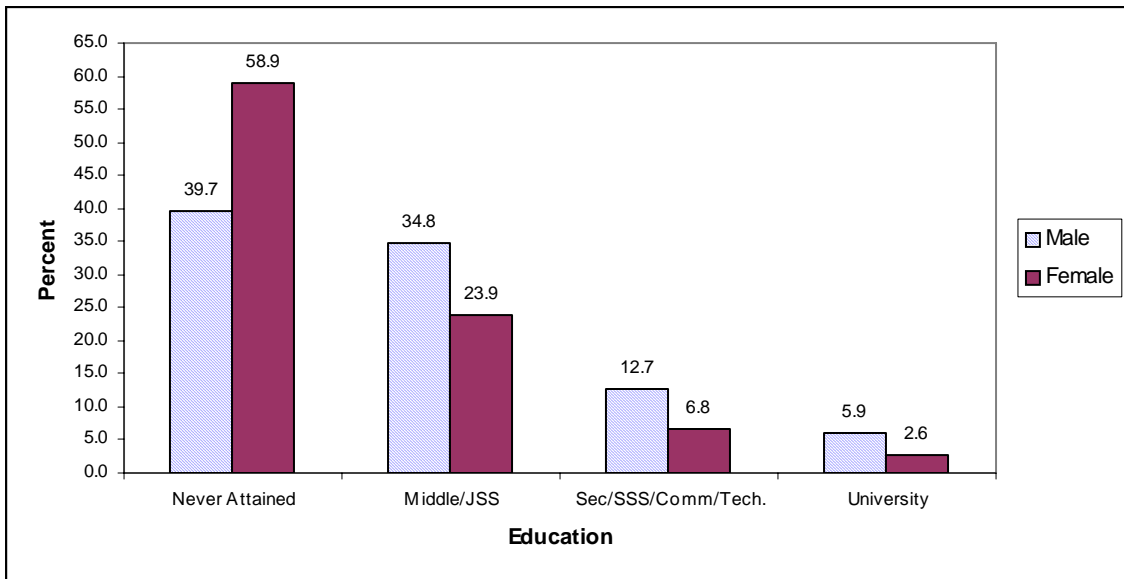
**Figure A3.6: Household heads by sex and education – 1970**



**Figure A3.7 Household heads by sex and education – 1984**



**Figure A3.8: Household heads by sex and education – 2000**



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## CHAPTER 4: MARITAL CHARACTERISTICS

### 4.1 Introduction

Available evidence in Ghana indicates the near universality of marriage among many societies. For instance, the 1960 Post Enumeration Survey (PES) data reveal that by age 25, about 98 per cent of Ghanaian females were married, with an average age at first marriage of 17.7 years. The Ghana Fertility Survey of 1979/80 also shows that by age 40, only about 0.5 per cent of Ghanaian women were not married. Early age at marriage and several forms of marriage have been found in several parts of the country (Gaisie, 1976; Aryee, 1975). The results of the Ghana Demographic and Health Survey (GDHS) 1988, 1993 and 1998 also confirm the near universality of marriage and at young age at first marriage.

Even though it is recognized that there is a close relationship between the proportion married and level of fertility, much less attention is devoted to the analysis of marriage as compared to fertility. In most censuses undertaken in the country, relatively fewer questions have been asked on marriage than on fertility.

The objective of the chapter is to study the trend in marital patterns in the country with particular emphasis on locality and regional differentials, using estimated singulate mean age at marriage and other characteristics. The data used in the analysis are results from previous censuses and relevant national surveys. These include the 1960 Post Enumeration Survey (PES), the 1979/1980 Ghana Fertility Survey, the 1988, 1993 and 1998 Ghana Demographic and Health Surveys (GDHS), the 1991/1992 and 1998/1999 Ghana Living Standard Surveys (GLSS) and the 2000 Census.

### 4.2 Marital Status by Age and Sex

In populations where the proportion married is very high and marriage is almost universal, there is the tendency to marry early. Early marriage also poses a higher risk of marital dissolution because of the couples' lack of experience and preparation before they enter into such unions. Tables 4.1 presents the distribution of marital status by age based on the 1960 PES, the 1993 and 1998 GDHS and the 2000 Census. It shows that the proportion never married has increased over time from 33.5 per cent in 1960 to 38.9 per cent in 2000 for males and from 8.5 per cent to 25.2 per cent for females for the same period.

Table 4.1 also shows that in 1960, 51.5 per cent of females aged 15-19 years are married, while in 2000 it is only 17.7 per cent who are married or in a consensual union. Indeed, increasing proportions of both males and females are staying out of marriage even in older ages. For instance while in 1960, by age 35 nearly all women (99.3%) are either married or have been married before, (89.8 per cent for males) in 2000, 74.8 per cent females 61.1 per cent males have been married before.

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Mrs. Edith K. Mote has contributed this chapter.

**Table 4 1: Marital Status, by Age and Sex**

Age Group	Never Married				Married				Consensual Union				Separated				Divorced				Widowed			
	1960	1993	1998	2000	1960	1993	1998	2000	1960	1993	1998	2000	1960	1993	1998	2000	1960	1993	1998	2000	1960	1993	1998	2000
<b>Male</b>																								
15-19	96.4	98.3	97.0	89.2	3.2	0.4	0.7	7.6	-	1.3	1.9	1.8	-	-	0.4	0.5	0.3	-	0.0	0.6	0.1	0.0	0.0	0.3
20-24	71.2	72.5	74.4	77.4	27.0	12.6	12.5	16.0	-	11.0	11.3	4.8	-	1.7	1.8	0.7	1.7	2.2	0.0	0.8	0.1	0.0	0.0	0.3
25-29	36.7	37.0	41.9	50.6	59.0	39.5	32.6	37.4	-	15.5	16.0	9.0	-	2.5	8.7	1.1	3.9	5.5	0.8	1.5	0.4	0.0	0.0	0.4
30-34	17.4	9.6	14.1	23.2	76.1	69.5	58.3	61.8	-	13.8	18.8	9.8	-	4.2	6.5	1.6	5.7	2.4	1.7	2.9	0.8	0.5	0.6	0.7
35-39	10.2	6.4	3.5	12.3	81.8	74.3	78.7	72.6	-	9.9	12.0	8.7	-	2.3	3.8	1.8	6.7	7.1	1.1	3.7	1.3	0.0	0.9	0.9
40-44	6.1	4.6	2.4	8.0	84.5	78.7	77.8	76.8	-	6.5	6.5	7.5	-	2.8	4.0	1.9	7.5	4.6	9.3	4.6	1.9	2.8	0.0	1.2
45-49	3.9	1.1	1.5	5.7	85.3	82.3	82.6	78.5	-	4.7	6.1	6.4	-	1.1	1.2	2.0	8.0	10.3	7.5	5.5	2.8	0.0	1.1	1.9
50-54	3.5	1.1	0.0	4.8	84.7	89.4	85.0	78.4	-	-	8.0	5.3	-	4.3	0.0	2.2	8.8	3.1	4.6	6.7	3.0	2.1	2.4	2.6
55-59	3.3	4.3	0.0	4.6	84.9	81.3	81.8	77.3	-	1.4	4.0	4.8	-	5.8	3.2	2.3	8.1	1.4	5.9	7.5	3.7	5.8	5.1	3.5
60-64	2.5	-	-	4.8	81.6	-	-	74.5	-	-	-	3.8	-	-	-	2.4	10.0	-	-	8.3	5.9	-	-	6.2
65+	1.9	-	-	8.2	75.5	-	-	64.9	-	-	-	3.4	-	-	-	2.5	10.9	-	-	9.2	11.7	-	-	11.8
<b>Total</b>	<b>33.5</b>	<b>35.5</b>	<b>40.9</b>	<b>38.9</b>	<b>59.4</b>	<b>49.4</b>	<b>43.0</b>	<b>48.1</b>	<b>-</b>	<b>8.1</b>	<b>9.8</b>	<b>5.9</b>	<b>-</b>	<b>2.4</b>	<b>3.4</b>	<b>1.5</b>	<b>5.2</b>	<b>3.8</b>	<b>2.2</b>	<b>3.5</b>	<b>1.9</b>	<b>0.8</b>	<b>0.7</b>	<b>2.1</b>

Table 4.1 cont'd

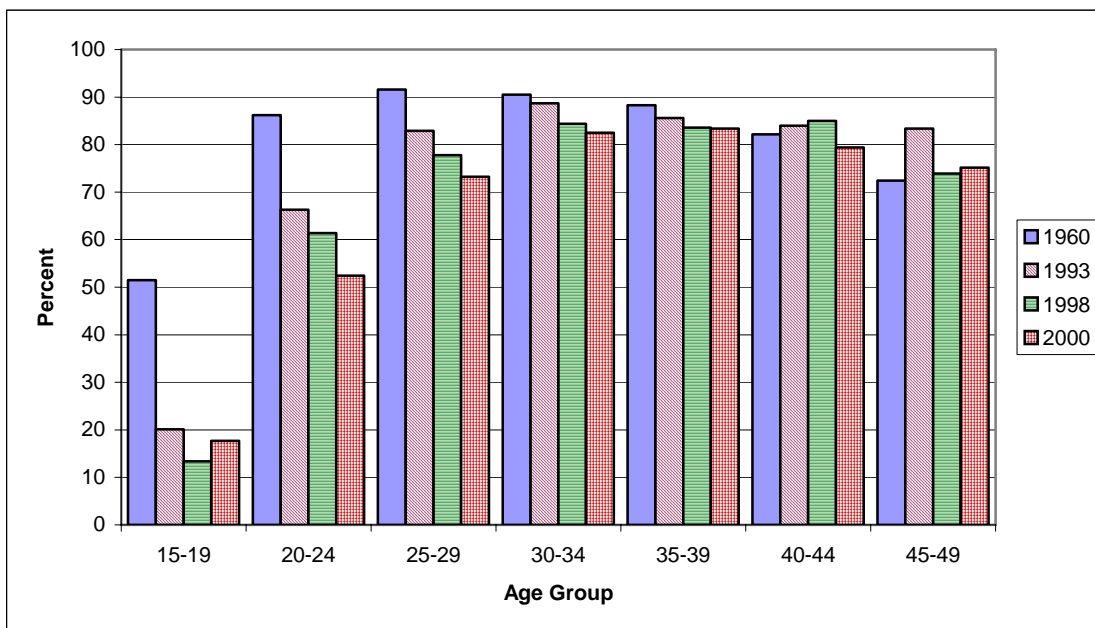
Female																								
15-19	45.9	7.6	83.6	80.5	51.5	6.5	13.3	-	9.5	6.9	4.4	-	1.4	2.9	0.7	2.4	1.0	0.1	0.8	0.2	-	0.0	0.3	
20-24	8.6	24.7	29.0	43.5	86.2	46.4	42.3	40.6	-	20.0	19.0	11.8	-	4.0	7.6	1.5	4.6	4.3	1.8	2.1	0.6	0.6	0.3	0.5
25-29	2.3	5.9	11.2	20.6	91.6	69.5	60.2	61.7	-	13.4	17.6	11.5	-	3.3	6.2	1.9	4.9	6.7	4.2	3.4	1.2	1.2	0.6	0.9
30-34	1.3	1.3	2.3	8.2	90.5	78.2	72.8	72.8	-	10.6	11.6	9.7	-	2.8	6.2	2.4	6.0	5.5	5.3	5.2	2.2	1.6	1.8	1.7
35-39	0.7	0.3	0.9	4.9	88.3	76.8	71.5	75.2	-	8.8	12.1	8.2	-	3.3	5.1	2.6	6.7	8.4	8.2	6.4	4.3	2.4	2.2	2.7
40-44	0.4	0.0	0.2	3.9	82.2	77.9	74.9	72.6	-	6.2	10.1	6.8	-	2.1	4.0	3.0	9.5	8.9	7.1	8.5	7.9	4.9	3.7	5.2
45-49	0.5	0.0	1.4	3.0	72.4	78.3	66.6	69.6	-	5.0	7.4	5.6	-	3.6	3.9	3.2	11.9	8.0	11.8	10.1	15.2	5.1	8.9	8.2
50-54	0.5	-	-	2.7	61.6	-	-	63.7	-	-	-	4.4	-	-	-	3.2	14.9	-	-	12.1	23.0	-	-	13.9
55-59	0.3	-	-	3.1	50.7	-	-	57.8	-	-	-	3.9	-	-	-	3.4	16.3	-	-	13.1	32.7	-	-	18.7
60-64	0.3	-	-	3.1	38.0	-	-	48.0	-	-	-	2.6	-	-	-	3.1	16.1	-	-	14.2	45.6	-	-	29.0
65+	0.4	-	-	5.4	20.8	-	-	32.8	-	-	-	2.3	-	-	-	2.6	14.4	-	-	12.7	64.4	-	-	44.2
Total	8.5	19.5	23.7	25.2	75.1	58.7	51.9	51.2	-	11.6	12.7	7.5	-	2.9	5.3	2.2	7.2	5.6	4.6	6.1	9.2	1.7	1.8	7.8

Source: 1960 PES 1993 &amp; 1998 GDHS and 2000 census

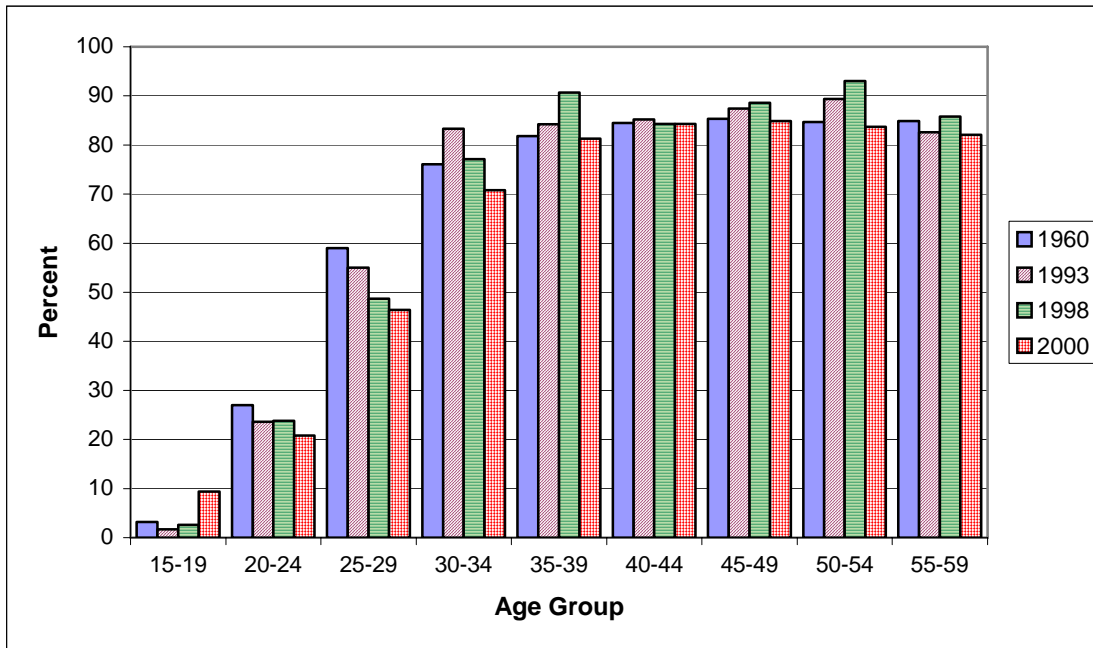
Another observation from the Table is that higher proportions of females than males are in unions at younger ages (15-39) but subsequently higher proportions of females than males are either divorced, separated or widowed. The higher widowhood rate for females results from the fact that men have lower life expectancy than women at birth and tend to therefore die before the wives who are usually 5 years younger. On the other hand, as age increases, higher proportion of males are observed to be married. This pattern is reflective of the social structure and norms of society. The observed difference also reflects the fact that males are more likely to remarry earlier than females when the marriage is dissolved through divorce or death. The fact of polygamy also means that a man with two wives who loses one of the wives through divorce or death is still married, whereas if the man dies, two widowed women are recorded

Figure 4.1 and Figure 4.2 show the proportion of ever-married females and males over the period. The graphs reveal, not only a general decline in marriage among males and females at almost all ages over the period, but also lower proportions among males between ages 15 and 29. The declining proportions of married males and females over time might help to explain the decline in fertility from 6.4 in 1988 to 4.6 in 1998.

**Figure 4.1. Population of Females Married (or in Consensual Union) by Age, 1960, 1993, 1998, 2000**



**Figure 4.2 Proportion of Males Married (or In Consensual Union) by Age, 1960,1993,1998,2000**



Source: 1960 PES, 1993, 1998 GDHS and 2000 Census

### 4.3 Religion and Marital Status

Most religions emphasize procreation within marriage and, therefore, there is the need to examine changes in marital status in relation to peoples' religious affiliations. Table 4.2 shows that substantial changes have taken place among the various religious groups since the 1960s. For instance in 1960, Moslem females reported to be never married is 3.6 per cent while in 2000 it is 23.7 per cent. Infact, the proportion of never married females increased for all religions between 1960 and 2000. On the other hand, proportion of married females has declined for all religions within the period. An observation worth making is that there is a significant difference between the proportion of never married Christian females in 1960 (15.1%) and females of other religion; by 2000, the proportion of never married Christian females (27.1%) and that of never married Moslem females (23.7%) is not significantly different, though they are significantly different from the proportion of never married females for other religious groups. If this is a factor of education, it would imply tremendous improvement in Moslem female education.

The changes are not as substantial for males as they are for females, particularly with the married. A similar trend in proportions of never married Christian and Moslem females is also observed for males, where the wide gap between Christian and Moslems in 1960 is narrowed in 2000, while the gap with other religious groups remains substantial.



**Table 4 2: Marital status of persons (15 years and older) by sex and religious background, Ghana, 1960 and 2000**

Region	Never Married		Married		Consensual Union		Separated		Divorced		Widowed	
	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000
<b>Male</b>												
Christian	42.5	41.0	52.1	45.2	-	4.5	-	1.5	4.2	3.4	1.2	1.9
Islam	33.0	40.6	59.5	51.4	-	2.6	-	-	5.8	2.6	1.7	1.7
Traditional	24.6	27.4	66.8	62.0	-	2.6	-	1.5	5.7	3.3	2.9	3.2
No Religion	36.7	29.0	56.6	55.1	-	3.6	-	2.3	5.3	7.1	1.4	2.9
<b>Total</b>	<b>34.4</b>	<b>38.9</b>	<b>58.6</b>	<b>48.1</b>	<b>-</b>	<b>5.9</b>	<b>-</b>	<b>1.5</b>	<b>5.2</b>	<b>3.5</b>	<b>1.8</b>	<b>2.1</b>
<b>Female</b>												
Christian	15.1	27.1	67.8	48.0	-	8.6	-	2.3	9.7	6.9	7.4	7.1
Islam	3.6	23.7	85.7	61.6	-	3.0	-	14.	3.8	3.0	6.9	7.3
Traditional	4.5	13.1	78.7	66.5	-	2.8	-	1.8	5.2	2.9	11.6	12.9
No Religion	7.5	15.9	75.7	50.6	-	11.7	-	2.9	8.0	8.8	8.8	10.1
<b>Total</b>	<b>9.0</b>	<b>25.1</b>	<b>74.7</b>	<b>51.5</b>	<b>-</b>	<b>7.4</b>	<b>-</b>	<b>2.2</b>	<b>7.1</b>	<b>6.0</b>	<b>9.2</b>	<b>7.8</b>

#### 4.4 Proportion Ever Married by Selected Age Groups

The proportion ever married within the population, to a large extent, reflects the level to which people change their marital status at any given time. Table 4.3 shows that significant changes have occurred with the ever married, with variations in the age and sex specific rates and locality of residence. For instance, the proportion ever married for age group 15-19 is 3.6 per cent for males and 54.1 per cent for females in 1960, while in 2000 it is 10.8 per cent for males and 19.5 per cent for females in the same age group.

**Table 4.3 proportion Ever Married by Age, Sex and Locality of Residence**

Age Group	Total				Urban				Rural			
	Male		Female		Male		Female		Male		Female	
	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000
15-19	3.6	10.8	54.1	19.5	2.6	9.1	45.5	13.8	4.0	12.2	57.4	25.8
20-24	28.8	22.6	91.4	56.5	24.4	16.6	88.2	42.8	30.7	29.5	92.6	71.0
25-29	63.3	49.4	97.7	79.4	60.3	40.2	96.5	70.8	64.6	59.3	98.1	87.8
30-34	82.6	76.8	98.7	91.8	81.1	71.2	98.2	88.1	83.2	81.8	98.8	95.2
35-39	89.8	87.7	99.3	95.1	91.1	85.5	98.9	93.2	89.3	89.7	99.4	96.7
40-44	93.9	92.0	99.6	96.1	93.9	91.2	99.9	94.9	93.9	92.8	99.5	97.2
45-49	96.1	94.3	99.5	97.0	95.6	93.9	99.2	96.1	96.1	94.5	99.6	97.6
50-54	96.5	95.2	99.5	97.3	95.7	95.4	99.1	96.7	96.7	95.1	99.7	97.8
55+	97.6	93.2	99.7	95.6	96.6	91.8	99.5	94.2	97.8	94.2	99.8	96.5

These differences notwithstanding, the near universality of marriage in the country during the periods under consideration is a significant observation, because by the end of the reproductive period, virtually all women and not less than 95 per cent of men have been married at least once.

Full time education and marriage among the younger age group are incompatible and therefore the longer one stays in school, the less likely that one would marry early in life. The level of education therefore affects the age at first marriage. Table 4.4 shows that at the lower age group (15-24 years), where it is expected that people should be in school, the

proportion ever married declines with level of education. For instance, the proportion ever married for females declined from 64.6 per cent for those with primary education to 12.1 per cent for those with secondary and higher education in 1960. Beyond the 15-14 years age group, there is on clear pattern, indicating that other factors may be responsible in influencing marriage, for the vast majority after age 24 years are out of full time schooling.

Indeed, many people who pursue higher education in later life are already married. An interesting observation in 1960 about females beyond age 24 years is that there are lower proportions of ever married among those with secondary and higher education (75.0% for the 25-44 years and 77.2% for the 45 years and older) of ever married than those with middle, commercial and technical education (93.8% for 25-44 years and 99.2% for 45 years and older). One possible explanation could be that the highly educated women at the early years of independence seized the opportunity to build professional careers which delayed their entry into marriage.

The pattern observed in 2000 is different from that of 1960. For instance, among the school-going age group (15-24 years), there is actually a rise in proportion ever married at the middle/commercial/technical level before recording a decline at the higher education level. This is true for both males and females. It is also observed that the proportions ever married at the 15-24 years age group are higher in 2000 than in 1960 for males at all levels while for females it is true only for the post-primary levels. For the older ages, the proportions are higher in 1960 than in 2000, except for females at the higher education level.

**Table 4.4: Proportion Ever Married by Level of Education, Age and Sex**

Level of Education	15-24 years		25-44 years				45 years and older					
	Male		Female		Male		Female		Male		Female	
	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000
Never Attended	22.2	35.4	82.9	50.7	80.2	79.7	99.0	86.4	96.7	92.0	99.6	92.9
Primary	12.1	19.9	64.6	50.1	80.0	75.2	97.3	91.7	97.4	94.3	99.8	96.3
Middle/Com/Tech	11.6	43.2	43.4	57.5	80.3	47.3	93.8	61.8	98.5	84.1	99.2	89.1
Post Sec./Tertiary	9.4	23.5	12.1	42.5	77.1	70.4	75.0	81.6	97.6	95.0	77.2	94.2

Table 4.5 shows that Christians have relatively lower proportions of ever married in age group 15-24 years in 1960 than other religions. This may be due to the early influence of the Christian religion on education that would have let to delay in first marriages among this group. From the Table, nearly two thirds (63.7%) of Christian females aged 15-24 years are ever married, reflecting the very low level of female education at the time. For other religions it ranges from 90.3% for Moslem women to 79.1% for women of other or no religion in this age group, indicating that most of these women may not have gone to school at all or that their religion (Islam, Traditional) may have supported early marriage for girls. The differences between the various religions are not significant for males in this age group in either 1960 or 2000.

The proportion ever married is higher for females than males at all ages and for all religions. While more than four-fifths of females are already married by age 25 years, males reach this level after age 35 years. It is worth noting that the proportion of ever married females in the 15-24 years age group drops significantly from 1960 to 2000, particularly among Christians and Moslems, indicating that girls are probably spending more years in school or engaging themselves in trading and other activities rather than entering into marriage.

**Table 4.5: Proportion of Ever Married by Religion, Age and Sex**

Age Group	Christian		Moslem		Traditional		No Religion & others	
	1960	2000	1960	2000	1960	2000	1960	2000
<b>Male</b>								
15-24	13.0	14.7	18.7	16.2	21.8	23.4	16.7	24.7
25-34	75.2	61.1	63.3	57.7	73.2	71.3	66.5	65.1
35-44	93.9	90.4	87.0	88.0	92.1	91.1	87.7	87.1
45-49	97.2	94.8	91.0	93.7	96.7	94.7	94.6	92.3
50 and older	98.3	93.4	94.1	93.9	97.8	95.6	95.3	92.2
<b>Female</b>								
15-24	63.7	33.9	90.3	41.3	84.4	53.3	79.1	50.2
25-34	96.9	83.2	99.3	87.7	99.0	92.9	98.1	87.2
35-44	99.1	95.1	99.7	96.6	99.5	97.5	99.5	94.7
45-49	99.2	96.7	99.0	97.5	99.7	98.0	99.3	96.4
50 and older	99.5	95.6	99.6	96.3	99.7	97.6	99.9	95.1

#### 4.5 Singulate Mean Age at Marriage

The singulate mean age at marriage (SMAM), is the average number of years lived by never married persons who eventually get married. A lower singulate mean age at marriage suggests an early entry into marriage while a higher mean age implies a late entry into marriage

The SMAM for males has remained around 27 years over the period while that for females has increased from 18 years in 1960 to 22 years in 2000 (Table 4.6). The increase in female SMAM could possibly be attributed to the longer years spent in school or a shift by females from early marriage to building career before entering into marriage. While there is an increase in age at first marriage and the sex differential has been narrowed, there is still a difference of about 5 years in age at marriage between males and females.

**Table 4.6: Singulate Mean Age at first Marriage (SMAM) by Sex, Ghana 1960 to 2000**

Source	SMAM			Rate of Increase	
	Male	Female	Age Gap	Male	Female
1960 PES	26.6	17.8	8.8	-	-
1971 Sup Inquiry	-	19.4	-	-	9.0
1979/1980 GFS	-	19.4	-	-	0.0
1988 GDHS	-	20.2	-	-	4.1
1993 GDHS	26.1	20.5	5.6	-	1.4
1998 GDHS	26.7	21.2	5.5	2.3	3.4
2000 Census	27.7	22.3	5.4	3.7	5.2

Note: -- Means **not available**.

Source: **1960 Post Enumeration Survey (PES)**, **1979/1980 Ghana Fertility Survey (GFS)**, 1988, 1993 and 1998 Ghana Demographic and Health Survey (GDHS) and 2000 Census

#### 4.6 Divorce and Widowhood

Divorce and widowhood have implications for the status and welfare of females and the family. Table 4.7 indicates that the proportion of divorced and widowed males is higher for rural areas at all ages except those 55 years and older. This is true for both 1960 and 2000.

The age pattern with divorced and widowed females is not as clear, except that in general, the proportion divorced is higher in urban areas while the proportion widowed is higher in rural areas, in both 1960 and 2000. The rural-urban differences are however not substantial.

The proportion divorced or widowed increases by age for both sexes, locality of residence and in both 1960 and 2000. The increases in almost all cases are more pronounced after age 44 years. Another important observation is that significant proportions of females than males are divorced or widowed at each age for both rural and urban and for both years. The higher proportions of widowed and divorced females in both rural and urban areas may indicate that males marry much younger partners and that they are more likely to remarry soon after divorce or being widowed.

**Table 4.7: Proportion of Population Divorced and Widowed by Age , Sex and Locality of Residence**

Age Group	Divorced						Widowed					
	Total		Urban		Rural		Total		Urban		Rural	
	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000	1960	2000
<b>Males</b>												
15-19	0.3	0.5	0.1	0.5	0.4	0.6	0.1	0.3	0.1	0.2	0.1	0.4
20-24	1.7	0.8	1.1	0.6	2.0	1.0	0.1	0.3	0.1	0.2	0.1	0.4
25-29	3.9	1.5	3.0	1.2	4.3	1.7	0.4	0.4	0.2	0.3	0.5	0.5
30-34	5.7	2.9	4.7	2.7	6.1	3.0	0.8	0.6	0.3	0.6	0.9	0.8
35-39	6.7	3.7	6.1	3.6	6.9	3.8	1.3	0.9	0.8	0.8	1.4	1.0
40-44	7.5	4.5	7.2	4.6	7.5	4.6	1.9	1.2	1.1	1.1	2.2	1.3
45-49	8.0	5.5	7.4	5.5	8.1	5.5	2.8	2.0	2.3	1.9	3.0	2.1
50-54	8.8	6.7	8.1	6.7	8.9	6.6	3.0	2.6	2.8	2.5	3.1	2.7
55+	9.7	8.6	10.1	8.9	9.6	8.4	7.1	8.8	7.8	9.6	7.0	8.3
All Ages	5.2	3.5	4.2	3.2	5.6	3.8	1.9	2.1	1.2	1.9	2.1	2.2
<b>Female</b>												
15-19	2.4	0.8	2.0	0.6	2.6	0.9	0.2	0.3	0.1	0.3	0.2	0.4
20-24	4.6	2.1	4.6	1.7	4.6	2.4	0.6	0.5	0.4	0.4	0.7	0.6
25-29	4.9	3.8	5.9	3.5	4.6	3.2	1.2	0.9	0.7	0.8	1.3	1.0
30-34	6.0	5.2	8.0	5.6	5.5	4.6	2.2	1.7	1.8	1.7	2.3	1.8
35-39	6.7	6.4	9.8	7.5	5.9	5.4	4.3	2.6	3.3	2.7	4.6	2.7
40-44	9.5	8.5	11.6	9.9	8.9	7.4	7.9	5.2	7.6	4.9	8.0	5.3
45-49	11.9	10.3	15.5	11.9	10.8	9.2	15.2	8.1	15.5	7.9	15.1	8.3
50-54	14.9	12.1	17.6	13.9	14.2	10.9	23.0	13.7	24.0	13.5	22.8	14.1
55+	15.4	13.2	16.6	13.9	15.3	12.7	47.5	35.7	50.1	35.6	47.0	35.8
All Ages	7.2	6.0	7.9	6.1	7.0	5.9	9.2	7.7	8.3	6.7	9.7	8.6

## 4.7 Polygamy

The subject of polygamy is important for a discussion of marriage. It is usually defined as the state of being married simultaneously to more than one spouse. The more common form is polygamy, where a man marries more than one wife; polyandry, which is a woman married to more than one man, is not a cultural practice in Ghana. Men who enter into polygamous do so for various reasons. Men who need people to help them on their farms tend to marry many women in order to produce many children to assist the family business. Men who think children are some sort of insurance towards old age also marry more than one so that their many children could take care of them in their old age. Others also decide to marry more wives when they fail to get the preferred sex, particularly sons, among their children, through current wife or wives. Table 4.8 gives the ratio of currently married females to currently married males by region.

**Table 4.8: Ratio of Married Females to Married Males by Selected Characteristics**

<b>Background Characteristics</b>	<b>Ratio of married females to 100 males</b>	
	<b>1960</b>	<b>2000</b>
<b>Locality of Residence</b>		
Urban	120	110
Rural	130	120
<b>Region</b>		
Western	120 <sup>1</sup>	100
Central		120
Greater Accra	110	100
Volta	140	120
Eastern	120	110
Ashanti	120	100
Brong Ahafo	110	110
Northern		120
Upper East	140 <sup>2</sup>	130
Upper West		130
<b>Religion</b>		
Christian	120	120
Moslem	100	110
Traditional	140	120
No Religion & Others	130	70
<b>Education</b>		
No Education	160	150
Primary	60	160
Middle/JSS/Comm./Tech.	30	80
Secondary/SSS/Higher Education	20	60
<b>Total</b>	<b>130</b>	<b>100</b>

<sup>1</sup> 1960 figure covers both Western & Central

<sup>2</sup> 1960 figure covers Northern, Upper East and Upper

For the country as a whole, the ratios for 1960 and 2000 exceed unity, suggesting that there are more married females than married males. The ratios for all regions have declined over time and this may be due to a decline in polygamous marriages. Declines in the incidence of polygamy may be due to behavioural changes as a result of increased education for females.

The ratios of currently married females to males indeed show significant differences by level of education over time. For instance, the ratio for secondary and higher education in 1960 is only 20 married females to 100 married males but has increased to 60 in 2000, compared with ratios of 150-160 for the less educated even in 2000. The low ratios for the post-primary level may be indicative of the improvement in the education of females over time, but it also means that due to the level of education by a higher proportion of women and the fact that sometimes educated men may marry women with lower level of education, many educated women may not be able to marry the men of their class.

Table 4.9 shows currently married women in polygamous unions by selected background characteristics. Overall, the data show a decline in the prevalence of polygamous unions, from 34.4 per cent in 1980 to 23.0 per cent in 1998, a decline of 33 per cent. The practice of polygamy is more common in rural than urban areas, though the level has declined. The

proportion of married women in polygamous unions appears to be declining in all regions except the Northern Region where it has increased from 40.2 per cent in 1980 to 52.4 per cent in 1998. The rate of polygamy is highest in the three northern regions and Volta. There has been a general decline in prevalence of polygamous unions at all levels of education over the period to the point where the difference between middle/JSS and post-basic education is considerably narrowed. There nevertheless remains a negative relationship between level of education and prevalence of polygamous marriages.

**Table 4.9: Currently Married Women in Polygamous Unions by Selected Background Characteristics**

Selected Characteristics	1979- 1980	1988	1993	1998
<b>Locality of Residence</b>				
Urban				
Rural	33.0	28.3	21.5	15.7
	35.8	34.5	30.7	25.8
<b>Region</b>				
Western	33.5	24.7	24.8	20.9
Central	30.0	28.6	26.9	17.9
Greater Accra	26.7	27.5	18.8	13.9
Volta	27.4	26.6	31.8	28.5
Eastern	43.2	43.8	17.9	17.1
Ashanti	30.5	28.1	23.0	15.9
Brong Ahafo	28.5	32.2	29.0	24.1
Northern	40.2	48.2	44.1	52.4
Upper West	56.3		35.3	34.5
Upper East			32.2	35.6
<b>Education</b>				
No Education	39.4	39.5	35.7	31.6
Primary	28.5	28.3	23.6	22.9
Middle/JSS	27.8	27.1	22.0	16.4
Higher Education	15.8	19.1	17.5	13.0
Total	34.4	32.6	27.7	23.0

Source: 1979/80 Ghana Fertility Survey, 1988, 1993 and 1998 GDHS

Notes: includes Upper West

Includes Upper East and Upper West

Information from the 1960 Post Enumeration Survey and the 1998 Ghana Demographic and Health Survey also indicates a decline in prevalence of polygamous marriages. The proportion of men who are monogamous has increased from 74.1 per cent in 1960 to 87.1 per cent in 1998. All regions experienced an increase in monogamous unions (Table 4.10). Consequently, the proportion of men with two wives and three wives or more has decreased dramatically for most regions, suggesting that polygamy is no longer as desirable as it used to be. This is not surprising given the improvement in female education, the expansion of non-farm activities as alternative avenues for employment and the rising cost of living.

**Table 4.10: Married Males by Number of Wives**

Region	One Wife		Two Wives		Three Wives or More	
	1960	1998	1960	1998	1960	1998
Western	77.8 <sup>1</sup>	86.5	18.0 <sup>1</sup>	12.5	4.2 <sup>1</sup>	1.0
Central	--	91.6	--	6.6	--	1.8
Greater Accra	79.7	91.3	16.9	6.8	3.4	1.9
Volta	67.2	81.8	23.6	16.8	9.2	1.4
Eastern	77.4	89.7	17.8	10.3	4.8	0.0
Ashanti	75.1	93.8	20.0	6.2	4.9	0.0
Brong Ahafo	74.8	85.7	19.2	12.5	6.0	1.8
Northern	67.0 <sup>2</sup>	68.3	23.2 <sup>2</sup>	27.5	9.8 <sup>2</sup>	4.2
Upper East	--	80.6	--	19.4	--	0.0
Upper West	--	82.5	--	12.4	--	5.1
Total	74.1	87.1	19.8	11.7	6.1	1.3

Source: 1960 PES and 2000 census.

Notes : <sup>1</sup> includes Central

<sup>2</sup> 1960 includes Upper East and Upper West

-- Not applicable

## 4.8 Summary and Conclusion

### Summary

The marital characteristics examined from the various data sets show that lower proportions of males and females are currently reported as married for all age groups than earlier times. Similar declines in marriages are observed among the various religious groups as well.

The proportions ever married have also declined between 1960 and 2000 among various sub-groups in the population, even though the notion of a near universality of marriage is still observed. The analysis shows relatively high proportions of females than males widowed or divorced irrespective of time and space.

The mean age at first marriage has increased over the period but the increase is faster among females while for males the age appears to be relatively stable. The gap at first marriage between males and females has therefore narrowed from nine to five years.

### Conclusion

The analysis on marital status has revealed changes in the marital characteristics and behaviour of persons over time. These could be due to behavioural change in relation to the institution of marriage or the general economic environment. Such changes in marital status of people need to be studied further so that policies and programmes could be drawn to deal with whatever implications the transformation may identify.

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## CHAPTER 5: EDUCATION

### 5.1 Introduction

Human resource development essentially relates to the formal education, training and utilization of human potentials for social and economic progress. The five components of human resource development are education; health and nutrition; the environment; employment; and political and economic freedom. These components are interdependent, but education is the basis for the other four because it is an essential factor in the improvement of health and nutrition, for maintaining a high-quality environment, for expanding and improving labour pools, and for sustaining political and economic responsibility. This explains why all countries in the world place major emphasis on educational policy in designing their plans for accelerating development. The recognition of education as the key to socio-economic development has motivated governments to devote a substantial proportion of their resources to the provision and expansion of education.

This chapter aims at updating knowledge on the current levels and trends of educational attainment in Ghana and complements an earlier study of the 1984 census results (Ghana Statistical Service, 1995). The chapter is divided into six sections: overview of education in Ghana; literacy; formal school attendance; educational attendance of the adult population; school enrolment; and summary and conclusions.

#### **Overview of Education in Ghana**

Education is a fundamental human right and Ghana is signatory to Article 26 of the Universal Declaration of Human Rights of 1948, which stipulates that elementary education shall be free and compulsory, and that the higher levels will be equally available to all on the basis of merit. The intrinsic human value of education is its ability to add meaning and value to all people's lives without discrimination. Available evidence suggests, however, that in Ghana education for all is not fully achieved at the primary level after so many years of this declaration. The 1998 Ghana Demographic and Health Survey (GDHS) indicates that quite a substantial proportion of the Ghanaian population has no education (Ghana Statistical Service and Macro International Inc., 1999). About one in five males and one in three females have no education, and the median number of years of schooling is 4.9 years for males and 2.3 years for females. Males have twice as many years of education as females.

The picture is even more grim when higher levels of education are considered. The 1998 GDHS shows that only 12 per cent of men and 6 per cent of women have attended secondary school (Ghana Statistical Service and Macro International Inc., 1999). Evidence from elsewhere reinforces the fact that levels of educational attainment are still low in the country (World Bank, 2003; 2000; Ghana Statistical Service and Macro International Inc., 1994; Adow, 1993). School dropout rate in 1997 was about 20 per cent for boys and 30 per cent for girls at the primary level, and 15 per cent for boys and 21 per cent for girls at the junior secondary level (Ministry of Education, 1997).

The proportion of the population aged six years and older who have never been to school has dropped from about 78 per cent in 1960 to 34 per cent in 1992 (Ministry of Education, 1995). In general, the proportion of males with no education declined from 26 per cent in 1993 to 21 per cent in 1998, while the proportion of females with no education fell from 38 per cent in 1993 to 34 per cent in 1998 (Ghana Statistical Service and Macro International Inc., 1999; 1994). The 1998 GDHS results also reveal that the age specific proportion with no education range from 66 per cent for males aged 65 years and older to 13 per cent for males aged 10-14 years, while the figures for women are 89 per cent for the 65 years and older and 14 per cent for the 10-14 years age group.

There are marked differentials in educational attainment in Ghana when certain characteristics are examined. For example, while 17 per cent of urban dwellers have no education, in rural areas it is 29 per cent. The nation's capital region, Greater Accra, has by far the highest level of education compared with other regions.

Following political independence in 1957, successive governments in Ghana have pursued various policies with a view to reducing illiteracy to a minimum. The national education policy after independence aimed at providing basic education for all, while raising the quality of education generally. To this end, the Education Act of 1961 provided for free compulsory primary education, and for measures to be taken by the state to improve the quality of education by training large numbers of teachers and providing textbooks and other educational materials. As a result of the implementation of these policies, enrolment in basic education (primary and middle school) increased from 586,000 in the 1965/1966 academic year to 2.6 million in the 1994/1995 academic year, representing an increase of 344 per cent over the period (Ministry of Education, 1990; 1995; 1996a; 1996b). Estimates from other sources support the 1998 GDHS findings that the objectives of the laudable programme of free compulsory universal basic education (FCUBE), are far from being achieved (World Bank, 2000; 2003; Adow, 1993).

In 1989 Ghana adopted the present 6-3-3-4 system of education. According to this system, basic education commences at age 6 and involves six years of primary education and 3 years of junior secondary education, with another 3 years of senior secondary education followed by 4 years of tertiary education. In addition to university education, there are numerous post-secondary institutions in the country that offer technical, vocational, and professional training, which may be classified as tertiary or non-tertiary depending on certificate/diploma awarded.

### **Data Sources and Quality**

The principal data source for this study is the 2000 Population and Housing Census of Ghana. This is supported with data from the 1960, 1970 and 1984 censuses, to establish trends in educational attainment. Available evidence from the Ministry of Education and national surveys are also utilized whenever necessary to strengthen the discussion.

It is undeniable that some people in Ghana and other parts of the world have traditionally acquired their skills, knowledge and attitudes from institutions other than formal schools. Information provided on this important component of education from other sources, however, may not be reliable and representative of the actual levels of non-formal education in the country and therefore have not been used.

## 5.2 Literacy

Literacy is an important indicator of the effectiveness by which a society could transmit its culture from generation to generation in written form. The ability to read and write is an essential component of developing intellectual, moral and practical capacities in which the family, the community and the media are influential agents. Literacy is profoundly influenced by socio-economic and cultural factors, and plays a role in determining the capacity of the individual to profit from the planned activities of formal and non-formal education (University of Linköping, 1990).

### Trends in Literacy

A number of international conferences, such as the World Conference on Education for All in Jomtien in 1990 and the World Education Forum in Dakar in 2000, emphasize the importance of literacy for the development of the individual and society. To be able to read and write has been acknowledged as a human right. These basic skills are needed to build and sustain a livelihood, to participate in society, and are a stimulus for further learning.

Table 5.1 presents the distribution of literacy levels for persons aged 15 years and above by region and sex, from the findings of the 2000 Census. For the country as a whole, 42.6 per cent of the population are illiterate; while 16.4 per cent are literate in English only, 2.5 per cent are literate in a local language only and 38.1 per cent are literate in both English and a Ghanaian language. There is a higher proportion of illiterate females (50.2%) than males (33.6%), with the highest proportion of the literate population having knowledge of both English and a Ghanaian language (45.3% for males and 31.2% for females). The high level of illiteracy in the country is a source of concern since it is not compatible with the national goal of sustainable social and economic development.

Differences in access to economic opportunities, reinforced by cultural practices, are largely responsible for the much higher illiteracy of females and rural populations. The regional differences in literacy levels in Ghana are also a reflection of the different levels of socioeconomic development in the country. Accra is the capital and administrative centre of Ghana, while Tema, Accra and Kumasi are the nation's major commercial centres. It is not surprising, therefore, that the benefits of modernization, which include exposure to various means of communication through radio, television, newspapers, etc., and infrastructural facilities are concentrated in Greater Accra and Ashanti more than in any other region and in the cities and major towns.

At the regional level, the Table indicates that for both sexes Greater Accra has the lowest illiteracy rate (18.4%), followed by Ashanti (35%) and Eastern (36.4%). The highest illiteracy levels are found in the three northern regions of Ghana (76.2% for Northern, 76.5% for Upper East and 73.4% for Upper West). The larger proportion of the literate population in all, except the three northern regions, know how to read and write in both English and a Ghanaian language. In contrast, the larger proportion of the literate population in Northern, Upper East, and Upper are literate in English only. In almost all regions the proportion of illiteracy among females is about one and a half times that among males. Consequently, male literacy rate is higher than that of females for almost all literacy categories. Illiteracy is much higher in rural (55.6%) than urban (26.9%) areas; and in both females have higher illiteracy levels (34.2%, urban and 64.5%, rural) than males (19.2% for urban and 46.4% for rural).

**Table 5.1: Literacy Level in Ghana by Region and Sex, 2000**

Region	All Levels	Not Literate	Language of literacy			
			English Only	Ghanaian Only	English Ghanaian	Other
<u>Both Sexes</u>						
All Regions	11,105,236	42.6	16.4	2.5	38.1	0.8
Western	1,108,272	41.8	18.7	1.8	36.9	0.8
Central	904,579	42.9	16.6	2.0	37.9	0.6
Greater Accra	1,945,284	18.4	30.0	2.3	48.2	1.2
Volta	963,811	41.7	8.3	4.5	44.5	1.0
Eastern	1,227,612	36.4	13.4	3.3	46.4	0.5
Ashanti	2,096,121	35.0	12.9	3.2	48.1	0.8
Brong Ahafo	1,033,609	48.5	11.7	2.0	37.3	0.5
Northern	978,774	76.2	13.4	1.5	8.3	0.6
Upper East	520,863	76.5	14.4	1.3	7.0	0.8
Upper West	326,311	73.4	13.4	1.1	10.9	1.2
<u>Male</u>						
All Regions	5,435,829	33.6	17.7	2.4	45.3	0.9
Western	566,878	32.0	20.2	1.8	45.2	0.9
Central	414,157	30.2	18.5	2.0	48.7	0.7
Greater Accra	968,566	12.1	31.6	1.7	53.4	1.2
Volta	452,887	31.3	9.3	4.3	54.0	1.2
Eastern	590,133	26.4	14.4	3.0	55.5	0.6
Ashanti	1,055,021	27.6	12.6	3.1	55.8	0.9
Brong Ahafo	518,542	41.1	11.8	2.0	44.5	0.6
Northern	483,460	69.7	16.4	1.8	11.4	0.8
Upper East	237,408	70.2	18.0	1.4	9.4	0.9
Upper West	148,777	66.9	16.0	1.3	14.3	1.5
<u>Female</u>						
All Regions	5,669,407	50.2	15.2	2.7	31.2	0.7
Western	541,394	52.1	17.2	1.8	28.2	0.7
Central	490,422	53.7	15.0	2.0	28.8	0.5
Greater Accra	976,718	24.6	28.3	2.4	43.1	1.1
Volta	510,924	50.9	7.4	4.7	36.2	0.8
Eastern	637,479	45.6	12.5	3.6	37.9	0.4
Ashanti	1,041,100	42.4	13.2	3.4	40.4	0.7
Brong Ahafo	515,067	56.0	11.5	2.0	30.2	0.4
Northern	495,314	82.6	10.4	1.3	5.2	0.5
Upper East	283,455	81.8	11.3	1.2	4.9	0.7
Upper West	177,534	78.8	11.3	0.9	8.0	1.0

Table 5.2 shows statistics of participants in the Ministry of Education literacy and functional skills programme between 1992 and 1998. The programme seems to have achieved reasonably high enrolments (more than 200,000 learners each year), especially among females who constitute 60.4 per cent of participants. Of the more than one million participants over the period, 80.6 per cent graduated from the Government's non-formal education programme between 1992 and 1998; the lowest graduation rate is 75.4 per cent in 1994/1995. There is very little difference in performance overall between males and females. The best performance year for females (86.0%) is 1995/1996; and men (86.8%), it is 1996/97. Male performance is slightly higher than that of females in 1994/95 and 1997/98, and the same in 1993/94.

Evidence from other sources supports the observation that literacy levels are improving. The 1997 Ghana Core Welfare Indicators Questionnaire Survey records adult literacy level as 48 per cent, with significant sex differential (62% of adult male literacy and 36% of females) and urban-rural differential (60% urban literacy and 40% rural).

**Table 5.2: Participants in the Literacy and Functional Skills Programme: 1992 – 1998.**

Batch	Participants Recruited			Proportion Graduating			Proportion of Drop-Out		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1993/94	201,760	80,224	121,536	83.0	83.0	83.0	17.0	17.0	17.0
1994/95	278,209	108,078	170,131	75.4	76.9	74.4	24.6	23.1	25.6
1995/96	211,226	85,488	125,738	82.4	77.1	86.0	17.6	22.9	14.0
1996/97	209,226	82,615	126,611	83.8	86.8	81.9	16.2	13.2	18.1
1997/98	219,299	87,120	132,179	80.0	80.5	79.6	20.0	19.5	20.4
<b>Total</b>	<b>1,119,720</b>	<b>443,525</b>	<b>676,195</b>	<b>80.6</b>	<b>80.6</b>	<b>80.5</b>	<b>19.4</b>	<b>19.4</b>	<b>19.5</b>

Sources: Statistics of Ministry of Education, Non-Formal education Division, Monitoring Section, Accra.

### 5.3 Educational Attainment

Although literacy may be acquired through reading and private informal channels, the formal educational system remains the best means for improving access to information and broadening the horizon of the people. It prepares people for the life of work and provides the needed tools for all who pass through the system contribute to the socio-economic development of the country. As a result, extending basic level of education to all should be a goal for all nations (World Bank, 2003; UNESCO, 2002; Ministry of Education, 1997; Bennell, 2002; Appleton, 1999; Mingat, 1998).

Table 5.3 presents school attendance of persons aged six years and older since 1960 and it shows tremendous progress in the level of attendance for both sexes. The proportion of the population that never attended school, has declined by almost a half from 73.0 per cent in 1960 to 38.8 per cent in 2000. Similarly, it has reduced from 63.3 per cent in 1960 for males to 33.1 per cent in 2000 and from 83.0 per cent to 44.5 per cent for females over the period. Conversely, the proportion presently in school has almost doubled from 14.2 per cent in 1960 to 26.1 per cent in 2000 while that of past attendance has almost tripled from 12.8 per cent to 35.0 per cent over the period. The improvement appears to have been relatively more remarkable for females, and the gap between male and female has thus narrowed over the period. While the proportion of males presently in school as well as those who attended in the past is higher than that of females for all the years, the rate of increase in the proportion for females (154.2% for present and 320.3% for past) is thrice as high as for males (49.2% for present and 117.2% for past). The bridging of the gap may be attributed in part to the sustained efforts of government and NGOs at educating the girl-child.

**Table 5.3: Trend in School Attendance (six years and older) by Sex**

School Attendance	Both Sexes				Males				Female			
	1960	1970	1984	2000	1960	1970	1984	2000	1960	1970	1984	2000
Never	73.0	56.8	43.5	38.8	63.3	47.3	35.0	33.1	83.0	66.2	51.8	44.5
Present	14.2	24.4	27.6	26.1	18.7	28.5	31.6	27.9	9.6	20.4	23.7	24.4
Past	12.8	18.8	28.9	35.0	18.0	24.2	33.4	39.1	7.4	13.1	24.5	31.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	5,198,747	6,671,500	9,837,586	15,580,54	2,642,96	3,306,029	4,831,936	7,694,902	2,555,785	3,365,471	5,005,650	7,885,639

The increase in the proportion attending school could be a response to an appreciation by both parents and children that formal education has immense benefits in the areas of individual well being and national development. Government's efforts at sensitizing parents of the need to send their children and wards to school appear to be on the right track.

Table 5.4 indicates that 38.8 per cent of persons aged six years and older have never attended school, 57.9 per cent of whom are females. Although proportion of those who never attended has improved over the decades, it is still rather high, considering the efforts, such as the Accelerated Development Plan of 1951 and the Educational Act of 1961, that have been made to increase school enrolment and encourage parents and guardians to send their wards to school. The results are particularly surprising for females (44.5%) and probably mean that the promotion of the education of the girl-child still has a long way to go in achieving its objectives. The narrower gap between the currently attending (27.9% cf 24.4%) as against past attendance (39.1% cf 31.1%) appears though to have hope for the future as far as female education is concerned.

Greater Accra has the lowest proportion (20.7%) who never attended school, followed by Eastern (30.7%) and Ashanti (33.2%), while the highest proportions of never educated are in the three northern regions of Northern (72.3%), Upper East (69.4%) and Upper West (69.8%). The pattern remains the same for both males and females, but the proportions are for all regions, the level of higher for females than for males. Indeed, for all regions except Greater-Accra, the proportion that never attended school is the largest; in contrast, the proportion for males is largest for past attendance (the northern regions excluded); possibly a reflection of the lack of interest in female education in the past.

**Table 5.4: School Attendance of Persons Aged Six years and Older by Region and Sex**

Region / Sex	Total		Never		Now		Past	
	N	Percent	N	Percent	N	Percent	N	Percent
<b>All Regions</b>	15,580,541	100.0	6,052,208	38.8	4,070,938	26.1	5,457,395	35.0
Male	7,694,902	100.0	2,546,422	33.1	2,143,383	27.9	3,005,097	39.1
Female	7,885,639	100.0	3,505,786	44.5	1,927,555	24.4	2,452,293	31.1
<b>Western</b>								
Total	1,575,933	100.0	568,238	36.1	446,998	28.4	560,697	35.6
Male	803,131	100.0	237,444	29.6	234,538	29.2	331,149	41.2
Female	772,802	100.0	330,794	42.8	212,460	27.5	229,548	29.7
<b>Central</b>								
Total								
Male	1,301,026	100.0	440,435	33.9	401,173	30.8	459,418	35.3
Female	614,987	100.0	152,171	24.7	210,920	34.3	251,896	41.6
<b>Greater Accra</b>	686,039	100.0	288,264	42.0	190,253	27.7	207,522	30.2
Total								
Male								
Female	2,523,895	100.0	523,398	20.7	681,268	27.0	1,319,229	52.3
<b>Volta</b>	1,246,369	100.0	199,684	16.0	343,624	27.6	703,061	56.4
Total	1,277,526	100.0	323,714	25.3	337,644	26.4	616,168	48.2
Male								
Female	1,359,409	100.0	505,700	37.2	386,497	28.4	467,212	34.4
<b>Eastern</b>	653,703	100.0	195,538	29.9	205,335	31.4	252,930	38.7
Total	705,706	100.0	310,162	44.0	181,162	25.7	214,382	30.4
Male								
Female	1,739,535	100.0	533,723	30.7	513,068	29.5	692,744	39.8
<b>Ashanti</b>	852,694	100.0	204,270	24.0	271,563	31.8	376,861	44.2
Total	886,841	100.0	329,453	37.1	241,505	27.2	315,883	35.6
Male								
Female								
<b>Brong Ahafo</b>	2,691,021	100.0	982,690	33.2	806,439	27.2	1,171,892	39.6
Total	1,488,016	100.0	434,654	29.2	418,146	28.1	635,216	42.7
Male	1,473,005	100.0	548,036	37.2	388,293	26.4	536,676	36.4
Female								
<b>Northern</b>								
Total	1,473,462	100.0	618,998	42.0	405,771	27.5	448,693	30.5
Male	741,338	100.0	272,829	36.8	216,029	29.1	252,480	34.1
Female	732,124	100.0	346,169	47.3	189,742	25.9	196,213	26.8
<b>Upper East</b>								
Total	1,421,343	100.0	1,027,024	72.3	225,520	15.9	168,799	11.9
Male	711,066	100.0	473,904	66.6	132,275	18.6	104,887	14.8
Female	710,277	100.0	553,120	77.9	93,245	13.1	63,912	9.0
<b>Upper West</b>								
Total								
Male	753,864	100.0	523,441	69.4	128,122	17.0	102,301	13.6
Female	359,733	100.0	230,136	64.0	70,196	19.5	59,401	16.5
	394,131	100.0	293,305	74.4	57,926	14.7	42,900	10.9
	471,053	100.0	328,561	69.8	76,082	16.2	66,410	14.1
	223,865	100.0	145,792	65.1	40,757	18.2	37,316	16.7
	247,188	100.0	182,769	73.9	35,325	14.3	29,094	11.8

Trends in school attendance among the school-going group (6-24 years) follow the pattern for the larger population (6 years and older). Table 5.5 shows that the proportion never attended has declined from 59.7 per cent to 26.6 per cent over the 1960-2000 period, a decline of 55.4 per cent. The decline is particularly significant for the 1960-1970 period and this may be a reflection of government's educational policy at the time, to increase school enrolment. Though the sex differential is apparent for all years, the decline in never attended is much faster for females than males, resulting in a narrowing of the gap.

There are corresponding increases in the proportion currently in school or no longer in school. The proportion of males presently in school has increased by more than a third (from 37.7% in 1960 to 52.5% in 2000) while that for past attendance has increased by more than half (from 15.0% to 23.5%) over the 1960-2000 period. On the other hand, the proportion for females has increased by over one and a half times for both current attendance (from 18.9% to 47.8%) and past attendance (from 8.9% to 23.1%). The proportion of males presently in school has however declined between 1984 and 2000, with the proportion never attended virtually unchanged.

The reasons for the drop in current male school attendance and imperceptible change in proportion that never attended school is not clear, but could well be from increased drop-outs, which may be a reflection of children's disinterested in school or parents/guardians exploiting children to supplement household income. Whatever the reason, it is as worrisome as it is unwelcome and needs to be urgently addressed.

**Table 5.5: Trend in School Attendance (6-24 years) by Sex**

School Attendance	Both Sexes				Male				Female			
	1960	1970	1984	2000	1960	1970	1984	2000	1960	1970	1984	2000
Never	59.7	38.8	29.7	26.6	47.3	30.5	24.5	24.0	72.2	47.0	35.0	29.1
Present	28.3	45.1	50.2	50.1	37.7	52.3	56.2	52.5	18.9	38.0	44.1	47.8
Past	12.0	16.1	20.1	23.3	15.0	17.2	19.3	23.5	8.9	15.0	20.9	23.1
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>N</b>	2,600,426	3,587,338	5,379,012	7,959,878	1,302,288	1,783,632	2,691,453	3,983,286	1,298,138	1,803,706	2,687,559	3,976,592

The youth need to be equipped with the requisite skills and knowledge in a significant way to impact Ghana's development objectives, of which will not be achieved if the proportion of the population in school drops instead of increasing.

A look at the regional differentials of school attendance of the 6-24 year olds shows some striking results. Table 5.6 indicates that except for Northern, Upper East and Upper West where the majority of young persons have no schooling, the majority in all other regions are currently in school. This is true for both males and females. It is also interesting to note that the proportion that has previously been to school is almost the same for both males and females and that this is true for almost all regions. On the other hand, there are substantial differentials in the proportions never attended and presently attending. For all regions, the proportion of females who have never been to school is higher than that of males, while the proportion of males presently in school is higher than that of females.



**Table 5.6 School Attendance of Persons Aged 6-24 Years by Region and Sex**

Region / Sex	Total		Never		Now		Past	
	N	Percent	N	Percent	N	Percent	N	Percent
<b>All Regions</b>	<b>7,959,878</b>	<b>100.0</b>	<b>2,114,469</b>	<b>26.6</b>	<b>3,992,589</b>	<b>50.1</b>	<b>1,852,820</b>	<b>23.3</b>
Male	3,983,286	100.0	955,513	24.0	2,092,333	52.5	935,440	23.5
Female	3976,592	100.0	1,158,956	29.1	1,900,256	47.8	917,380	23.1
<b>Western</b>								
Total								
Male	809,932	100.0	182,197	22.5	441,782	54.5	185,953	23.0
Female	406,559	100.0	78,669	19.8	231,343	56.9	96,547	23.7
<b>Central</b>	403,373	100.0	103,528	25.7	210,439	52.2	89,406	22.1
Total								
Male								
Female	671,298	100.0	118,964	17.7	392,897	58.5	159,437	23.8
<b>GreaterAccra</b>	333,698	100.0	49,355	14.8	205,520	61.6	78,823	23.6
Total	337,600	100.0	69,609	20.6	187,377	55.5	80,614	23.9
Male								
Female	1,236,987	100.0	183,547	14.8	661,500	53.5	391,940	31.7
<b>Volta</b>	598,634	100.0	73,506	12.3	330,865	55.3	194,263	32.4
Total	638,353	100.0	110,041	17.2	330,635	51.8	197,677	31.0
Male								
Female								
<b>Eastern</b>	689,724	100.0	164,669	23.9	379,663	55.0	145,392	21.1
Total	348,995	100.0	75,648	21.7	200,762	57.5	72,585	20.8
Male	340,729	100.0	89,021	26.1	178,901	52.5	72,807	21.4
Female								
<b>Ashanti</b>	880,514	100.0	160,543	18.2	505,687	57.4	214,284	24.3
Total	446,365	100.0	72,468	16.2	267,010	59.8	106,887	29.0
Male	434,149	100.0	88,075	20.3	238,677	55.0	107,397	24.7
Female								
<b>Brong Ahafo</b>	1,521,730	100.0	313,019	20.6	794,643	52.2	414,068	27.2
Total	751,479	100.0	135,247	18.0	410,703	54.7	205,529	27.3
Male	770,251	100.0	177,772	23.1	383,940	49.8	208,539	27.1
Female								
<b>Northern</b>								
Total	778,459	100.0	211,465	27.2	399,271	51.3	167,723	21.5
Male	393,914	100.0	96,954	24.6	211,837	53.8	85,123	21.6
Female	384,545	100.0	114,511	29.8	187,434	48.7	82,600	21.5
<b>Upper East</b>								
Total	752,983	100.0	449,087	59.6	218,189	29.0	85,707	11.4
Male	387,524	100.0	212,168	54.8	126,835	32.7	48,521	12.5
Female	365,459	100.0	236,919	64.8	91,354	25.0	37,186	10.2
<b>Upper West</b>								
Total								
Male	378,092	100.0	196,314	51.9	125,105	33.1	56,673	15.0
Female	193,830	100.0	94,984	49.0	68,181	35.2	30,665	15.8
	184,262	100.0	101,330	55.0	56,924	30.9	26,008	14.1
	240,159	100.0	134,664	56.1	73,852	30.7	31,643	13.2
	122,288	100.0	66,514	54.4	39,277	22.1	16,497	13.5
	117,871	100.0	68,150	57.8	34,575	29.8	15,146	12.9

#### 5.4 Past School Attendance

Information on past school attendance is an important indicator of the level of socio-economic development because a society where few people have attended formal school in the past is a society that is characterized by very limited skilled manpower. Table 5.7 shows the distribution of past school attendance for persons aged six years and older classified by region and highest level of schooling. It is not surprising that persons with pre-school level of education constitute the least proportion of those who have previously attended school,

because the pre-school as a formal structure is very recent, not widespread, largely urban-based and patronized predominantly by the formal sector workers who are likely to want their children/wards to have more than pre-schooling. The majority of persons who have attended school previously in all regions have attained at least the highest basic education level, that is middle/JSS. Indeed, less than a fifth of these in all regions except Volta and the three northern regions reached just the primary level. In the three northern regions the level attained by the highest proportion (between 30 and 41 per cent) is the primary, and for the Volta region 21 per cent.

**Table 5.7: Past School Attendance (six years and older) by Highest Level Attained by Region and Sex**

Highest Level Attained	All Regions	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West
<b>Both Sexes</b>											
Pre School	0.5	0.6	0.5	0.5	0.5	0.4	0.7	0.5	0.7	0.9	1.0
Primary	16.7	16.6	18.6	11.0	21.1	17.7	14.9	17.0	31.5	41.0	30.8
Middle/JSS	52.5	56.5	56.7	47.1	51.8	58.4	57.9	56.2	25.9	25.2	27.0
Secondary/SSS	13.1	11.3	9.7	18.9	10.6	9.5	11.9	11.2	17.1	14.0	15.5
Vocational/Technical/Com.	7.0	6.2	5.3	11.4	5.6	4.9	5.6	4.4	7.3	6.5	8.6
Post Secondary	5.1	4.4	4.9	4.6	6.0	5.2	4.6	6.1	7.7	6.8	8.4
Tertiary	5.1	4.5	4.3	6.6	4.5	3.9	4.4	4.6	9.7	5.7	8.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	5,457,395	560,697	459,418	1,319,229	467,212	692,744	1,171,892	448,693	168,799	102,301	66,410
<b>Male</b>											
Pre School	0.5	0.5	0.4	0.4	0.4	0.4	0.6	0.5	0.7	0.8	0.8
Primary	14.2	14.0	15.6	8.7	18.0	14.6	12.5	14.7	28.0	38.8	29.0
Middle/JSS	51.9	56.9	57.2	45.8	51.3	58.5	57.0	55.2	25.8	25.4	26.8
Secondary/SSS	14.8	12.7	11.0	20.6	12.4	11.0	13.8	13.5	19.6	15.0	17.2
Vocational/Technical/Com.	7.5	6.6	5.8	12.2	6.2	5.6	6.1	4.7	7.5	6.7	8.4
Post Secondary	5.1	4.1	5.1	4.0	6.4	5.4	4.6	6.5	8.3	7.1	8.9
Tertiary	6.1	5.1	4.9	8.4	5.2	4.5	5.3	4.9	10.2	6.2	9.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	3,005,097	331,149	251,896	703,061	252,830	376,861	635,216	252,480	104,887	59,401	37,316
<b>Female</b>											
Pre School	0.6	0.7	0.5	0.5	0.5	0.4	0.7	0.6	0.8	1.0	1.2
Primary	19.7	20.5	22.3	13.6	13.6	21.5	17.7	19.9	37.2	44.0	33.2
Middle	53.2	55.9	56.2	48.6	48.6	58.3	59.0	57.5	26.0	24.8	27.2
Secondary/SSS	11.0	9.2	8.2	16.9	16.9	7.6	9.6	8.3	13.1	12.6	13.5
Vocational/Technical/Com.	6.4	5.6	4.7	10.5	4.8	4.2	5.0	4.1	7.0	6.2	9.0
Post Secondary	5.1	4.7	4.6	5.2	5.5	5.0	4.6	5.6	6.8	6.3	7.8
Tertiary	4.0	3.5	3.5	4.5	3.7	3.1	3.3	4.1	9.0	5.1	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	2,452,298	229,548	207,522	616,168	214,382	315,883	536,676	196,213	63,912	42,900	29,094

The general pattern is the same for males and females, except that the level of education for females is a little lower than that for males. Thus, the proportion that attained pre-school or primary as the highest level is higher for females than males in all regions. Moreover, for six of the ten regions (Greater-Accra, Volta, Ashanti, Brong Ahafo, Northern and Upper West) also, the proportion with middle/JSS as the highest level attained is higher for females than males. In contrast, the proportions attaining levels beyond the basic are higher for males than females and this is true for all regions.

The withdrawal of teenage girls from school for marriage, teenage pregnancy, reluctance of parents/guardians to invest in girl-child education and the withdrawal of girls to help in domestic chores and family enterprises may account for the lower proportion (26.5%) of females than males (33.5%) who attain educational levels beyond the basic. Post-basic education is important in providing the individual with skills necessary to enter formal employment and to contribute meaningfully in other ways to the development effort of the country. Every effort should therefore be made to provide the opportunities and to encourage a greater proportion of the population to pursue secondary and tertiary education, particularly professional and technical middle level human resource training programmes.

As observed earlier from Table 5.4, there is a pronounced disparity in past school attendance between the three northern regions (less than 15%) and the others regions (more than 30%),

which may be a reflection of the late entry of the former into the schooling system. What is significant from Table 5.7, however, is that those in the three northern regions who had the opportunity of education in the past proceeded to much higher levels than those from the other regions. With the exception of Greater-Accra, the proportion of those who have been to school before who attained secondary or vocational/technical level, post-secondary and tertiary levels is highest in the three northern regions. For the country as a whole, 30.3 per cent of those previously educated attained post-basic level. The proportion is higher in only four regions, Greater-Accra (41.5%), Northern (41.8%), Upper East (33.0%) and Upper West (41.1%). The higher proportions for the northern regions may be partly due to the fact that education was free for students from these areas and therefore finance was not a constraint.

## 5.5 Current School Attendance

From the point of view of policy and decision-making, current school attendance is even more relevant than past attendance as it focuses on the potential in the population for implementing national programmes and for sustaining the development effort. Table 5.8 presents the profile of the over 4 million (26.1% of total) persons aged six years and older currently in school. Of the number of persons currently enrolled in school, 52.7 per cent are male with 47.3 per cent female. Since persons presently in school are largely of the school-going population, it is not surprising that the bulk (more than 80%) is at the basic education level. The educational policy of the country provides that pupils turn six years before enrolling in primary class one. Because of this, children who turned six years after the 1999/2000 school year were likely to be still in pre-school at the time of the 2000 census.

**Table 5.8 Present School Attendance six years and older by Educational Level Attending by Region and Sex**

Level Attending	Total	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West
<b>Both Sexes</b>											
Pre School	3.5	4.2	4.1	2.8	3.2	3.6	3.5	3.9	2.9	2.5	2.8
Primary	60.3	64.3	62.2	51.7	59.0	62.4	63.2	62.1	59.6	61.6	57.6
Junior Secondary	22.3	21.3	22.5	23.7	23.2	23.1	22.1	22.4	18.6	19.6	21.0
Senior Secondary	8.3	6.4	5.9	12.8	8.9	6.9	6.8	7.3	10.5	9.6	10.4
Vocational/Technical/Com.	1.9	1.5	1.3	3.0	2.1	1.4	1.3	1.5	2.9	2.4	3.0
Post Secondary	1.7	1.1	1.4	2.1	2.1	1.2	1.3	1.3	3.2	2.5	3.1
Tertiary	2.1	1.3	2.5	4.0	1.5	1.4	1.7	1.4	2.4	1.8	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	4,070,938	446,998	401,173	681,268	386,497	513,068	806,439	405,771	225,520	128,122	76,082
<b>Male</b>											
Pre School	3.3	3.9	3.8	2.8	3.0	3.4	3.5	3.7	2.6	2.3	2.6
Primary	58.6	62.8	60.7	50.2	56.7	60.7	62.0	60.2	56.0	59.1	55.3
Junior Secondary	22.6	21.9	23.1	23.3	23.5	23.8	22.4	22.9	19.3	20.0	21.2
Senior Secondary	8.9	7.0	6.4	13.1	9.8	7.5	7.3	8.2	11.8	10.5	11.3
Vocational/Technical/Com.	2.1	1.6	1.4	3.2	2.4	1.6	1.4	1.7	3.3	2.8	3.1
Post Secondary	1.9	1.2	1.3	2.3	2.6	1.4	1.4	1.7	4.0	3.2	4.0
Tertiary	2.6	1.5	3.2	5.1	1.9	1.7	2.1	1.7	3.0	2.1	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	2,143,383	234,538	210,920	343,624	205,335	271,563	418,146	216,029	132,275	70,196	40,757
<b>Female</b>											
Pre School	3.6	4.4	4.4	2.8	3.3	3.7	3.6	4.2	3.4	2.8	3.1
Primary	62.3	66.1	63.9	53.2	61.6	64.4	64.5	64.3	64.6	64.5	60.2
Junior Secondary	21.9	20.5	21.9	24.1	22.9	22.3	21.7	21.8	17.6	19.0	20.7
Senior Secondary	7.6	5.7	5.5	12.5	7.9	6.3	6.3	6.4	8.6	8.6	9.4
Vocational/Technical/Com.	1.7	1.4	1.1	2.7	1.7	1.2	1.3	-	2.2	2.0	2.9
Post Secondary	1.4	1.0	1.5	1.8	1.4	1.0	1.2	1.3	2.0	1.7	2.2
Tertiary	1.5	1.0	1.7	2.9	1.1	1.1	1.3	1.0	1.6	1.4	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	1,927,555	212,460	190,253	337,644	181,162	241,505	388,293	189,742	93,245	57,926	35,325

About 60 per cent are enrolled at the primary level, 20 per cent at the JSS and 10 per cent at the immediate post-basic level (senior secondary, vocational/technical/commercial). These levels are a reflection of the factor of population size relative to available capacity, than of dropout levels. The pupils in primary and junior secondary levels constitute about two-thirds of the target age populations (6-11 and 12-14 years), while those in senior secondary make up half of the 15-17 age group. The large difference between primary and junior secondary levels is therefore explainable in terms of population, the primary level covering twice as many age cohorts as the junior secondary level. The proportion of students in senior secondary as against vocational/technical/commercial is a clear indication of preference based on the perception that the academic-grammar type of education is for the brilliant while the technical/vocational is for the less brilliant. These observations are generally true for all regions and for both sexes.

Table 5.9 presents data on persons aged 6-24 years presently in school and male/female differentials among those presently in school by region and locality. As is expected, the majority of the population in this age bracket (50.1%) are in school and this is reflected at the regional and urban/rural locality levels as well as among the sexes. One observes from the Table that for the regions, except Greater-Accra and Ashanti, the majority of school children are in rural areas and it is true for both males and females. This is because the rural proportion (57%) is much higher than the urban (43%). The fact that the proportion of urban children in school is 48.7 per cent, however, means that there is a gain at the expense of rural children.

The Table also indicates that in all regions, except Greater Accra, both urban and rural, there is a higher proportion of males among school children. In Greater Accra, there is an equal share of males and females among school children, while the proportion of females (50.4%) among urban children is higher than for males (49.6%). Finally, for every region, the proportion of males among school children is higher in rural than urban areas, while the reverse is true for females.

Table 5.9: Present School Attendance of Persons Aged 6 – 24 Years by Region, Sex and Locality of Residence

Region / Sex	All Localities		Urban		Rural	
	N	Percent	N	Percent	N	Percent
<b>All Regions</b>	3,992,589	100.0	1,945,495	100.0	2,047,094	100.0
Male	2,092,333	52.4	982,829	50.5	1,109,504	54.2
Female	1,900,256	47.6	962,666	49.5	937,590	45.8
<b>Western</b>						
Total	441,782	100.0	172,790	100.0	268,992	100.0
Male	231,343	52.4	86,473	50.1	144,870	53.9
Female	210,439	47.6	86,317	49.9	124,122	46.1
<b>Central</b>						
Total	392,897	100.0	145,802	100.0	247,095	100.0
Male	205,520	52.3	73,465	50.4	132,055	53.4
Female	187,377	47.7	72,337	49.6	115,040	46.6
<b>Greater Accra</b>						
Total	661,500	100.0	582,225	100.0	79,275	100.0
Male	330,865	50.0	289,039	49.6	41,826	52.8
Female	330,635	50.0	293,186	50.4	37,449	47.2
<b>Volta</b>						
Total	379,663	100.0	114,538	100.0	265,125	100.0
Male	200,762	52.9	58,474	51.1	142,288	53.7
Female	178,901	47.1	56,064	48.9	122,837	46.3
<b>Eastern</b>						
Total	505,687	100.0	189,674	100.0	316,013	100.0
Male	267,010	52.8	95,988	50.6	171,022	54.1
Female	238,677	47.2	93,686	49.4	144,991	45.9
<b>Ashanti</b>						
Total	794,643	100.0	413,750	100.0	380,893	100.0
Male	410,703	51.7	207,327	50.1	203,376	53.4
Female	383,940	48.3	206,423	49.9	177,517	46.6
<b>Brong Ahafo</b>						
Total	399,271	100.0	169,538	100.0	229,733	100.0
Male	211,837	53.1	86,682	51.1	125,155	54.5
Female	187,434	46.9	82,856	48.9	104,578	45.5
<b>Northern</b>						
Total	218,189	100.0	104,121	100.0	114,068	100.0
Male	126,835	58.1	58,153	55.9	68,682	60.2
Female	91,354	41.9	45,968	44.1	45,386	39.8
<b>Upper East</b>						
Total	125,105	100.0	30,574	100.0	94,531	100.0
Male	68,181	54.5	15,776	51.6	52,405	55.4
Female	56,924	45.5	14,798	48.4	42,126	44.6
<b>Upper West</b>						
Total	73,852	100.0	22,483	100.0	51,369	100.0
Male	39,277	53.2	11,452	50.9	27,825	54.2
Female	34,575	46.8	11,031	49.1	23,544	45.8

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Table 5.10 presents current school attendance for persons aged 6-24 years by age groups, corresponding to the target levels, sex and urban/rural residence. As observed earlier, there is a gradual decline in enrolled children at older ages. This general pattern is true for both males and females as well as for urban and rural school group population. In addition, it is observed that for age groups 6-11 years and 12-14 years (corresponding to basic education level), the proportions are higher for female, while it is higher for male at older age groups. Similarly, the proportions are higher for rural areas at the lower age groups and higher for urban at the older age groups.

**Table 5.10: Present School Attendance (Aged 6 – 24 years) by Age Group and Locality of Residence**

Age Group/Locality	Total		Male		Female	
	N	Percent	N	Percent	N	Percent
<b>All Localities</b>						
All Ages	3,992,589	100.0	2,092,333	100.0	1,900,256	100.0
6 – 11	2,107,675	52.8	1,065,861	50.9	1,041,814	54.8
12 – 14	916,067	22.9	476,958	22.8	439,109	23.1
15 – 17	596,348	14.9	324,727	15.5	271,621	14.3
18 – 20	274,091	6.9	162,604	7.8	111,487	5.9
21 – 24	98,408	2.5	62,183	3.0	36,225	1.9
<b>Urban</b>						
All Ages	1,945,495	100.0	982,829	100.0	962,666	100.0
6 – 11	951,442	48.9	469,137	47.7	482,305	50.1
12 – 14	444,535	22.8	218,902	22.3	225,633	23.4
15 – 17	315,470	16.2	160,739	16.4	154,731	16.1
18 – 20	164,913	8.5	92,419	9.4	72,494	7.5
21 – 24	69,135	3.6	41,632	4.2	27,503	2.9
<b>Rural</b>						
All Ages	2,047,094	100.0	1,109,504	100.0	937,590	100.0
6 – 11	1,156,233	56.5	596,724	53.8	559,509	59.7
12 – 14	471,532	23.0	258,056	23.3	213,476	22.8
15 – 17	280,878	13.7	163,988	14.8	116,890	12.5
18 – 20	109,178	5.3	70,185	6.3	38,993	4.1
21-24	29,273	1.4	20,551	1.8	8,722	0.9

## 5.6 Educational Attainment by Selected Economic Characteristics

Educational attainment by background characteristics shows, among other things, the extent to which persons with the selected characteristics have been trained and could provide useful information for policy interventions. Table 5.11 shows that 31.3 per cent of those with some form of education, including pre-school, are engaged in agriculture and related occupations, followed by production and machine operators (20.5%), sales workers (18.5%) and professional/technical workers (12.4%), a reflection of the low level of education and technical skills of the population as well as the state of labour market. For males, the major occupations are agriculture and related workers (34.0%), production and machine operators (23.3%), professional/technical workers (13.6%) and sales (10.9%), and clerical workers (10.0%); while for females they are sales (28.8%), agriculture and related workers (27.8%), production and related workers (16.6%) and professional/technical workers (10.7%) and service workers (10.0%).

There are variations, though, in the major occupations in terms of the educational attainment of the individual. Agriculture and related workers feature in the first four for all except those with vocational/technical/commercial and tertiary education; production and related workers feature in all except persons with tertiary education, while professional/technical workers feature only for persons with vocational/technical/commercial, post-secondary and tertiary education. It is only sales workers who feature in the four major occupations for all levels of educational attainment. Service workers appear to be more relevant for females while it is the case with clerical workers for males. Similarly, professional/technical and administrative/managerial workers feature more prominently among persons with tertiary and post-secondary education.

Table 5.11 Educational Attainment by Occupation of Economically Active (15 years and older) by Sex

Occupation	All Levels		Pre School		Primary		Middle/JSS		Secondary/SSS		Vocational/Technical		Post Secondary		Tertiary	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
<b>Both Sexes</b>																
All Occupation	4,255,228	100.0	12,951	100.0	464,268	100.0	2,398,093	100.0	577,046	100.0	334,690	100.0	259,510	100.0	208,670	100.0
Professionals, Technical & related workers	526,198	12.4	48	0.4	2,098	0.5	41,184	1.7	63,890	11.1	50,254	15.0	181,128	69.8	187,596	89.9
Administrative & Managerial workers	22,698	0.5	7	0.1	183	0.0	4,328	0.2	4,497	0.8	1,745	0.5	1,087	0.4	10,851	5.2
Clerical and related workers	321,169	7.5	127	1.0	16,319	3.5	178,303	7.4	64,264	11.1	52,593	15.7	8,029	3.1	1,534	0.7
Sales workers	788,828	18.5	2,113	16.3	88,560	19.1	481,890	20.1	129,524	22.4	66,930	20.0	16,106	6.2	3,705	1.8
Service workers	316,110	7.4	936	7.2	31,829	6.9	184,990	7.7	55,779	9.7	32,779	9.8	7,723	3.0	2,074	1.0
Agricultural, Animal Husbandry & Forestry related workers	1,333,819	31.3	6,673	51.5	241,450	52.0	881,014	36.7	129,689	22.5	46,267	13.8	28,026	10.8	700	0.3
Production, Transport & equipment operators	870,366	20.5	2,876	22.2	75,088	16.2	576,663	24.0	116,201	20.1	81,787	24.4	16,768	6.5	983	0.5
Others Labourers	54,191	1.3	118	0.9	7,359	1.6	38,141	1.6	7,759	1.3	694	0.2	120	0.0	0	0.0
New workers	21,849	0.5	53	0.4	1,382	0.3	11,580	0.5	5,443	0.9	1,641	0.5	523	0.2	1,227	0.6
<b>Male</b>																
All Occupation	2,434,282	100.0	6,837	100.0	213,887	100.0	1,355,687	100.0	370,678	100.0	201,667	100.0	143,175	100.0	142,351	100.0
Professionals, Technical & related workers	332,200	13.6	35	0.5	1,318	0.6	28,140	2.1	43,150	11.6	35,454	17.6	96,484	67.4	127,619	89.7
Administrative & Managerial workers	16,281	0.7	4	0.1	91	0.0	2,774	0.2	3,429	0.9	1,219	0.6	724	0.5	8,040	5.6
Clerical and related workers	244,361	10.0	65	1.0	13,720	6.4	148,249	10.9	45,793	12.4	30,343	15.0	5,045	3.5	1,146	0.8
Sales workers	265,303	10.9	945	13.8	18,532	8.7	142,110	10.5	66,427	17.7	28,101	13.9	7,550	5.3	2,638	1.9
Service workers	122,996	5.1	307	4.5	9,226	4.3	65,244	4.8	28,891	7.8	14,856	7.4	3,616	2.5	856	0.6
Agricultural, Animal Husbandry & Forestry related workers	828,476	34.0	3,864	56.5	124,433	58.2	553,003	40.8	94,846	25.6	32,795	16.3	19,027	13.3	508	0.4
Production, Transport & equipment operators	568,072	23.3	1,501	22.0	40,458	18.9	378,602	27.9	79,164	21.4	57,345	28.4	10,324	7.2	678	0.5
Others Labourers	43,874	1.8	85	1.2	5,490	2.6	31,162	2.823	6,494	1.8	557	0.3	86	0.1	0	0.0
New workers	12,719	0.5	31	0.5	619	0.3	6,403	0.5	3,484	0.9	997	0.5	319	0.2	866	0.6
<b>Female</b>																
All Occupation	1,820,946	100.0	6,114	100.0	250,381	100.0	1,042,406	100.0	206,368	100.0	133,023	100.0	116,335	100.0	66,319	100.0
Professionals, Technical & related workers	193,998	10.7	13	0.2	780	0.3	13,044	1.3	20,740	10.1	14,800	11.1	84,644	72.8	59,977	90.4
Administrative & Managerial workers	6,417	0.4	3	0.0	92	0.0	1,554	0.1	1,068	0.5	526	0.4	363	0.3	2,811	4.2
Clerical and related workers	76,808	4.2	62	1.0	2,599	1.0	30,054	2.9	18,471	9.0	22,250	16.7	2,984	2.6	388	0.6
Sales workers	523,525	28.8	1,168	19.1	70,028	28.0	339,780	32.6	64,097	31.1	38,829	29.2	8,556	7.4	1,067	1.6
Service workers	193,114	10.6	629	10.3	22,603	9.0	119,746	11.5	26,888	13.0	17,923	13.5	4,107	3.5	1,218	1.8
Agricultural, Animal Husbandry & Forestry related workers	505,343	27.8	2,809	45.9	117,017	46.7	328,011	31.5	34,843	16.9	13,472	10.1	8,999	7.7	192	0.3
Production, Transport & equipment operators	302,294	16.6	1,375	22.5	34,630	13.8	198,061	19.0	37,037	17.9	24,442	18.4	6,444	5.5	305	0.5
Others Labourers	10,317	0.6	33	0.5	1,869	0.7	6,979	0.7	1,265	0.6	137	0.1	34	0.0	0	0.0
New workers	9,130	0.5	22	0.4	763	0.3	5,177	0.5	1,959	0.9	644	0.5	204	0.2	361	0.5

Table 5.12 presents information on the employment status of the educated by level of attainment. About 3 in every 5 educated persons in the labour force are self-employed individuals with no employees and an additional 1 in 20 with employees. Educated persons working for others constitute a quarter of the total. A greater proportion of female educated persons work for themselves (66.5%) than do males (55.0%) while a greater proportion of male educated persons work for others (29.5%) than do females (17.2%). This is because males attain higher levels than females and therefore are more competitive in the formal sector while females, because of their relatively low levels find it easier to work in the informal sector. The proportion of employees increases with level of education, while self-employed without employees decreases with level of education, for both males and females.

Home-based activities (unpaid family work, apprenticeship, domestic help and others) provide employment for about a tenth of the educated manpower of the country, with a slightly higher proportion for females than males. The proportion does not change much before secondary school level, after which it drops slightly for persons with vocational/technical and post-secondary levels, which equip graduates with the skills to be able to work for one's self or to find a job. The fact that the proportion increased at the tertiary level may be an indication that it is not the solution to solving problems of unemployment. This calls for a re-orientation of the education system to give vocational and technical education the needed recognition and boost. The results also show the value of the home as an important institution in providing support to its members in difficult times. Apart from the labour helping the family business to grow, it also provides an opportunity for members to demonstrate their worth and maintain their self esteem.



Table 5.12 Educational Attainment by Employment Status of Economically Active (15 years and older) by Sex

Employment Sector	All Levels		Pre School		Primary		Middle/JSS		Secondary/SSS		Vocational/Technical		Post Secondary		Tertiary		
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	per cent	Percent
<b>Both Sexes</b>																	
All Sectors	4,255,228	100.0	12,951	100.0	464,268	100.0	2,398,093	100.0	577,046	100.0	334,690	100.0	259,510	100.0	208,670	100.0	100.0
Employee	1,031,054	24.2	1,562	12.1	49,647	10.7	368,748	15.4	184,645	32.0	129,168	38.6	159,056	61.3	138,228	66.2	49.2
Self Employed without Employee	2,549,612	59.9	28,797	67.9	341,357	73.5	1,641,249	68.4	293,106	50.8	153,010	45.7	72,904	28.1	39,189	18.8	26.4
Self Employed with Employee	254,946	6.0	671	5.2	22,867	4.9	138,997	5.8	41,138	7.1	26,634	8.0	10,550	4.1	14,089	6.8	19.6
Unpaid family worker	141,607	3.3	833	6.4	24,778	5.3	73,637	3.1	19,714	3.4	8,541	2.6	6,311	2.4	7,793	3.7	1.9
Apprentice	207,047	4.9	786	6.1	18,025	3.9	141,342	5.9	24,717	4.3	10,878	3.3	7,298	2.8	4,001	1.9	1.5
Domestic Employee	25,702	0.6	146	1.1	3,476	0.7	12,818	0.5	4,163	0.7	2,278	0.7	1,360	0.5	1,461	0.7	1.4
Other	45,260	1.1	156	1.2	4,118	0.9	21,302	0.9	9,563	1.7	4,181	1.2	2,031	0.8	3,909	1.9	
<b>Male</b>																	
All Sectors	2,434,282	100.0	6,837	100.0	213,887	100.0	1,355,687	100.0	370,678	100.0	201,667	100.0	143,175	100.0	142,351	100.0	100.0
Employee	717,316	29.5	946	13.8	33,138	15.5	282,287	20.8	131,996	35.6	86,490	42.9	85,950	60.0	96,509	67.8	47.1
Self Employed without Employee	1,339,548	55.0	4,577	66.9	146,171	68.3	860,621	63.5	177,451	47.9	83,872	41.6	41,470	29.0	25,386	17.8	27.6
Self Employed with Employee	147,399	6.1	331	4.8	11,005	5.1	77,353	5.7	25,940	7.0	16,527	8.2	5,954	4.2	10,289	7.2	20.0
Unpaid family worker	72,613	3.0	422	6.2	10,715	5.0	36,716	2.7	12,416	3.3	4,730	2.3	3,616	2.5	3,998	2.8	2.3
Apprentice	118,006	4.8	401	5.9	9,37	4.4	80,661	5.9	14,480	3.9	6,264	3.1	4,205	2.9	2,620	1.8	1.6
Domestic Employee	12,415	0.5	64	0.9	1,419	0.7	5,836	0.4	2,263	0.6	1,200	0.6	748	0.5	885	0.6	1.5
Other	26,985	1.1	96	1.4	2,064	1.0	12,213	0.9	6,132	1.7	2,584	1.3	1,232	0.9	2,664	1.9	
<b>Female</b>																	
All Sectors	1,820,946	100.0	6,114	100.0	250,381	10.0	1,042,406	100.0	206,368	100.0	133,023	100.0	116,335	100.0	66,319	100.0	
Employee	313,738	17.2	616	10.1	16,509	6.6	86,461	8.3	52,649	25.5	42,678	32.1	73,106	62.8	41,719	62.9	
Self Employed without Employee	1,210,064	66.5	4,220	69.0	195,186	78.0	780,628	74.9	115,655	56.0	69,138	52.0	31,434	27.0	13,803	20.8	
Self Employed with Employee	107,547	5.9	340	5.6	11,862	4.7	61,644	5.9	15,198	7.4	10,107	7.6	4,596	4.0	3,800	5.7	
Unpaid family worker	68,994	3.8	411	6.7	14,063	5.6	36,921	3.5	7,298	3.5	3,811	2.9	2,695	2.3	3,795	5.7	
Apprentice	89,041	4.9	385	6.3	8,650	3.5	60,681	5.8	10,237	5.0	4,614	3.5	3,093	2.7	1,381	2.1	
Domestic Employee	13,287	0.7	82	1.3	2,057	0.8	6,982	0.7	1,900	0.9	1,078	0.8	612	0.5	576	0.9	
Other	18275	1.0	60	1.0	2,054	0.8	9,089	0.9	3,431	1.7	1,597	1.2	799	0.7	1,245	1.9	

Table 5.13 also presents information about the sectors of the economy where the educated are likely to work. The overwhelming majority (68.4%) are in the informal sector which is the main sector for the self-employed. An additional 29.4 per cent, representing mainly employees, are in the formal (public and private) sector. Given that higher level of education is required for entry into the formal sector, it is not surprising that the proportion for workers in the formal sector increases from 22.0 per cent for workers pre-schooling (probably as cleaners or watchmen) to 75.6 per cent for tertiary education, while the proportion of workers in the informal sector decreases from 76.4 per cent to 19.6 per cent, for both males and females.

The proportion of workers in the formal sector is higher for males (32.1%) than for females (25.9%), while the reverse is true with the informal sector (65.3% male and 72.5% female). This observation is true for all levels of education up to vocational/technical; for post secondary and tertiary levels, females have higher proportions in the formal and lower in the informal sector. The reason may be that females with higher education may find security in the formal sector and choose it when their options are broader; while many males may prefer the informal sector which offers greater flexibility and possibly stability to set up businesses in the years of their retirement

## **5.7 Summary, Conclusion and Recommendations**

### **Summary and Conclusion**

This chapter has been concerned with expanding knowledge on the current levels and trends of educational attainment in Ghana, based on the 2000 Census and other nationally representative data sources. Following political independence in 1957, successive governments in Ghana have pursued various policies aimed at reducing illiteracy. These efforts have achieved a measure of success, with literacy reaching 58 per cent of the adult population by 2000. Greater Accra (81.6%) and Ashanti (65.0%) have the highest literacy levels in the country, while Northern (23.8%), Upper East (23.5%), and Upper West (26.6%) have the least. In all, literacy rates are higher for males (66.4%) than for females (49.8%). Literacy trends reveal that Ghana's literacy levels, though still low, have improved over the years.

About one in five males and one in three females have no education, with a median number of years of schooling of 4.9 years for males and 2.3 years for females. The picture is even more grim when higher levels of education are considered. In general, 38.8 per cent of persons six years and older and 26.6 per cent of school-going age (6-24 years) have never attended school, and the majority of these are females. School dropout rates from the 1997 CWIQ are about 20 per cent for boys and 30 per cent for girls at the primary level, and 15 per cent for boys and 21 per cent for girls at the junior secondary level. It is encouraging, however, that the proportion of people with no education has declined over the years.

There are marked differentials in educational attainment in Ghana. Overwhelming majority of educated persons attained basic education (Middle/JSS) level. Urban areas have higher levels of education than persons residing in rural areas. The nation's most developed regions, Greater Accra and Ashanti, have the highest level of education compared with other regions.

Table 5.13 Educational Attainment by Employment Sector of Economically Active (15 years and older) by Sex

Sex/Employment Sector	All Levels		Pre School		Primary		Middle/JSS		Secondary/SSS		Vocational/Technical		Post Secondary		Tertiary	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
<b>Both Sexes</b>																
All Sectors	4,255,228	100.0	12,951	100.0	464,268	100.0	2,398,093	100.0	577,046	100.0	334,690	100.0	259,510	100.0	208,670	100.0
Public	486,659	11.4	402	3.1	12,667	2.7	109,059	4.5	75,708	13.1	59,119	17.7	127,053	49.0	102,651	49.2
Private Formal	764,877	18.0	2,452	18.9	62,455	13.5	376,663	15.7	140,573	24.4	82,607	24.7	45,109	17.4	55,018	26.4
Private Informal	2,909,602	68.4	9,892	76.4	382,890	82.5	1,870,946	78.0	341,576	59.2	181,172	54.1	82,268	31.7	40,858	19.6
Semi-public/Parastatal	34,768	0.8	61	0.5	2,287	0.5	15,362	0.6	5,993	1.0	4,659	1.4	2,381	0.9	4,025	1.9
NGO/Int. Organisation	13,902	0.3	27	0.2	872	0.2	3,999	0.2	2,553	0.4	2,174	0.6	1,135	0.4	3,142	1.5
Other	45,420	1.1	117	0.9	3,097	0.7	22,064	0.9	10,643	1.8	4,959	1.5	1,564	0.6	2,976	1.4
<b>Male</b>																
All Sectors	2,434,282	100.0	6,837	100.0	213,887	100.0	1,355,687	100.0	370,678	100.0	201,667	100.0	143,175	100.0	142,351	100.0
Public	311,284	12.8	229	3.3	8,150	3.8	79,379	5.9	52,585	14.2	37,494	18.6	66,450	46.4	66,997	47.1
Private Formal	468,938	19.3	1,347	19.7	30,749	14.4	226,698	16.7	92,293	24.9	52,837	26.2	25,731	18.0	39,283	27.6
Private Informal	1,590,273	65.3	5,147	75.3	171,400	80.1	1,021,495	75.3	212,393	57.3	103,434	51.3	47,871	33.4	28,533	20.0
Semi-public/Parastatal	27,525	1.1	38	0.6	1,603	0.7	12,809	0.9	4,834	1.3	3,545	1.8	1,493	1.0	3,203	2.3
NGO/Int. Organisation	9,444	0.4	13	0.2	545	0.3	2,866	0.2	1,774	0.5	1,352	0.7	664	0.5	2,230	1.6
Other	26,818	1.1	63	0.9	1,440	0.7	12,440	0.9	6,799	1.8	3,005	1.5	966	0.7	2,105	1.5
<b>Female</b>																
All Sectors	1,820,946	100.0	6,114	100.0	250,381	100.0	1,042,406	100.0	206,368	100.0	133,023	100.0	116,335	100.0	66,319	100.0
Public	175,375	9.6	173	2.8	4,517	1.8	29,680	2.8	23,123	11.2	21,625	16.3	60,603	52.1	35,654	53.8
Private Formal	295,939	16.3	1,105	18.1	31,706	12.7	149,965	14.4	48,280	23.4	29,770	22.4	19,378	16.7	15,735	23.7
Private Informal	1,319,329	72.5	4,745	77.6	211,490	84.5	849,451	81.5	129,183	62.6	77,738	58.4	34,397	29.6	12,325	18.6
Semi-public/Parastatal	7,243	0.4	23	0.4	684	0.3	2,553	0.2	1,159	0.6	1,114	0.8	888	0.8	822	1.2
NGO/Int. Organisation	4,458	0.2	14	0.2	327	0.1	1,133	0.1	779	0.4	822	0.6	471	0.4	912	1.4
Other	18,602	1.0	54	0.9	1,657	0.7	9,624	0.9	3,844	1.9	1,954	1.5	598	0.5	871	1.3

The findings suggest that about equal proportions of males and females aged 6-24 years have previously attended school. There are, however, higher proportions of females than males who have never attended any formal school, and higher proportion of males than females who are currently in school. At the regional level, the proportion of persons aged 6-24 years with past school attendance is almost the same for both sexes, but there are higher proportions of females at no education and lower proportion of females with any level of schooling.

The results further show that 31.3 per cent of educated persons are engaged in agriculture and related occupations, which is one and a half times the proportion of educated people (that is, persons with some schooling including pre-primary) who are production and related workers, the next major occupation among the educated. In fact, these two occupations plus those engaged in sales work account for 70 per cent of all educated working people. A closer look at the Table, however, shows that an overwhelming majority of educated workers have middle/junior secondary education. About 60 per cent of the educated people are self-employed with no employees, while 24 are employees; more than two-thirds (68.4%) are engaged in the informal sector and 29 per cent are in the formal sector working for others.

Trends in educational attainment for the 1960-2000 period show that the proportion of people who have never attended school has consistently declined, while the proportion of persons who attended school in the past or are currently attending school is generally on the increase. The same pattern is maintained for males and females. Although females are educationally disadvantaged, the disparity between the sexes has consistently narrowed.

In general, therefore, illiteracy and lack of formal education, though declining, are still too high in Ghana. Consequently, majority of the labour force have little education, and overwhelming majority of them are engaged in own-account businesses of petty trading or agricultural work. Furthermore, the substantial differentials in past and current school attendance among the regions are an indication of the disparity in levels of socio-economic development among the regions.

### **Recommendations**

The policy of free and compulsory education should be fully and speedily enforced. Adequate sensitization and enlightenment through the electronic and print media, as well as through sustained public educational campaigns at community and district levels enlighten people about the immense benefits of education. These efforts should go a long way toward encouraging parents and guardians to send their children and wards to school.

Increased and improved education and literacy levels are necessary in opening up access to greater opportunities for improvement in the individual's living conditions. Because much information is transmitted in written form, the ability to read and write is critical. In this respect, every effort should be made to reduce the high illiteracy level in the country.

Educational structures must be in place to accommodate the expected increase in the number of children with the enforcement of the policy on free and compulsory education. In this respect, there is the need to review upward the educational budget to supplement the efforts of the local communities in the provision and maintenance of school buildings and equipment.

Additionally, district assemblies should ensure the availability of schools and other infrastructure at the stipulated 8 kilometre distance radius (to avoid trekking long distances before getting to school, particularly in the rural areas) as well as of teachers and teaching aids, including books and other educational materials.

The Ghana Education Fund should make special provision for needy girls to pursue their education up to the tertiary levels. In addition to this, each District Assembly should institute a form of community educational fund to assist needy students, especially girls, from the district. Voluntary organizations, religious bodies, and various youth groups should intensify their assistance to girls who can pursue further studies.

The Family Life Education programme currently being run in schools should be intensified to alert boys and girls about the adverse consequences of premarital sex and teenage pregnancy, including high dropout rate among girls and the risks of contracting the HIV/AIDS disease and other sexually transmitted infections.

It has been observed that an addition of one year to a mother's schooling reduces child mortality by 9 deaths per 1,000 live births (World Bank, 1988). It is therefore necessary for the Ghana Education Service and District Assemblies to do everything possible to keep girls longer in school. As a way of helping to keep girls longer in school, the Ministry of Health's policy of permitting girls who get pregnant to return to school after childbirth should be encouraged. Parents and teachers should be more sympathetic to the plight of such unfortunate girls and encourage them to return to school since some of them may have been victims of rape and sexual exploitation.

Efforts to educate the girl-child should not be pursued to the detriment of the boy-child, which may seem to be the case as present school attendance declined between 1984 and 2000 for males. In this respect, parents should be encouraged to ensure that their male wards remain in school and should not be withdrawn from school prior to completion for whatever reasons.

## **Conclusion**

The report of the Anamuah-Mensah Presidential Committee on Education Reforms in Ghana has some startling statistics on the state of the country's education. For instance, only 5 per cent of workers have had training at the secondary or tertiary level; of a batch of JSS leavers, only about 5 per cent would have access to tertiary institutions; and about 60 per cent exit the educational mainstream after JSS 3. These figures paint a very grim picture of Ghana's educational situation and, by extension, the quest for sustainable development and eradication of poverty. Consequently, Ghana can only confidently advance into the technological age and meet the challenges of the 21<sup>st</sup> century if she makes education the centrepiece of her development agenda.

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## CHAPTER 6: ECONOMIC ACTIVITY

### 6.1 Introduction

Ghana's rapid population growth, precipitated by high but declining fertility and low mortality regimes, translates into a youthful age structure characterized by a large proportion of children under 15 years of age (41%) and a small proportion of elderly persons aged 65 years and older (5%), with persons aged 15-64 years constituting about 54 per cent of the total population (Ghana Statistical Service, 2002). This demographic profile suggests that Ghana's population has a built-in potential for growth, leading to increases in the supply of labour force which, in turn, may have implications for the future employment situation in the country.

On the other hand, the economic and social development of any country is contingent upon the quality and quantity of its productive resources, of which labour is vitally important. In fact, the other productive resources, namely physical capital and land, are dependent upon labour. Consequently, labour constitutes a critical agent of production. As a result of the very important position of labour in the productive process, it is imperative to know the current size and characteristics of the labour force and changes over time for possible policy interventions for maximum development and utilization of these human resources. The chapter examines patterns of economic activity by various characteristics (such as age, sex, region, rural/urban place of residence, occupation, industry, employment status and sector) and discusses trends in labour force participation in the country.

#### **Scope of Analysis, Data Sources and Quality**

The 2000 Census has data on the economic activity of persons aged 7 years and older for the whole country as well as such characteristics as region of residence, urban/rural place of residence, age and sex. The minimum age of 7 years is included in the analysis of labour force participation because the struggle for survival in the face of economic situation has resulted in the phenomenon of child labour and street children.

The data used in this chapter are from the 1960-2000 censuses of Ghana, and these are complemented by data from other sources, notably United Nations publications and the 1998 Ghana Demographic and Health Survey results. The quality of the census data preceding the 2000 Population and Housing Census has been presented elsewhere (see Ghana Statistical Service, 1995a; 1995b; Government of Ghana, 1984, 1970, and 1960). It should, however, be stated that census data in Africa are plagued by a great deal of reporting, omission, and recording errors (Mba, 2003; Ewbank, 1981; Gibril, 1979). Also, the reference period for the labour force was the four weeks preceding the census night, during the 1960 and 1970 censuses, while it was only 7 days for the 1984 and 2000 censuses. This lack of uniformity in the reference period of economic activity makes interpretation of trend results difficult. In general, variations in the definition of concepts in censuses make it difficult to compare labour force statistics for successive years for the same country and for different countries. Additionally, it is not possible to investigate the incidence of child labour over the years since it was only the 2000 census that collected information on the economic activity of children aged 7-14 years.

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This chapter has been contributed by Dr. Chuks Mba.

## 6.2 Economically Active Population

The economically active population consists of persons who are either employed (that is, those who worked during the reference period, or had job but did not work) or unemployed. Table 6.1 presents this information for persons aged 15 years and older in relation to the total population and the inactive population during the period 1960-2000. The Table shows that there is a gradual, though not substantial, decline in the proportion of children (under 15 years) over the years, due to fertility decline and improvement in life expectancy, resulting in more people surviving to old age. That children under the age of 15 years still constitute the bulk of Ghana's population (over 40% of the total population for both sexes) implies that there is an abundance of human resources for future labour force participation.

Indeed, the active working age group (15-64) has increased about 3 times in size and in proportionate share from 52.3% in 1960 to 53.4% in 2000 and the expectation is that it is likely to grow with the years. While this will result in a declining age dependency ratio, it may not necessarily translate into reduced economic dependency if opportunities for absorbing the increases into the labour force are not increased as well. About 14.9 per cent of the working age group (15 years and older) are not economically active and it could be a matter of serious concern.

**Table 6.1: Broad Age-Sex Structure of Ghana's Population and Dependency Ratios, 1960-2000**

Item Sex	1960		1970		1984		2000	
	N	% of total population	N	% of total population	N	% of total population	N	% of total population
Total population	Total	6,726,815	8,559,313	12,296,081	18,912,079			
	Male	3,400,270	4,247,809	6,063,848	9,357,382			
	Female	3,326,545	4,311,504	6,232,233	9,554,697			
Population < 15	Total	2,996,506	4,015,965	5,535,114	7,806,843	44.5	46.9	41.3
	Male	1,515,718	2,020,809	2,802,779	3,921,553	44.6	47.6	41.9
	Female	1,408,788	1,995,156	2,732,335	3,885,290	44.5	46.3	40.7
Population 15-64	Total	3,516,832	4,231,853	6,267,608	10,106,296	52.3	49.5	53.4
	Male	1,771,467	2,069,493	3,019,546	4,937,749	52.1	48.7	52.8
	Female	1,745,365	2,162,360	3,248,062	5,168,547	52.5	50.1	54.1
Population 65+	Total	213,477	311,495	493,359	998,940	3.2	3.6	5.3
	Male	113,085	157,507	241,523	498,080	3.3	3.7	5.3
	Female	100,392	153,988	251,836	500,860	3.0	3.6	5.2
Age Dependency Ratio	Total					91.3	102.3	96.2
Economically active population (15+)	Total	2,723,026	3,331,618	5,580,104	8,292,114	40.5	38.9	43.8
	Male	1,677,058	1,859,395	2,724,481	4,170,609	49.3	43.8	44.6
	Female	1,045,968	1,472,223	2,855,623	4,121,505	31.4	34.1	43.1
Economically inactive population (15+)	Total	1,007,283	1,211,730	1,180,863	2,813,122	15.0	14.2	14.9
	Male	207,494	367,605	536,588	1,265,220	6.1	8.7	13.5
	Female	799,789	844,125	644,275	1,547,902	24.0	19.6	16.2

Sources: The 1960, 1970, 1984, and 2000 Population Censuses of Ghana.

This appears to be supported by the fact that the economically active population does not show a consistent pattern over the years. The proportion decreased from 40.5 per cent in 1960 to 38.9 per cent in 1970, then increased to 45.4 per cent in 1984 and decreased again to 43.8 per cent in 2000. The same inconsistent pattern is observed for the economically inactive population, whether male or female. The fact that less than 45 per cent of the population is economically active has serious implications for economic dependency. Generally, though, females lag behind males in labour force participation. In their roles as mothers and housewives, females tend to be more involved than males with the maintenance of the home and caring for the family. As a

result, there are more of them not economically active than males, although Table 6.1 suggests that the gap, which was more pronounced in the 1960s and 1970s, has narrowed considerably since.

It has been argued that the decline in the crude activity rate between 1960 and 1970 was due to the high fertility in Ghana, which led to an increase in the proportion of children under 15 years of age between the two periods (de Graft-Johnson et al., 1975). As a result, the rate of increase of the labour force lagged behind that of the total population. The slack in male activity rate over the years has also been attributed in part to the emigration of skilled and semi-skilled Ghanaian males to other countries for better economic prospects (Ghana Statistical Service, 1995c).

On the other hand, the increase in female activity rate over the years, particularly in the 1970-1984 period, may be due to two main factors. In the first instance, formal educational attainment among females has substantially increased, leading to greater uptake in labour force participation. Secondly, there is better reporting of economic activity among females. Evidence from earlier censuses indicate that women tended to report themselves as homemakers or housewives even though they might have engaged in some income-generating activity, especially if such activity was not in the formal sector of the economy (Ghana Statistical Service, 1995a). The recent censuses have addressed this lapse as enumerators are trained and instructed to probe whether the respondents who identify themselves as housewives engaged in any form of income-generating activity.

### **Regional Distribution of Economically Active Population and Growth Rates**

Table 6.2 shows the regional distribution of the economically active population (labour force) during the 1960-2000 period. As the distribution of the labour force closely follows the pattern of population concentration, it is not surprising that Ashanti has consistently remained the region with the largest number of economically active population, followed by Greater Accra and Eastern. A more interesting performance indicator for comparison is the crude activity rate, that is the proportion of the population that is economically active. Table 6.2 shows that the participation rate has hovered around 40 per cent since 1960. For most regions, 1970 was a bad period as participation rate decreased, while 1984 appears to have been a good period for all regions. Probably because of the bad economic times of the early 1980s many more people were out there doing something to make ends meet. While other regions have not shown any consistent pattern in participation rates, Greater Accra, Brong Ahafo and Northern have experienced increases in participation rate from 1960 to 2000.

**Table 6.2: The Economically Active as Proportion of Total Population by Region**

Region	1960		1970		1984		2000	
	N	Proportion	N	Proportion	N	Proportion	N	Percent
Western	285,908	45.7	331,070	43.0	544,706	47.0	856,830	44.5
Central	324,318	43.2	370,644	41.6	520,091	45.5	671,003	42.1
Greater Accra	225,285	41.6	366,495	43.0	647,673	45.3	1,377,903	47.4
Volta	322,442	41.5	376,914	39.8	558,652	46.1	697,752	42.7
Eastern	469,483	45.0	502,187	39.8	781,906	46.5	927,699	44.0
Ashanti	475,964	42.9	584,374	39.4	952,709	46.6	1,612,467	44.6
Brong Ahafo	232,123	39.5	314,145	41.0	545,691	45.2	819,190	45.1
Northern	156,440	29.4	226,132	31.1	470,712	40.4	727,553	40.0
Upper East	231,063	30.5	259,657	30.1	357,782	46.3	360,508	39.2
Upper West					200,092	45.7	241,209	41.8

<b>All Regions</b>	<b>2,723,026</b>	<b>40.5</b>	<b>3,331,618</b>	<b>38.9</b>	<b>5,580,104</b>	<b>45.4</b>	<b>8,292,114</b>	<b>43.8</b>
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Source: The 1960-2000 Censuses of Ghana.

\*Includes Upper West

The intercensal growth rate of the economically active population by region in Ghana is depicted in Table 6.3. The growth rate has been highest for Greater Accra for all periods, while substantial growth rates are recorded for Western, Ashanti, Brong Ahafo, and Northern at different periods. Overall, the annual growth rate doubled from 2 per cent during 1960-1970 to 3.8 per cent in 1970-1984 but fell to 2.5 per cent during 1984-2000. This fluctuation is a reflection of the rate of labour turnover in response to perceived job opportunities available in the job market.

**Table 6.3: Intercensal Growth Rate of the Economically Active Population by Region**

Region	Annual Growth Rate			
	1960-1970	1970-1984	1984-2000	1960-2000
Western	1.5	3.6	2.8	2.7
Central	1.3	2.4	1.6	1.8
Greater Accra	5.0	4.2	4.7	4.5
Volta	1.6	1.9	1.4	1.9
Eastern	0.7	3.2	1.1	1.7
Ashanti	2.1	3.6	3.3	3.1
Brong Ahafo	3.1	4.0	2.5	3.2
Northern	3.8	5.4	2.7	3.8
Upper East	1.2*	5.6*	0.0	2.4*
Upper West			1.2	
<b>All Regions</b>	<b>2.0</b>	<b>3.8</b>	<b>2.5</b>	<b>2.8</b>

Source: Computed from Table 6.2.

Note: \*Includes Upper West Region.

### **Age-Sex Distribution of Economically Active Population and Activity Rates**

Table 6.4 presents information on the labour force by age and sex for the 1960-2000 period. The results show that the proportion of the economically active population increases with age between 15-19 years and 25-29 years and subsequently declines with advancing age. For males, the peak of economically active population has remained at the 25-29 years age group over the years, while for females, the peak is at 20-24 years except in 2000 when the peak shifted to the 25-29 years age group. In general, the structure of the labour force population has not changed much over the years.

**Table 6.4: Economically Active Population by Age and Sex in Ghana, 1960 -2000.**

Age Group	1960	1970	1984	2000
<b>Both Sexes</b>				
15-19	11.4	9.5	10.7	9.1
20-24	15.2	14.5	16.0	13.5
25-29	15.7	15.0	15.7	15.0
30-34	13.9	14.1	12.6	13.0
35-39	11.0	11.3	10.0	11.3
40-44	9.4	9.2	8.1	9.8
45-49	6.7	7.2	7.3	8.0
50-54	5.5	6.1	6.0	6.1
55-59	3.3	3.7	3.7	3.7
60-64	3.4	3.6	3.6	3.4
65+	4.5	5.8	6.2	7.2
Total	100.0	100.0	100.0	100.0
N	2,723,026	3,331,618	5,580,104	8,292,114
<b>Male</b>				
15-19	10.0	9.1	10.0	9.2
20-24	14.5	13.6	14.8	12.7
25-29	16.0	14.9	15.3	14.2
30-34	14.1	13.8	12.6	12.6
35-39	11.6	11.7	10.2	11.1
40-44	9.7	9.2	8.2	10.0
45-49	7.1	7.6	7.8	8.5
50-54	5.5	6.2	6.2	6.3
55-59	3.3	3.9	3.8	4.0
60-64	3.4	3.7	3.7	3.4
65+	4.8	6.3	7.4	8.0
Total	100.0	100.0	100.0	100.0
N	1,677,058	1,859,395	2,724,481	4,170,609
<b>Females</b>				
15-19	13.5	10.1	11.3	9.0
20-24	16.2	15.7	17.1	14.3
25-29	15.1	15.1	16.1	15.7
30-34	13.5	14.4	12.5	13.5
35-39	10.2	10.9	9.7	11.5
40-44	9.1	9.3	8.0	9.5
45-49	6.1	6.8	6.9	7.4
50-54	5.5	6.0	5.8	6.0
55-59	3.3	3.4	3.4	3.4
60-64	3.4	3.4	3.6	3.3
65+	4.1	5.0	5.7	6.3
Total	100.0	100.0	100.0	100.0
N	1,045,968	1,472,223	2,855,633	4,121,505

Source: Computed from the 1960-2000 Censuses of Ghana.

A measure of the involvement of the general population in the production of goods and services is the activity rate. The refined activity rate (measured in relation to population 15 years and older) is usually preferred to the crude activity rate (measured in relation to total population) because it eliminates the population not exposed to labour force participation. The total population aged 15 years and older (Table 6.5) represents refined activity rates for the sexes. Generally, activity rates increased steadily from 73 per cent in 1960 to 82.5 per cent in 1984 before falling to 74.7 per cent in 2000. The decline in activity rate between 1984 and 2000 may be partly due to longer stay in school by young people, particularly those in the 15-19 years age

group, whose activity rate declined from 57.2% in 1960 to 40.1 per cent in 2000. Female participation rates are lower than those of males in all the four censuses.

The age-specific economic activity rates (defined as proportion of population of that age group that is economically active) show that for both sexes a fairly consistent pattern has been maintained over the years, with a steep rise from the 15-19 years age group to 20-24 years age group, then a steady rise up to between 35-39 years and 45-49 years age group before a gradual decline with advancing age; there are a few minor deviations from this general pattern. It is in this broad age group that men and women establish themselves and take responsibility for their young children and probably help to take care of parents and other relations. The need to find something to do is greatest at this period in one's lifetime. It is not surprising, therefore, that the activity rates pattern is similar for both males and females. The difference is in terms of magnitude; activity rates are consistently higher for males than for females at almost all ages during the 1960-2000 period, though the gap has narrowed considerably over the years from 32.3 percentage points in 1960 through 19.9 in 1970 to 4.0 points in 2000).

**Table 6.5: Age-Specific Activity Rates by Sex**

Age Group	Both Sexes				Males				Females			
	1960	1970	1984	2000	1960	1970	1984	2000	1960	1970	1984	2000
15-19	57.2	40.8	47.7	40.1	61.0	42.3	42.8	39.7	53.3	39.2	52.9	40.3
20-24	70.0	70.9	84.3	69.9	90.9	82.6	83.0	69.5	52.7	61.4	85.4	70.5
25-29	75.0	79.0	92.9	83.6	96.5	95.5	96.3	85.3	51.6	65.0	90.1	81.8
30-34	77.3	83.7	94.3	89.3	97.5	97.5	97.7	92.6	57.4	71.5	91.3	86.7
35-39	79.6	86.1	95.1	91.0	97.6	97.9	98.3	94.2	59.7	93.9	92.1	88.3
40-44	82.6	87.8	95.4	91.6	97.4	97.8	98.4	94.4	65.6	97.9	92.7	88.6
45-49	83.6	88.3	95.7	92.1	96.8	97.5	98.4	94.4	66.7	97.9	93.0	88.4
50-54	87.1	88.1	94.6	89.0	95.8	96.6	97.6	93.4	70.1	94.0	91.8	85.4
55-59	83.5	86.1	93.3	86.6	94.2	95.2	96.3	91.0	70.5	75.5	90.2	82.0
60-64	77.8	81.6	89.9	75.9	89.4	91.8	94.2	80.3	64.3	71.1	85.9	71.7
65+	57.8	61.6	73.7	59.4	67.0	75.4	83.6	66.7	42.6	47.5	64.3	52.1
<b>Age 15+</b>	<b>73.0</b>	<b>73.3</b>	<b>82.5</b>	<b>74.7</b>	<b>89.0</b>	<b>83.5</b>	<b>83.5</b>	<b>76.7</b>	<b>56.7</b>	<b>63.6</b>	<b>81.6</b>	<b>72.7</b>

Source: Computed from the 1960 – 2000 Censuses of Ghana.

### 6.3 Labour Force Participation

#### Economic Activity by Employment Status

The employment status of the economically active population is presented in Table 6.6. In general, about 60 per cent of economically active persons are self-employed, followed by the employees, with about 15 per cent. There has been a slight increase in the proportion of the self-employed during the period under review, from 59.8 per cent in 1960 to 65.8 per cent in 2000, with a corresponding decrease in wage workers and unpaid family workers. The increase in proportion of the self-employed is more pronounced among males than females, yet the proportion remains higher for females in all years. The higher proportion of women in self-employment implies a lower participation rate in wage employment, even though the proportion of female employees has doubled from the 4.2 per cent in 1960 to 8.7 per cent in 2000.

There is a slightly higher proportion of female family workers than male, but both males and females have experienced very substantial reductions over the period. There is indication that the losses may have been transferred into the ranks of general labourers or casual workers and the unemployed which are a reflection of family businesses not being as vibrant as before.

The proportion of the unemployed remained fairly stable between 1960 and 1970, decreased by about a half in 1984 before increasing by more than one-and-a half times in 2000. The current level of unemployment, which is the highest in post-World War II times, and the substantial increase from 1984 are reflective of the present global economic downturn.

**Table 6.6: Economically Active Population by Employment Status and Sex, Ghana, 1960-2000.**

Employment Status	1960	1970	1984	2000
<b>Both Sexes</b>				
Self- Employed	59.8	59.0	67.7	65.8
Employees	19.8	20.8	15.7	14.2
Unpaid Family Workers	12.6	12.3	12.2	6.1
Others	1.8	1.9	1.6	3.5
All Employed	94.0	94.0	97.2	89.6
Unemployed	6.0	6.0	2.8	10.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>N</b>	<b>2,723,026</b>	<b>3,331,618</b>	<b>5,580,104</b>	<b>8,292,114</b>
<b>Males</b>				
Self- Employed	52.0	49.4	60.6	61.2
Employees	29.6	32.3	24.6	19.6
Unpaid Family Workers	9.1	7.3	9.1	5.1
Others	2.8	3.3	2.5	4.0
All Employed	93.5	92.4	96.8	89.9
Unemployed	6.5	7.6	3.2	10.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>N</b>	<b>1,677,058</b>	<b>1,859,395</b>	<b>2,724,481</b>	<b>4,170,609</b>
<b>Female</b>				
Self- Employed	72.2	71.1	74.5	70.5
Employees	4.2	6.3	7.2	8.7
Unpaid Family Workers	18.1	18.6	15.1	7.0
Others	0.3	0.1	0.7	3.1
All Employed	94.8	96.1	97.5	89.3
Unemployed	5.2	3.9	2.5	10.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>N</b>	<b>1,045,968</b>	<b>1,472,223</b>	<b>2,855,633</b>	<b>4,121,505</b>

Source: The 1960-2000 Population Censuses of Ghana

### **Employment by Region of Residence**

The relative proportion of employed persons (aged 15 years and older) by region and sex is presented in Table 6.7. Generally, more than 90 per cent of the economically active population has been in employment before 2000, when it dropped below 90 per cent; this pattern has been true for both males and females and for all regions except Greater Accra in 1960. All regions as well as both males and females experienced significant decreases in participation rates in 2000 to swell the ranks of the unemployed. There is common knowledge that much of the participation may be under conditions that can be described as underemployment or underutilization.

All regions, except Ashanti; experienced increases in the proportion in employment between 1960 and 1984. The pattern of change over this period is the same for females while for males there are a few slight fluctuations. Table 6.7 further indicates that except Greater Accra, Northern and Upper in 1960, the proportion of the employed before 2000 is higher for females than males. For 2000, the reverse is the case for all regions except Western and Upper East.

**Table 6.7: Employed as Proportion of Economically Active Population by Region and Sex**

Region	1960	1970	1984	2000
<b>Both Sexes</b>				
Western	93.1	94.1	97.3	91.2
Central	94.4	95.0	97.1	91.9
Grater Accra	88.4	90.4	92.3	86.6
Volta	96.1	96.5	98.2	92.5
Eastern	94.3	94.3	97.4	91.6
Ashanti	93.6	93.0	96.9	88.7
Brong Ahafo	92.8	96.2	98.5	92.7
Northern	96.1	98.0	98.9	90.5
Upper East	97.0*	90.0*	99.0	79.9
Upper West			99.3	85.0
<b>All Regions</b>	94.0	94.0	97.2	89.6
<b>Males</b>				
Western	92.3	92.6	96.7	91.2
Central	93.6	92.9	96.4	92.2
Grater Accra	89.0	89.8	91.8	87.0
Volta	95.3	95.2	97.8	92.8
Eastern	93.1	93.0	97.1	91.9
Ashanti	92.3	91.0	96.6	89.1
Brong Ahafo	92.1	94.9	98.5	93.3
Northern	96.6	97.7	98.7	91.1
Upper East	97.2*	86.3*	98.7	79.6
Upper West			99.1	85.2
<b>All Regions</b>	93.5	92.4	96.8	89.9
<b>Females</b>				
Western	94.5	96.2	97.9	91.3
Central	95.3	96.7	97.8	91.7
Grater Accra	87.5	91.3	92.9	86.2
Volta	96.9	97.7	98.5	92.3
Eastern	94.9	95.7	97.7	91.3
Ashanti	95.6	95.4	97.1	88.3
Brong Ahafo	94.3	97.9	98.6	92.0
Northern	93.7	98.6	99.2	89.9
Upper East	96.2*	97.8*	99.3	80.3
Upper West			99.6	84.8
<b>All Regions</b>	94.8	96.1	97.5	89.3

Source: The 1960, 1970, 1984 and 2000 Population Censuses of Ghana

Note:

\*: includes Upper West

### **Occupation of Employed Persons**

The type of work performed by employed persons and in what numbers determine the manpower capabilities of an economy and can therefore provide an indication of the preparedness to move



the development agenda of the country. It is expected that with modernization and a drive towards industrialization, there should be a decline in agriculture and related occupations in favour of the professional, technical, management administrative and clerical occupations (Frog and Ofosu 1992; Duran 1975). Table 6.8 shows that although a large proportion of the employed labour force has remained in agriculture-related occupations over the years, this proportion has fallen from 61 per cent in 1960 to 50 per cent in 2000, a decline of about 10 percentage points during the period. On the other hand, although a very small proportion of the employed persons is in the professional, technical, administrative, managerial, clerical and related occupations, this proportion has more than doubled over the years from 4.5 per cent in 1960 to 11.4 per cent in 2000. Similar patterns are easily discernible for both males and females. Consequently, if the economic development theory is accepted, it may be argued on the basis of the foregoing findings that Ghana is on the path of economic development, albeit at a very slow pace within 40 years.

The proportion of sales workers increased from 12 per cent in 1960 to 15 per cent in 2000 and that of the service workers rose from 2 per cent in 1960 to 6 per cent in 2000. As observed earlier, sales and services occupations, mainly in the informal sector, provide an opportunity for formal sector employees to continue in employment after retirement. The increased proportion in the two occupations is true for males, while for females the increase has only been in services with that in sales actually decreasing consistently since 1960, from 28 per cent to 22 per cent in 2000.

**Table 6.8: Occupation of employed Persons (15 years and older) by Sex**

Type of Occupation	1960	1970	1984	2000
<b>Both Sexes</b>				
Professional/Technical	2.3	3.8	4.1	6.6
Administrative/Management	0.5	0.4	0.3	0.3
Clerical and related workers	1.7	2.7	2.4	4.5
Sales Workers	11.5	13.2	13.8	15.2
Service Workers	2.2	2.9	2.4	5.8
Agic/Anim. Husb/Forestry/Hunters	61.1	57.4	60.6	50.3
Production/Transport Equip.Operators	18.7	19.6	16.4	16.0
Other workers	-	-	-	1.3
	100.0	100.0	100.0	100.0
<b>All Regions</b>	2,559,383	3,133,047	5,422,480	7,428,374
<b>Males</b>				
Professional/Technical	3.1	5.3	5.4	8.3
Administrative/Management	0.8	0.6	0.6	0.4
Clerical and related workers	2.6	4.3	3.4	7.0
Sales Workers	4.3	2.9	3.1	8.6
Service Workers	2.5	4.0	3.2	4.3
Agic/Anim. Husb/Forestry/Hunters	62.9	59.8	65.7	50.8
Production/Transport Equip.Operators	23.8	23.1	18.6	18.6
Other workers	-	-	-	2.0
	100.0	100.0	100.00	100.0
<b>All Regions</b>	1,567,965	1,717,928	2,637,029	3,748,887
<b>Females</b>				
Professional/Technical	1.2	2.0	2.8	4.8
Administrative/Management	0.1	0.0	0.1	0.2
Clerical and related workers	0.3	0.9	1.4	1.9
Sales Workers	28.0	25.7	24.0	22.0
Service Workers	1.6	1.5	1.6	7.4
Agic/Anim. Husb/Forestry/Hunters	58.2	54.5	55.9	49.7
Production/Transport Equip.Operators	10.6	15.4	14.3	13.4
Other workers	-	-	-	0.6
	100.0	100.0	100.00	100.0
<b>All Regions</b>	991,418	1,415,119	2,785,451	3,679,487

Source: The 1960, 1970, 1984 and 2000 Population Censuses of Ghana

## Industry of the Employed

The industrial activities of employed persons are presented in Table 6.9. The Table indicates that agriculture, hunting, forestry fishing and related work has remained the dominant industry in Ghana over the years, with more than 50 per cent of employed persons engaged in it. There is evidence, however, that there is a shift into wholesale/retail trade and restaurant business and real estate. This change is more pronounced for males, while for females the shift is more into community and personal services. Agriculture and its related activities, trade/restaurant activities and manufacturing activities have remained as the three major industries in the order for all years; these industries have consistently accounted for more than 80 per cent of employment.

**Table 6.9 Industry of Employed Persons (15 years and older) by Sex**

Industry	Boxes Sexes			Male			Female			
	1970	1984	2000	1970	1984	2000	1970	1984	2000	2000
Agriculture, Hunting, Forestry Fishing	57.0	61.1	53.1	59.1	66.4	54.3	54.5	56.0	54.6	52.0 2.6
Mining and Quarrying	1.0	0.5	1.4	1.7	0.9	1.9	0.2	0.1	0.9	0.9
Manufacturing	12.1	10.8	10.7	9.7	7.5	10.1	15.1	14.0	11.2	11.2
Electricity, Water and Gas	0.4	0.3	0.4	0.7	0.5	0.5	0.0	0.1	0.2	0.2
Construction	2.3	1.2	3.0	4.1	2.3	5.0	0.2	0.1	1.0	1.0
Wholesale and Retail Trade, Restaurants	13.9	14.6	17.4	3.9	4.2	11.0	26.1	24.2	23.8	23.8
Transport, Storage & Communication	2.7	2.3	3.1	4.8	4.5	5.2	0.2	0.2	8.0	8.0
Finance, Insurance and Real Estate	0.3	0.5	1.5	0.4	0.8	2.1	0.1	0.3	1.0	1.0
Community, Social and Personal Services	10.2	8.7	9.5	15.6	12.9	9.9	3.6	4.8	9.1	9.1
<b>Total %</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Number</b>	<b>3,133,047</b>	<b>5,422,480</b>	<b>7,428,374</b>	<b>1,717,928</b>	<b>2,367,029</b>	<b>3,748,887</b>	<b>1,415,119</b>	<b>2,785,451</b>	<b>3,679,487</b>	<b>3,679,487</b>

Source: The 1960-2000 Population Censuses of Ghana

For females, these industries also represent the major ones and in the same order, but their share of employment has declined from 95 per cent in 1970 to 87 per cent in 2000. On the other hand, the three major industries for 1960 and 1970 have been agriculture and related activities, community/social/personal services activities and manufacturing activities in that order, with over 85 per cent persons employed. In 2000, trade/restaurant activities replaced services activities as the second major industry. This shift of males to wholesale and retail trade and restaurants industry in recent times may partly be due to inadequate employment opportunities in the formal sector of the economy and partly a reflection in underemployment of young men hawking all manner of goods in traffic in cities and large towns. As observed earlier also, it may represent the deliberate move by retiring men to set up business to provide continued active life and a source of income to carry out their obligations.

## Unemployment by Region, Sex and Age

Table 6.10 examines the geographical spread of unemployed persons and the sex composition over the years. In 1960 the region with the highest proportion of the total economically active population that is unemployed is Greater Accra, followed by Brong Ahafo and by Ashanti in 1970 and 1984 as the region with the second highest unemployment level. There has been a dramatic turn around in 2000, with Upper East (20.1%) and Upper West (15.0%) recording rates ahead of Greater Accra (13.4%) and Ashanti (11.3%). All regions recorded their highest unemployment rates in recent times and this may have been the result of the less than satisfactory performance of the economy at the time.

The high unemployment situation in the two largest regional economies, Greater Accra and Ashanti, may not be surprising. Because of the concentration of economic, education, health, social and other infrastructure in these two regions, they constitute major destination points of inter-regional migrants. Not all of the in-migrants may find jobs and may therefore join the ranks of the unemployed. What is not readily discernible is the sudden upsurge of unemployment in Upper East and Upper West.

**Table 6.10: The Unemployed as Proportion of Economically Active Population by Region and Sex**

Region	Both Sexes				Male				Female			
	1960	1970	1984	2000	1960	1970	1984	2000	1960	1970	1984	2000
Western	6.9	5.9	2.7	8.8	7.7	7.4	3.3	8.8	5.5	3.8	2.1	8.7
Central	5.6	5.0	2.9	8.1	6.4	7.1	3.6	7.8	4.7	3.3	2.2	8.3
Greater Accra	11.6	9.6	7.7	13.4	11.0	10.2	8.2	13.0	12.5	8.7	7.1	13.8
Volta	3.9	3.5	1.8	7.5	4.7	4.8	2.2	7.2	3.1	2.3	1.5	7.7
Eastern	5.7	5.7	2.6	8.4	6.9	7.0	2.9	8.1	5.1	4.3	2.3	8.7
Ashanti	6.4	7.0	3.1	11.3	7.7	9.0	3.4	10.9	4.4	4.6	2.9	11.7
Brong Ahafo	7.2	3.8	1.5	7.3	7.9	5.1	1.5	6.7	5.7	2.1	1.4	8.0
Northern	3.9	2.0	1.1	9.5	3.4	2.3	1.3	8.9	6.3	1.4	0.8	10.1
Upper East	3.0*	10.0*	1.0	20.1	2.8*	13.7*	1.3	20.4	3.8*	2.2*	0.7	19.7
Upper West			0.7	15.0			0.9	14.8			0.4	15.2
<b>N</b>	<b>6.0</b>	<b>6.0</b>	<b>2.8</b>	<b>10.4</b>	<b>6.5</b>	<b>7.6</b>	<b>3.2</b>	<b>10.1</b>	<b>5.2</b>	<b>3.9</b>	<b>2.5</b>	<b>10.7</b>

Source: The 1960-2000 Population Censuses of Ghana.

\* includes Upper West

The age-sex structure of the unemployed shows that until 2000, unemployment was largely a youth phenomenon, with no less than 60 per cent of unemployed persons concentrated in the 15-24 years age group, incidentally the school going population. This is true for both males and females. On the other hand, in 2000, the 15-24 years age group accounts for only 36.1 per cent of the unemployed. The more active age group (30-59) that even in 1960 constituted less than a fourth (23.4%) of the unemployed now in 2000 accounts for more than a third (36.8%) and the older age group (60 years and older) make up 12.8 per cent.

The suggestion that school children may have been not properly captured as economically inactive but instead as not working could partly explain the rather large concentration of the unemployed in the 15-24 years age group, but it is difficult to imagine that this error could have lasted over three censuses. What appears more plausible is that the economic situation may have forced many retrenched workers from the public sector to seek alternative means of making a living. The pervasive nature of the exercise is that most workers affected would be aged 40 years and older.

**Table 6.11: Unemployed Population by Age and Sex in Ghana, 1960-2000**

Age Group	1960	1970	1984	2000
<b>Both Sexes</b>				
15-19	40.1	39.8	37.7	17.0
20-24	23.7	31.9	36.8	19.1
25-29	12.8	13.1	13.7	14.2
30-34	7.4	6.4	4.6	9.9
35-39	4.7	3.4	2.2	7.8
40-44	3.4	2.0	1.3	6.5
45-49	2.3	1.4	1.0	5.4
50-54	1.8	0.9	0.7	4.3
55-59	1.1	0.5	0.5	2.9
60-64	1.1	0.4	0.4	3.0
65+	1.6	0.6	1.1	9.8
Total	100.0	100.0	100.0	100.0
N	163,643	198,571	157,702	863,740
<b>Males</b>				
15-19	33.8	35.8	33.6	17.0
20-24	26.1	37.7	36.8	18.7
25-29	14.9	14.6	16.1	13.8
30-34	8.5	7.1	5.6	9.3
35-39	5.3	4.1	2.7	7.5
40-44	3.7	2.4	1.5	6.5
45-49	2.5	1.6	1.2	5.7
50-54	1.8	1.1	0.7	4.2
55-59	1.1	0.6	0.5	3.0
60-64	0.9	0.4	0.4	3.1
65+	1.4	0.5	0.8	11.2
Total	100.0	100.0	100.0	100.0
N	109,093	141,467	87,505	421,722
<b>Females</b>				
15-19	52.7	49.7	39.5	17.0
20-24	19.0	32.2	38.6	19.5
25-29	8.5	9.4	12.9	14.7
30-34	5.0	3.4	3.1	10.4
35-39	3.4	1.7	1.5	8.1
40-44	2.7	1.1	1.0	6.5
45-49	1.9	0.7	0.7	5.1
50-54	1.9	0.5	0.6	4.4
55-59	1.3	0.3	0.5	2.8
60-64	1.5	0.3	0.4	3.0
65+	2.2	0.6	1.2	8.6
Total	100.0	100.0	100.0	100.0
N	54,550	57,104	70,197	442,018

Source: The 1960-2000 Population Censuses of Ghana

Note: includes Upper West

The proportion of the unemployed in the 15-29 years age group is higher for females than it is for males and this is the case in all four censuses, except 2000 while the reverse is the case for ages above 29 years. Until recently, girls were not as encouraged to enrol and remain in school as boys were and this means that females entered the labour market earlier than males. This could therefore explain the reason for higher proportion of female unemployed in the younger ages (15-24 years). While the proportion of female unemployed aged 15-19 years reduced substantially from 52.7 per cent in 1960 through 49.7 per cent in 1970 to 39.5 per cent in 1984, the proportion of the 20-29 years increased from 27.5 per cent in 1960 through 41.6 per cent in 1970 to 51.5 per cent in 1984. On the hand, the proportion of male unemployed remained unchanged for the 15-19 years age group while that for the 20-29 years age group increased only slightly from 41 per cent in 1960 to 52.9 per cent in 1984, thereby bridging the gap between male and female youth unemployment. The age-sex pattern for 2000 is more spread out between the sexes and at all ages.

#### **6.4 Participation of Children (7-14 years) in Gainful Work**

By ILO standards, the minimum age for entry into the labour force is 15 years. Ghana's Children's Act of 1998 affirms this by prohibiting the engagement of children under 15 years. The 2001 Child Labour Survey, however recorded 22.2 per cent of children who had worked for pay, profit or family gain. It is indeed common knowledge that in Ghana and other parts of Africa children under 15 years of age are increasingly involved in labour force participation. While reliable statistics are lacking to establish trends over the years, empirical evidence from the 2000 Census is both informative and instructive.

Table 6.12 indicates that about 600 thousand children are engaged in child work: the overwhelming majority (78.8%) of these are in rural areas and majority (51.9%) are boys. These working children constitute 15.4 per cent of the 7-14 year old population; the proportion is slightly higher for boys (15.8%) than girls (14.9%). In addition, there are 3.8 per cent of children who have never been to school or dropped out of schooling and actively seeking employment. The situation is worse in rural areas, where 20.6 per cent are working and 4.1 per cent are seeking employment, as against urban areas where 7.9 per cent are working and 3.4 per cent seek work. The proportion of working girls in urban (8.3%) is higher than that of working boys (7.6%), while it is the reverse in rural areas (21.1% boys and 20.0% girls). There is not much difference between boys and girls in the proportion seeking work, whether in urban or rural areas.

Table 6.12, however, shows that the proportion of working children (different from child labour) in Greater Accra (8.8%) is only higher than that of Central (7.3%) and about half the incidence in Brong Ahafo (15.1%). On the contrary, the phenomenon of working children is more a feature in the three northern regions than that of the southern regions. Children aged 7-14 years in the three northern regions constitute 17.8 per cent of such children in the country and yet working children in these regions make up 40.9 per cent of all working children in this age group. The highest proportion of working children is in Northern (39.8%), followed by Upper West (37.7%) and Upper East (25.8%). As in other regions, the proportions are higher in rural areas, among boys in rural areas and among girls in urban areas.

**Table 6.12 Activity Status of Children (7-14 years) by Region, Sex and Locality of Residence**

Region/Sex	Total			Urban			Rural					
	Total	<u>Economically</u>	<u>Active</u>	Economically Inactive	Total	<u>Economically</u>	<u>Active</u>	Economically Inactive	Total	<u>Economically</u>	<u>Active</u>	Economically Inactive
		Employed	Seeking Work			Employed	Seeking Work			Employed	Seeking Work	
<b>Total Country</b>												
Total	3,890,964	597,905	149,299	3,143,760	1,601,915	126,811	54,508	1,420,596	2,289,049	471,094	94,791	1,723,164
Male	1,967,519	310,427	75,261	1,581,831	773,381	58,394	25,626	689,361	1,194,138	252,033	49,635	892,470
Female	1,923,445	287,478	74,038	1,561,929	828,534	68,417	28,882	731,235	1,094,911	219,061	45,156	830,694
<b>Western</b>												
Total	407,299	11.7	2.3	86.0	144,721	8.1	2.1	89.8	262,578	13.7	2.4	83.9
Male	206,178	11.7	2.2	86.1	70,337	7.8	2.0	90.2	135,841	13.7	2.3	84.0
Female	201,121	11.8	2.3	85.9	74,384	8.4	2.1	89.5	126,737	13.8	2.4	83.8
<b>Central</b>												
Total	345,753	7.3	2.4	90.3	123,896	5.4	2.6	92.0	221,857	8.4	2.4	89.3
Male	175,605	7.3	2.4	90.3	60,848	5.2	2.6	92.1	114,757	8.3	2.3	89.4
Female	170,148	7.3	2.5	90.2	63,048	5.5	2.6	91.9	10,710	8.4	2.5	89.1
<b>Greater Accra</b>												
Total	514,130	8.8	3.2	88.0	441,384	8.1	3.3	88.6	72,746	13.2	2.4	84.4
Male	246,146	8.5	3.0	88.5	209,346	7.5	3.1	89.3	36,800	13.7	2.4	83.9
Female	267,984	9.1	3.3	87.6	232,038	8.5	3.4	88.0	35,946	12.7	2.4	84.9
<b>Volta</b>												
Total	344,546	4.7	1.8	83.5	89,876	7.6	1.5	90.9	254,670	17.2	1.9	80.9
Male	175,467	15.2	1.8	83.0	43,500	7.4	1.4	91.2	131,967	17.8	1.9	80.3
Female	169,079	14.2	1.8	84.0	46,376	7.7	1.6	90.7	122,703	16.6	1.9	81.5
<b>Eastern</b>												
Total	448,413	9.0	2.4	88.6	149,226	4.9	1.9	93.2	299,187	11.1	2.6	86.3
Male	230,620	9.5	2.3	88.2	72,545	4.6	1.9	93.5	158,075	11.7	2.6	85.7
Female	217,793	8.5	2.4	89.1	76,681	5.1	2.0	92.9	141,112	10.3	2.6	87.1
<b>Ashanti</b>												
Total	756,899	11.4	4.3	84.3	369,263	9.1	5.0	86.0	387,636	13.5	3.7	82.8
Male	378,627	11.2	4.3	84.5	177,890	8.7	4.9	86.4	200,737	13.4	3.7	82.9
Female	378,272	11.5	4.4	84.1	191,373	9.4	5.0	85.6	186,899	13.7	3.7	82.6

Table 6.12 cont'd

<b>Brong Ahafo</b>												
Total	382,483	15.1	7.5	81.4	138,560	5.9	3.4	90.7	243,923	20.4	3.5	76.1
Male	194,341	15.3	3.4	81.3	67,464	5.4	3.2	91.3	126,877	20.5	7.5	76.0
Female	188,142	15.0	3.6	81.4	71,096	6.3	3.6	90.2	117,046	20.3	3.6	76.1
<b>Northern</b>												
Total	369,420	39.8	6.2	54.0	94,506	12.3	.9	83.8	274,734	49.2	7.0	43.7
Male	191,276	41.0	6.2	52.8	47,070	11.7	3.8	84.4	144,206	50.6	7.0	42.5
Female	177,964	38.5	6.3	55.2	47,436	12.9	4.0	83.1	130,528	47.8	7.1	45.1
<b>Upper East</b>												
Total	198,594	25.8	9.0	65.2	30,247	11.3	5.0	83.7	168,347	28.4	9.7	61.9
Male	104,845	26.6	9.3	64.1	14,785	11.0	5.2	83.8	90,060	29.2	10.0	60.8
Female	93,749	24.9	8.6	66.5	15,462	11.6	4.8	83.6	78,287	27.5	9.4	63.1
<b>Upper West</b>												
Total	123,607	37.7	9.4	52.9	20,236	10.3	6.2	83.5	103,371	43.1	10.0	46.9
Male	64,414	39.9	9.6	50.5	9,596	10.2	6.0	83.8	54,818	45.1	10.2	44.7
Female	59,193	35.3	9.2	55.5	10,640	10.4	6.4	83.2	48,553	40.8	9.8	49.4

Regarding the type of work these children are engaged in, Table 6.13 shows that the great majority (73.4%) of them are involved in agriculture, hunting, forestry and fishing industry followed by those in wholesale and retail trade, and restaurants business (10 %). To supplement family income, and also reduce labour cost in production, children and wards join in agriculture trade and related family enterprises. This practice is likely to adversely affect the educational attainment of these children since the time that should be used for learning and schoolwork is used for farm work or petty trading.

Across the regions, with the exception of Greater Accra, most children are involved mainly in agriculture followed by trade. In Greater Accra most working children are in wholesale/retail trade and restaurants business (38%), followed by agriculture (26%), community/personal services (13%) and manufacturing (10%). Mining and quarrying (galamsay) is an important activity for children in Ashanti (10.2%) and Greater Accra (9%).

**Table 6.13 Working Children (7-14 Years) by Industry, 2000**

Industry	All Regions	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West	Upper West
Agriculture, Hunting, Forestry & Fishing	73.4	67.9	73.8	25.9	80.3	76.6	50.7	85.4	88.9	77.7	88.1	88.1
Mining and Quarrying	3.8	6.5	3.5	9.0	2.6	3.1	10.2	1.8	0.7	1.0	0.8	0.8
Manufacturing	5.5	6.7	5.7	10.0	5.9	4.7	9.5	3.0	2.7	7.6	2.8	2.8
Electricity, Water & Gas	0.3	0.2	0.1	0.3	0.1	0.3	0.4	0.4	0.4	0.0	0.3	0.3
Construction	0.5	0.6	0.6	1.7	0.4	0.3	0.9	0.2	0.2	0.3	0.6	0.6
Wholesale & Retail Trade, Restaurants	10.4	11.6	13.1	38.0	7.0	10.3	17.9	5.2	3.9	5.7	2.6	2.6
Transport, Storage and Communication	0.4	0.2	0.3	1.7	0.2	0.3	1.3	0.2	0.0	0.2	0.1	0.1
Finance, Insurance and Real Estate	0.2	0.2	0.1	0.8	0.0	0.2	1.0	0.0	0.0	0.1	0.0	0.0
Community, Social & Personal Services	5.5	6.1	2.8	12.6	3.5	4.2	8.1	3.8	3.2	7.4	4.7	4.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Number</b>	<b>597,905</b>	<b>47,763</b>	<b>25,214</b>	<b>45,176</b>	<b>50,711</b>	<b>40,429</b>	<b>85,968</b>	<b>57,853</b>	<b>146,942</b>	<b>51,231</b>	<b>46,618</b>	<b>46,618</b>

Source: The 1960 – 2000 Population Censuses of Ghana

## 6.5 Summary and Conclusion

### Summary Findings

The chapter has attempted to look at the relationship between population growth and economic activity in Ghana for the period 1960-2000. The findings reveal that children under the age of 15 years still constitute the bulk of Ghana's population, over 40 per cent of the total population for both sexes, implying an abundance of human resources for future labour force participation. Additionally, about three in every five Ghanaians are persons in the working age group, 15-64 years and females generally lag behind males in labour force participation.

The results further show that Ashanti has consistently remained the region with the highest proportion of economically active population in the country (from 18% in 1960 to 19% in 2000). Three regions (Ashanti, Eastern and Greater Accra) account for almost 50 per cent of the



economically active population in the country. In particular, the economically active population in Greater Accra has steadily increased over the years.

The intercensal growth rate of the economically active population indicates that the rate has been highest in Greater Accra for all periods, while substantial growth rates are observed for Western, Ashanti, Brong Ahafo, and Northern.

The results also show that the economically active population increases with age between ages 15-19 years and 30-34 years before declining with advancing age. For males, the peak of economic activity has remained at the 25-29 years age group over the years while for females, the peak has shifted from age 20-24 years in 1984 to age 25-29 years in 2000. In general, the structure of the labour force has not changed much over the years.

Age-specific economic activity rates show that for both males and females, a fairly consistent pattern has been maintained over the years: a steep rise from 15-19 years age group to 20-24 years age group, and then a steady rise up to 45-49 years age group followed by a gradual decline. Female participation rates have been lower than those of males in all four censuses.

Furthermore, agriculture/hunting/forestry/fishing has remained the predominant industry over the years, as more than 50 per cent of employed persons are in this industry. There is a gradual shift of employed persons into wholesale/retail trade and restaurant business (from 14 per cent in 1970 to 18 per cent in 2000), especially for females. Agriculture/hunting/forestry/fishing, manufacturing, and wholesale/retail trade and restaurant business account for 81 per cent of employed persons in the country.

Although a large proportion of employed persons has been in agriculture-related occupations over the years, the proportion has fallen from 61 per cent in 1960 to 49 per cent in 2000. On the other hand, although a very small proportion of employed persons is in the professional/technical/administrative/managerial, clerical and related jobs, the proportion has experienced a steady increase over the years.

In general, more than 50 per cent of all employed persons are self-employed, followed by the employees (about 15%). There has been a consistent increase in the proportion of the self-employed during the period under review, from 60 per cent in 1960 to 74 per cent in 2000 and the proportion is higher for females. Overall, the proportion of unemployed persons remained fairly stable at about 6 per cent between 1960 and 1970, dropped to 3 per cent in 1984, and then increased to 10 per cent in 2000.

The results generally support previous findings that about 90 per cent of the economically active population in all regions have been in employment. These high employment figures are commendable but mask the high underemployment situation in the country. The employment situation was good in 1970 and 1984 when over 90 per cent of the economically active population in all regions were employed. Brong Ahafo and Volta now have the highest proportion of employed persons (93%), while Upper East (80%) and Upper West (85%) have the lowest. Upper East has the highest proportion of unemployment (20% for both males and females), followed by Upper West (15% for both males and females) while Brong Ahafo has the lowest proportion (7% for both males, and females). The rate of unemployment has been

relatively higher for females than males at the 15-24 age group over the years, while it has been higher for males at ages 25 and older. About 15 per cent of Ghanaian children are engaged in gainful work, largely in agriculture/ hunting/forestry/fishing (73%), and in wholesale/retail trade and restaurants business (10%).

### **Conclusion**

The findings in this chapter are consistent with the results of other studies on economic activity in the country (Ghana Statistical Service, 1995a). Considering the fact that Ghana's population is young and that population size continues to be the main determinant of labour force growth, the relatively young age structure of the country's population has important social and economic consequences for manpower supply and level of participation in economic activity. Job creation has not kept pace with population growth, resulting in, among other things, unemployment, underemployment, child labour, street children, social ills, and poverty. The current policies and programmes being pursued to arrest the rapid population growth and create more jobs should be intensified as they are likely to improve the living conditions of the people.

Although the participation rates of females in economic activity increased during the period under review, most of these women are engaged in agriculture and related occupations, in wholesale/retail trade and restaurant businesses. With more investments in girl-child education and training of women, female participation in economic activity is likely to improve in the coming years.

The minimum age for admission to employment in Ghana is 15 years and even though there has been significant progress in the campaign against the phenomenon of child employment, it continues to thrive. Child employment is likely to negatively affect education, health and development of children. Child labour (when child work impacts negatively on child development) is a tragedy when children are made to work under difficult and dangerous conditions. Consequently, the abolition of child labour and more generally the protection of children and young persons against work of a character or under conditions unsuitable to their age should be the constant concern of the government and concerned people of Ghana.

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## **CHAPTER 7: POPULATION DISTRIBUTION, INTERNAL MIGRATION AND URBANIZATION**

### **7.1 Introduction**

Population distribution and redistribution are dynamic processes that take place through natural growth, migration and urbanization. The movement of people into and out of specific geographic locations within a country are shaped by a variety of factors: population size, system of governance, social structure, available land, climate, vegetation, size and character of the economy, and level of technology.

This chapter traces the growth and distribution of the population of Ghana between 1960 and 2000. It describes the characteristics, trends and regional differentials, determinants of internal migration and urbanization, using data from the 2000 Census and other sources. The report examines distribution of total population by nationality and sex, population trends by region as well as changes in density between 1960 and 2000. It also examines the processes of population redistribution, in particular inter-regional migration and rural urban migration, the process of urbanization, its magnitude, determinants and effects on development. The report finally examines the policy implication of current trends in population distribution and redistribution on national development.

### **7.2 Data Sources and Quality**

The ideal data source for the study of population distribution and redistribution is the population register, which is a comprehensive collection of information about the characteristics of each person and his/her movement across well defined geographic locations, from birth to death. Countries, such as Ghana, that lack such registers rely on decennial censuses and multi-round population surveys as sources of information on population distribution and redistribution. By their very nature, however, censuses provide very limited information on migration. They can only include a few questions on migration, and this makes it difficult to undertake a detailed investigation of specific spatial distribution policy issues.

For example, the 2000 Census only asked questions on place of birth, place of usual residence and place of residence five years ago. Reasons for change in place and locality of residence were not solicited, but such information is essential for in-depth analysis of migration decisions and for possible migration-related policy interventions. Such data are much more likely to come from surveys. In 1992/1993, Ghana Statistical Service carried out a more detailed research study of migration in Ghana (GSS, 1995a). Unfortunately, there has not been a follow-up study since then to provide more current migration data. The major sources of data for this chapter are the 1960, 1970, 1984, and the 2000 censuses of Ghana. Other materials used in the discussion include the 1998 Ghana Demographic and Health Survey .

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Dr Chuks Mba contributed this chapter.

### 7.3 Population Trends, Density and Growth

The 2000 Census puts the total population of Ghana at 18.9 million. Table 7.1 shows the regional distribution of the total population as well as the Ghanaian population. The most populous regions are Ashanti (19.1%), Greater Accra (15.5%), Eastern (11.1%) and Western (10.2%), together these four regions account for about 56 per cent of the total population. They also represent the more developed parts of the country and contain the bulk of industrial activity. The least populous regions are the Upper East (4.9%) and Upper West (3.0%). About 92 per cent of the total population are Ghanaians by birth, with an additional 4 per cent naturalized Ghanaian and another 4 per cent as non-Ghanaians. The regional distribution of naturalized Ghanaians follows the pattern for the general population, with Ashanti, Greater-Accra, Eastern and Western containing about 60 per cent of naturalized Ghanaians. It is worth noting that while females make up about 51 per cent of Ghanaians by birth, only 40 per cent of naturalized Ghanaians are female. This probably reflects male selectivity among immigrants who choose to naturalize.

**Table 7.1 Ghanaian Population, Ghanaians by Birth and Ghanaians by Naturalization, by Region and Sex.**

Region	Ghanaians and Non Ghanaians			Ghanaian by birth			Ghanaian by naturalization		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
	100.0	49.5	50.5	100.0	48.7	51.3	100.0	60.5	39.5
<b>Western</b>	10.2	10.5	9.9	10.2	10.4	9.9	10.8	11.7	9.5
<b>Central</b>	8.4	8.1	8.7	8.5	8.2	8.7	9.5	8.9	10.5
<b>Greater Accra</b>	15.5	15.3	15.4	15.4	15.4	15.3	14.7	13.9	15.9
<b>Volta</b>	8.6	8.5	8.8	8.8	8.6	8.9	5.6	5.3	6.0
<b>Eastern</b>	11.1	11.1	11.2	11.4	11.3	11.4	10.5	10.3	10.7
<b>Ashanti</b>	19.1	19.4	18.8	18.0	18.2	18.0	25.2	24.6	26.1
<b>Brong Ahafo</b>	9.6	9.7	9.5	9.8	10.0	9.6	8.4	8.4	8.4
<b>Northern</b>	9.6	9.7	9.6	9.9	10.1	9.9	6.4	7.2	5.1
<b>Upper East</b>	4.9	4.7	5.0	4.9	4.7	5.1	6.6	7.3	5.6
<b>Upper West</b>	3.0	3.0	3.1	3.1	3.1	3.2	2.3	2.4	2.2
<b>All Regions</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>N</b>	<b>18,912,079</b>	<b>9,357,382</b>	<b>9,554,697</b>	<b>17,436,592</b>	<b>8,499,602</b>	<b>8,936,990</b>	<b>735,296</b>	<b>445,114</b>	<b>290,182</b>

#### Current Distribution of the Non-Ghanaian Population

According to the 2000 Census, there are 740,191 non-Ghanaians in the country, representing fewer than 4 per cent of the total population. Table 7.2 shows that 59 per cent come from other ECOWAS countries, 23 per cent are from non-ECOWAS African countries and 18 per cent from outside Africa. The majority (56%) of the non-Ghanaian population are males. Roughly the same sex-difference is observed among other-ECOWAS and non-ECOWAS nationals, a reflection of male migrant selectivity.

The bulk of the non-Ghanaian population is concentrated in two regions, Ashanti (36.8%) and Greater Accra (15.9%), probably reflecting the fact that these two regions are the most industrialized. ECOWAS nationals are concentrated in Ashanti (30.5%), Greater Accra (15.7%) and the Volta (12.4%). The large proportion of ECOWAS nationals in the Volta could probably

be attributed to Aflao being the entry point for immigrants from Togo, Benin and Nigeria. That Ashanti attracts nearly a third of immigrants from the ECOWAS subregion is not surprising, because of its proximity to Cote d'Ivoire, Bukina Faso and Togo who would most likely travel by road. What is rather difficult to explain is the fact that Ashanti also provides a home to 44.4 per cent of African nationals outside the ECOWAS and to 47.9 per cent of non-Africans who would most likely travel by air. Perhaps, these non-Ghanaians are employees of NGOs, missionaries and investors in the mining towns in the regions.

**Table 7. 2: Non-Ghanaian Population by Region and Sex, and Origin, 2000**

Characteristics	Non-Ghanaians			ECOWAS			African, non ECOWAS			Non African		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>Total</b>	<b>100.0</b>	<b>55.8</b>	<b>44.2</b>	<b>100.0</b>	<b>54.6</b>	<b>45.4</b>	<b>100.0</b>	<b>57.3</b>	<b>42.7</b>	<b>100.0</b>	<b>57.5</b>	<b>42.5</b>
<b>Western</b>	9.6	9.9	9.1	7.8	8.0	7.5	13.4	13.7	13.0	10.5	10.9	10.0
<b>Central</b>	6.6	6.0	7.3	8.4	7.8	9.1	4.1	3.8	4.6	4.1	3.8	4.6
<b>Greater Accra</b>	15.9	15.7	16.2	15.7	15.6	15.8	14.9	14.6	15.4	18.0	17.6	18.6
<b>Volta</b>	9.3	8.7	9.9	12.4	11.8	13.0	5.6	5.2	6.2	3.7	3.5	4.0
<b>Eastern</b>	6.6	6.6	6.7	7.9	8.0	7.8	5.1	4.9	5.4	4.4	4.2	4.6
<b>Ashanti</b>	36.8	38.9	34.4	30.5	32.1	28.5	44.4	46.5	41.4	47.9	49.2	45.9
<b>Brong Ahafo</b>	6.5	6.5	6.6	8.1	8.2	8.0	4.9	4.8	5.0	3.5	3.4	3.6
<b>Northern</b>	4.5	4.2	4.9	5.6	5.3	6.0	2.9	2.7	3.1	2.8	2.7	3.0
<b>Upper East</b>	2.7	2.2	3.2	2.1	1.8	2.6	3.8	3.0	4.8	3.0	2.7	3.4
<b>Upper West</b>	1.5	1.3	1.7	1.5	1.4	1.7	0.9	0.8	1.1	2.1	2.0	2.3
All Regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>N</b>	<b>740,191</b>	<b>412,666</b>	<b>327,525</b>	<b>436,278</b>	<b>238,267</b>	<b>198,011</b>	<b>169,982</b>	<b>97,431</b>	<b>72551</b>	<b>133,931</b>	<b>76968</b>	<b>56963</b>

### **Population Distribution by Age and Sex**

Table 7.3 shows the age distribution of the population by region and sex. Ghana has a relatively young age structure, with about 41 per cent of the population below the age of 15 years, and a dependency ratio of about 87 per cent. In general, the pattern of the age distribution is similar in all regions although some regions exhibit a much older age structure than others. In particular, Greater Accra has the smallest proportion (33.1%) of the population below age 15, the highest proportion of working age group (63%) and the lowest dependency ratio (58.7%). In contrast, Northern has the highest proportion of people below age 15 (46.2%), the lowest proportion of adult working population, (49.2%) and the highest dependency ratio (103.2%).

Over the last thirty years, two major factors have substantially modified the regional population. The relatively young age structure of the Ghanaian population with its high dependency ratio is a source of worry. In particular, the population momentum inherent in such a structure may have serious implications for future population growth and size as well as the effect on economic development. Without substantial increase in economic growth, the country may not be able to meet the cost of investment in housing, schools, hospitals as well as food production required to meet the needs of a rapidly expanding population. The consequences of such a development in

terms of crime and social disorder may have a negative impact on the country's attractiveness to investors.

**Table 7.3 Population by Region, Age and Sex**

Region	Age Group					Dependency Ratio
	0-4	5-14	<15	15-64	65+	
<b>Both Sex</b>						
<b>All Regions</b>	<b>14.6</b>	<b>26.6</b>	<b>41.3</b>	<b>53.4</b>	<b>5.3</b>	<b>87.1</b>
Western	15.1	27.3	42.4	53.1	4.5	88.3
Central	15.3	28.0	43.2	51.0	5.7	95.9
Greater Accra	11.0	22.1	33.1	63.0	3.9	58.7
Volta	13.9	27.2	41.1	52.3	6.6	91.0
Eastern	14.5	27.2	41.7	52.5	5.8	90.5
Ashanti	15.3	26.7	42.0	51.9	6.1	92.6
Brong Ahafo	15.7	27.4	43.1	52.5	4.5	90.5
Northern	18.0	28.3	46.2	49.2	4.5	103.2
Upper East	14.7	28.7	43.4	50.2	6.4	99.2
Upper West	14.8	28.6	43.4	50.5	6.1	98.2
<b>Male</b>						
<b>All Regions</b>	<b>14.7</b>	<b>27.2</b>	<b>41.9</b>	<b>52.8</b>	<b>5.3</b>	<b>89.5</b>
Western	14.9	27.1	42.0	53.2	4.7	87.8
Central	15.9	29.7	45.5	49.6	4.9	101.7
Greater Accra	11.0	21.5	32.6	63.6	3.9	57.3
Volta	14.2	28.5	42.7	51.4	5.8	94.5
Eastern	14.7	28.4	43.1	51.8	5.2	93.2
Ashanti	15.3	26.6	42.0	51.1	7.0	95.8
Brong Ahafo	15.5	27.6	43.1	52.4	4.5	90.8
Northern	17.7	29.0	46.7	48.5	4.8	106.3
Upper East	15.1	31.2	46.3	46.8	6.9	113.7
Upper West	15.3	30.8	46.2	47.4	6.4	110.8
<b>Female</b>						
<b>All Regions</b>	<b>14.5</b>	<b>26.1</b>	<b>40.7</b>	<b>54.1</b>	<b>5.2</b>	<b>84.9</b>
Western	15.3	27.4	42.8	53.0	4.2	88.8
Central	14.7	26.4	41.2	52.4	6.5	90.9
Greater Accra	10.9	22.6	33.5	62.5	4.0	60.1
Volta	13.6	25.9	39.5	53.2	7.3	87.9
Eastern	14.3	26.2	40.4	53.2	6.3	87.9
Ashanti	15.2	26.8	42.0	52.8	5.2	89.4
Brong Ahafo	15.9	27.2	43.0	52.5	4.4	90.3
Northern	18.3	27.5	45.8	50.0	4.2	100.1
Upper East	14.2	26.4	40.6	53.3	6.0	87.5
Upper West	14.4	26.5	40.8	53.2	5.9	87.8

Although older people (persons aged 65+) constitute 5.3 per cent of the total population at the national level, substantial differences exist at the regional level, ranging from 3.9 per cent in Greater Accra to 6.6 per cent in Volta. The possible reason for the lower figure in Greater Accra is that after retirement and with advancing age, many of the elderly persons go back to their places of origin to escape the high cost of living in Greater Accra and to prepare for life in retirement. The indication is that both the proportion and number of older people are increasing



in Ghana, as is the case in a number of African countries, due to increases in life expectancy. The proportion of elderly persons in Ghana has consistently increased from 2.8 per cent in 1960, 3.1 per cent in 1970 and 3.2 per cent in 1984 to the 5.3 per cent in 2000. Consequently, the phenomenon of population ageing should be given attention in development programmes and should not be viewed as only pertaining to the developed world.

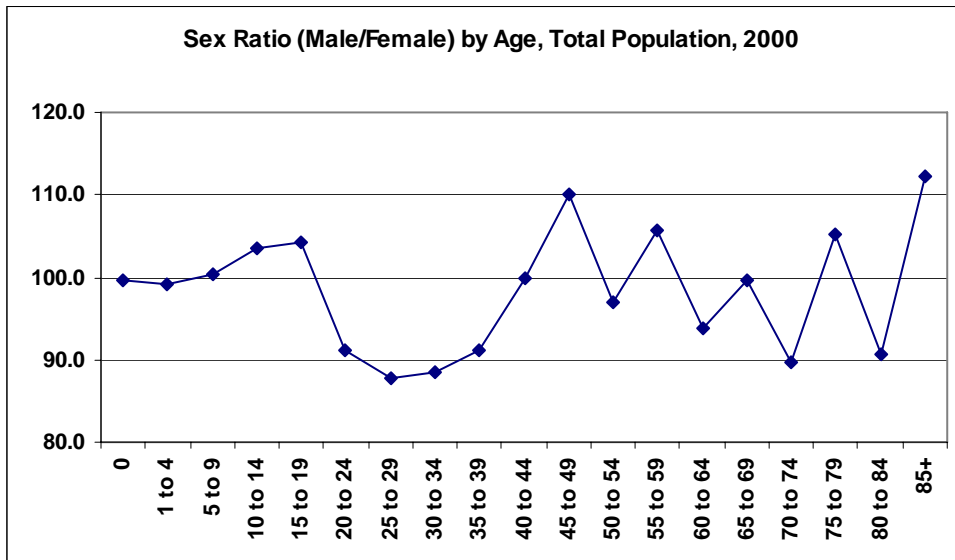
Generally in most countries, the expected sex ratio (number of males per 100 females) lies in the region of 103-106 at birth, meaning that there are more male than female births. Given that more males than females die at every age, the sex ratio declines gradually with age. Deviations in this pattern may be introduced by migration or unfortunate disasters that may affect one sex against the other. Table 7.4 shows the age-specific sex-ratio of the population of Ghana by region. There are obvious distortions due to age misreporting as well as deficits in specific age groups that may be attributed to selective migration by age and sex. It is difficult to distinguish which of these is the dominant influence in the observed patterns. Gross age over- and under-statement by the different sexes leads to a wide variety of regional pattern.

**Table 7.4 Sex Ratio (Male/Female) by Age, and Region, 2000**

Age	Total	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West
0	99.6	101.2	98.8	100.6	98.0	100.3	102.2	98.9	94.5	100.3	95.3
1-4	99.2	100.2	98.0	98.3	98.1	99.5	102.6	98.3	96.6	98.4	98.8
5-9	100.4	100.6	99.8	96.3	99.6	102.2	101.7	100.4	99.2	104.5	104.1
10 -14	103.6	104.2	105.4	89.7	107.3	108.3	99.3	104.9	113.7	116.6	112.2
15-19	104.2	107.2	105.7	90.0	110.7	109.6	98.1	109.2	120.6	109.9	109.5
20-24	91.1	90.4	80.3	100.3	90.5	87.8	89.9	94.3	91.2	82.0	83.3
25-29	87.8	92.2	80.2	98.4	83.2	85.3	89.5	89.7	81.1	73.4	72.3
30-34	88.5	98.1	79.0	99.1	82.2	87.2	92.6	92.7	77.4	68.0	69.1
35-39	91.1	105.1	79.6	97.8	83.2	88.7	94.3	96.1	88.6	71.9	73.6
40-44	99.9	118.2	89.5	103.9	89.1	96.7	105.5	108.9	99.7	76.7	79.6
45-49	110.0	130.7	94.7	112.1	93.1	104.0	121.5	120.6	121.8	85.3	86.5
50-54	97.1	111.6	80.5	107.1	86.6	93.9	106.6	105.8	100.6	73.2	73.9
55-59	105.7	126.6	85.9	111.4	88.6	98.3	127.6	110.5	110.2	86.0	80.8
60-64	93.8	111.1	75.3	108.1	78.3	90.6	107.9	100.1	99.0	72.5	74.6
65-69	99.6	116.0	76.5	101.6	77.9	89.4	127.2	111.5	108.0	91.8	81.0
70-74	89.8	102.0	65.7	88.9	71.8	79.3	101.7	98.2	108.9	101.1	100.8
75-79	105.3	123.4	70.6	91.4	78.5	83.2	141.8	115.3	132.7	131.8	107.5
80-84	90.6	101.2	61.0	85.8	69.3	69.4	122.9	90.1	104.6	99.5	104.2
85+	112.2	130.2	69.4	98.8	77.9	70.6	179.4	97.3	119.1	120.7	120.3

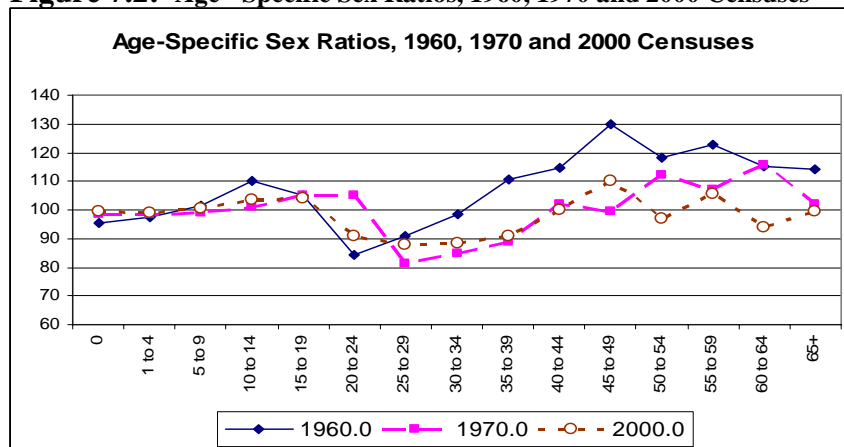
The national data show a general deficit of males between age 20 and 44 and fluctuation in the pattern thereafter (Fig 7.1). The deep trough in the 20-44 age group could be the result of younger men over-stating their ages, older women under-stating their ages, or more males than females emigrating.

**Figure 7.1**



A comparison of the 2000 data with data from the 1960 and 1970 censuses shows some similarities in age-specific sex-ratio pattern for 1970 and 2000 (Fig 7.2). In each case, there is an age apparent male deficit in the 20-44 age group, an indication that age selective emigration may no more likely be the reason for the drop. Indeed, the relative reduction of male excess from, 1960 to 1970 may be attributed to the exodus of aliens, most of whom were males, as a consequence of the 1969 Aliens Compliance Order.

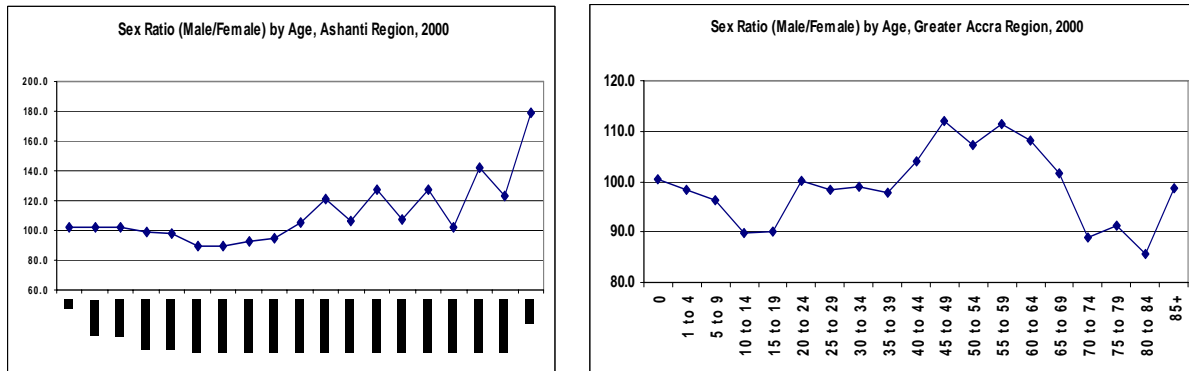
**Figure 7.2: Age - Specific Sex Ratios, 1960, 1970 and 2000 Censuses**



The pattern of age-specific sex-ratios varies from region to region. Western, Greater Accra, Ashanti, Brong Ahafo and the Northern demonstrate a relative male-excess beyond age 40 years,

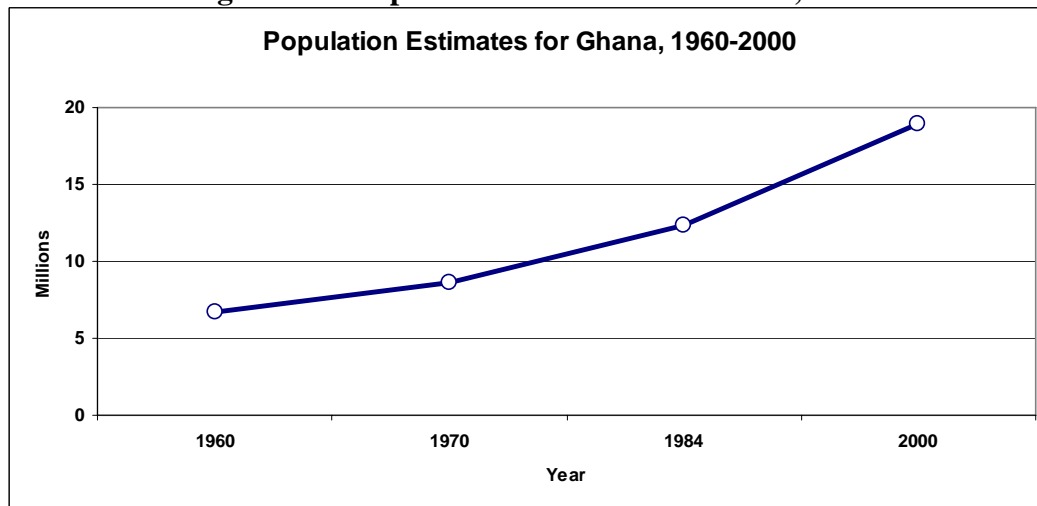
while Upper East and Upper West show a huge male deficit between ages 20 and 60. This may reflect the migration of males to the central and southern parts of the country in search of opportunities. While age-misreporting may explain part of this variation, it is highly unlikely to account for all the male excess. Greater Accra, in addition, shows a marked variation from the national pattern of sex ratios with a more than expected male deficit at ages 10-19 and at 70 years and older (Fig 7.3). These deviations may more likely be the result of relatively higher male than female mortality.

**Figure 7.3: Sex Ratio (Male/Female) by Age, 2000**



As in other parts of Africa, the population of Ghana has been increasing rapidly over the past several decades. From the available censuses, Ghana's population has increased from 6.7 million in 1960, 8.6 million in 1970 and 12.3 million in 1984 to 18.9 million in 2000 (Fig 7.4).

**Figure 7.4: Population Estimates for Ghana, 1960 - 2000**



This corresponds to an annual rate of increase of 4.7 (1960-1970), 3.3 (1970-1984) and 4.6 (1984-2000). The factors that influence the distribution of the population, natural growth, internal migration and urbanization, have been major sources of concern for decades (Cleveland, 1991; Ghana Statistical Service 1995a, 1995b, 2002). The overall rapid rate of population

growth in Ghana, however, conceals substantial regional disparities in spatial spread. There are parts of Ghana that are densely populated and others that are virtually uninhabited. The use of crude measures of density, such as arithmetic population density (population per unit area), fails to distinguish between arable and non-arable land and, therefore, may give the erroneous impression of large expanse of land waiting to be filled. True measures of distribution must incorporate a factor of productivity and environmental sustainability.

The population growth has not taken place uniformly throughout the country. The three most populous regions are Ashanti, (19.1%), Greater Accra (15.5%) and Eastern (11.1%). Together, they constitute about 46 per cent of the total population in 2000 (Table 7.5). The least populous regions are Upper West (3.0%) and Upper East (4.9%), accounting for just about 8 per cent of the total population in 2000. While Upper East and Upper West have remained the least populous and Ashanti and Eastern have remained among the three most populous since 1960, Greater Accra has increased in size over the period such that it has moved from the seventh in 1960 to fourth in 1970, third in 1984 and second in 2000.

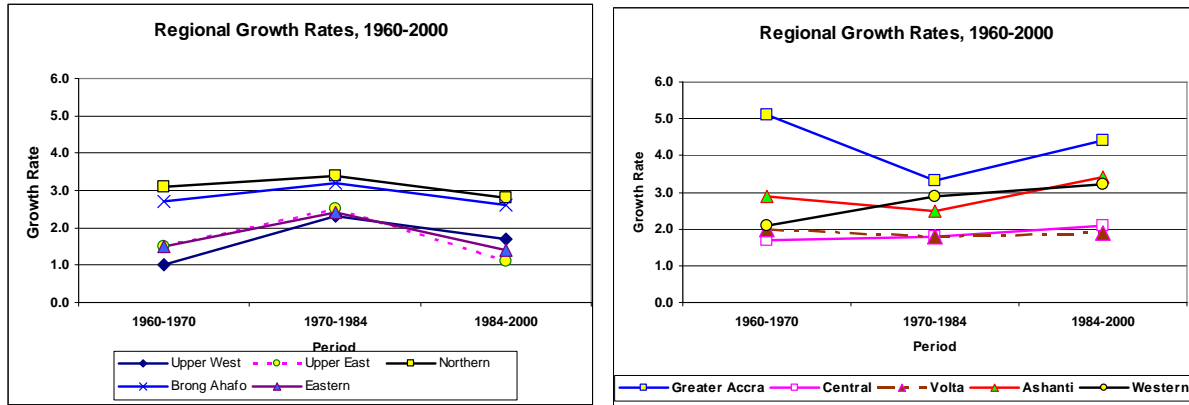
**Table 7.5 Regional Population Trends and Growth Rates, 1960- 2000**

Region	Population Size				Growth Rate		
	1960	1970	1984	2000	1960-1970	1970-1984	1984-
<b>All Regions</b>	6,726,815	8,559,313	12,296,081	18,912,079	2.4	2.6	2.7
<b>Western</b>	626,155	770,087	1,157,807	1,924,577	2.1	2.9	3.2
<b>Central</b>	751,392	890,135	1,142,335	1,593,823	1.7	1.8	2.1
<b>Greater Accra</b>	541,933	903,447	1,431,099	2,905,726	5.1	3.3	4.4
<b>Volta</b>	777,285	947,268	1,211,907	1,635,421	2.0	1.8	1.9
<b>Eastern</b>	1,044,080	1,209,828	1,680,890	2,106,696	1.5	2.4	1.4
<b>Ashanti</b>	1,109,133	1,481,698	2,090,100	3,612,950	2.9	2.5	3.4
<b>Brong Ahafo</b>	587,920	766,509	1,206,608	1,815,408	2.7	3.2	2.6
<b>Northern</b>	531,573	727,618	1,164,583	1,820,806	3.1	3.4	2.8
<b>Upper East</b>	468,638	542,858	772,744	920,089	1.5	2.5	1.1
<b>Upper West</b>	288,706	319,865	438,008	576,583	1.0	2.3	1.7

There is considerable variation in the growth trajectories between the regions and Figure 7.5 presents the growth trajectories for each region. Three broad trends can be distinguished. The first trend is characterized by mild to moderate growth between 1960-1970 and 1970-1984 and a decline in the rate of growth between 1970-1984 and 1984-2000. The regions exhibiting this pattern are Eastern, Brong Ahafo, Northern, Upper East and Upper West.

The second trend is characterized by relatively little change in rate between 1960-1970 and 1970-1984; and between 1970-1984 and 1984-2000. The regions exhibiting this pattern are Central and Volta. A variant of this is Western that exhibits a trend similar to the first group between 1960-1970 and 1970-1984 but that of the second group between 1970-1984 and 1984-2000. The third distinct pattern of growth is characterized by substantial decline in growth between 1960-1970 and 1970-1984 and substantial increase between 1970-1984 and 1984-2000. The regions showing this pattern are Ashanti (from 2.5 to 3.4 per cent) and Greater Accra (from 3.0 to 4.4 per cent). These regional differences are due to differences in natural growth (births minus deaths) as well as migration patterns.

**Figure 7.5: Regional Growth Rates, 1960 - 2000**



Over the last 30 years, two major factors have substantially modified the regional population distribution. The first is the general movement of people from the rural to the urban areas, which is partly responsible for the accelerated growth of Accra and Kumasi metropolis, as well as many other smaller urban areas. The second is the major population movement from the north to the south of the country, which has resulted in a relative decline in the population of the northern regions to the advantage of the mid-forest and southern region.

### **Regional Population Density**

The estimates of population density for Ghana has increased from 28 inhabitants per square kilometre (km<sup>2</sup>) in 1960, to 36 (1970), 52 (1984) and 79 in 2000, reflecting the substantial increases in the population over the period (Table 7.6).

**Table 7.6: Population Density by Region, 1960-2000**

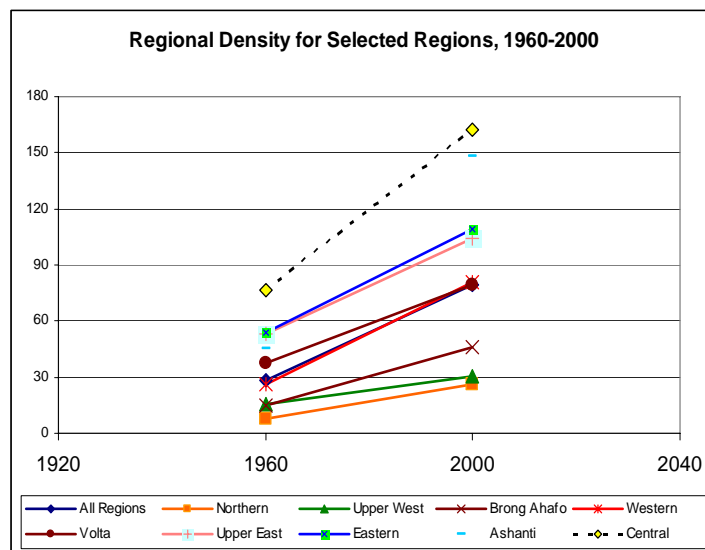
Region	Area (sq. km)	D e n s i t y				Rate of Change (1960 - 2000)	Absolute Change
		1960	1970	1984	2000		
All Region	238,533	28.2	35.9	51.6	79.3	181.1	51.1
Western	23,921	26.2	32.2	48.4	80.5	207.3	54.3
Central	9,826	76.5	90.6	116.3	162.2	112.1	85.7
Greater Accra	3,245	167.0	278.4	441.0	895.4	436.2	728.4
Volta	20,570	37.8	46.0	58.9	79.5	110.4	41.7
Eastern	19,323	54.0	62.6	87.0	109.0	101.8	55.0
Ashanti	24,570	45.5	60.8	85.7	148.1	225.7	102.6
Brong Ahafo	39,557	14.9	19.4	30.5	45.9	208.8	31.0
Northern	70,348	7.6	10.3	16.6	25.9	242.6	18.3
Upper East	8,842	53.0	61.4	87.4	104.1	96.3	51.1
Upper West	18,876	15.3	17.0	23.2	30.6	99.8	15.3

The historical rates of regional population growth and redistribution have created varied regional population densities. As seen from Table 7.6, the regional population densities in 2000 ranged from 26 to 895 persons per square kilometre. The most sparsely populated region (Northern), increased in density from 7.6 to 25.9 persons per square kilometre, while the most densely populated region (Greater Accra) increased in density from 167.0 to 895.4 persons between 1960

and 2000. The highest percentage increase in density between 1960 and 2000 occurred in Greater Accra (436.2%), followed by Northern (242.6%), Ashanti (225.7%), Brong Ahafo (208.8%) and Western (207.3%) while Upper East (96.3%) and Upper West (99.8%) recorded the lowest increases in density over the period.

Figure 7.6 illustrates the trend in regional population density over the four decades between 1960 and 2000. Greater Accra (728.4), Ashanti (102.6) and Central (85.7) recorded phenomenal increases in absolute density, while Northern, (18.3) Upper West (15.3) and Brong Ahafo (31.0) gained only modest increases. The low density of Northern and Upper West may be due to the harsh and unfavourable environment, lack of infrastructural facilities and the problem associated with the tsetse fly and onchocerciasis menace.

**Figure 7.6**



## 7.4 Population Redistribution

### Pattern and Trends in Internal Migration

Generally, migration may be defined as the movement of people in space, often involving a change in the usual place of residence. A migrant is, therefore, a person whose current usual place of residence is different from his/her place of birth or previous place of residence. The study of migration is important for two reasons. First, migrants tend to contribute directly to population decrease in the source areas or increase in the destination areas. Second, migration exhibits sex- and age-selectivity. Hence, migration selectivity in terms of productive capacity, age and sex composition can have significant demographic, social and economic impact on both the source and destination areas.

Migration is difficult to measure because it is not a single event but one that is typically continuous and often repetitive. It is very difficult to establish permanency, for the exact timing or direction of subsequent moves cannot be known. The three key questions necessary for exploring internal migration: what movements take place in spatial terms (intra-regional and

inter-regional migration), who are involved in population movements and why these movements take place, unfortunately, are not covered in censuses. Using the census information regarding usual place of residence five years before the census and current residence, however, an attempt is made to discuss these migration issues.

Internal migration may be defined as the movement of people between geographical boundaries within national borders. Such migration may be seasonal, repetitive or long-term. Four main types of internal population mobility may be distinguished in Ghana: rural-rural, rural-urban, urban-rural and urban-urban. Internal migration can also be analyzed in terms of intra and inter region.

Intra-regional migration refers to population movement between localities within an administrative region, while inter-regional migration describes the movement of people between different regions of the country. These can be assessed on the basis of information on place of birth classified by place of usual residence, or place of residence five years ago or current place of residence. People migrate either within or from one region to another for a variety of reasons. The most common reasons are economic, family reunification, or educational opportunities. In Ghana, the ten regions are at varying levels of socio-economic development, with considerable differences in the distribution of educational and vocational institutions, large scale industrial, manufacturing, commercial and construction concerns, and availability of productive land. Additionally, the concentration of governmental and non-governmental institutions in the more prosperous regions have exacerbated the scale and direction of out-migration.

Table 7.7 indicates that for the country as a whole, intra-regional migration has declined from 19 per cent in 1960 to 10 per cent in 2000; the decline is reflected in all regions. This decline may reflect a spirit of adventure in that once a decision has been taken to migrate, the desire may be to explore the unknown and therefore a decision to move to another region rather than another locality within the same region. The Table also shows that in addition to Greater Accra, which has consistently been the highest recipient of migrants from other regions, Western, Brong Ahafo and Ashanti have received relatively high proportions of inter-regional migrants compared with other regions. There appears to have been significant declines in both intra and inter regional migration between 1960 and 2000.

**Table 7.7: Trends in Internal Migration by Type and Region**

Region	Intra-regional migrants				Inter-regional migrants			
	1960	1970	1984	2000	1960	1970	1984	2000
All Region	18.9	20.6	19.8	9.9	17.6	21.4	19.3	17.5
Western	26.3*	21.3	17.0	9.2	9.4*	28.8	28.7	26.1
Central	-	20.7	19.2	13.4	-	12.8	11.8	11.8
Greater Accra	7.0	5.2	8.0	6.0	35.8	46.6	36.3	36.9
Volta	21.9	25.4	25.6	13.9	6.0	7.9	5.6	6.7
Eastern	29.8	30.4	25.4	15.1	15.8	17.7	17.0	14.9
Ashanti	21.4	23.0	19.8	11.3	20.3	20.2	16.4	15.7
Brong Ahafo	14.0	18.9	17.6	7.1	20.6	25.4	24.7	20.2
Northern	24.6+	24.9	28.7	8.3	2.7+	9.5	8.6	6.0
Upper East	-	23.1^	19.6	2.4	-	4.5^	5.3	5.4
Upper West	-	-	24.0	10.0	-	-	6.3	5.8

Source: 1960-2000 Ghana Population Censuses

Note: \* includes Central

+ includes Upper East and Upper West

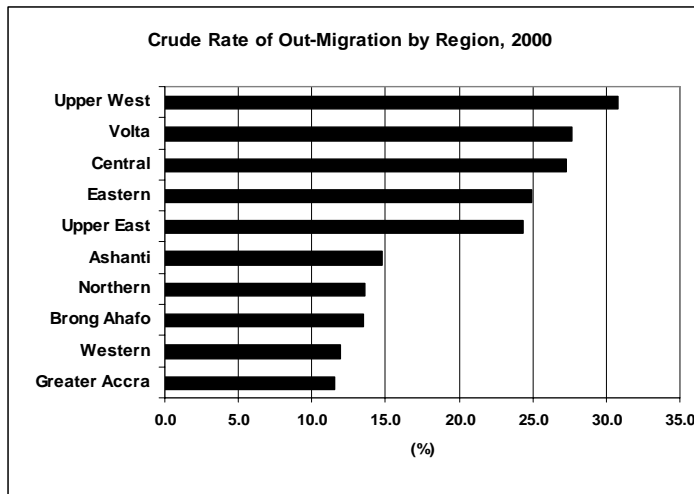
^ includes Upper West

In general, internal migration has moved from equal weight being given to both intra and inter-regional migration in the earlier years (1960-1984) to greater weight given to inter-regional as against intra-regional in 2000. For Western, Greater Accra and Brong Ahafo, inter-regional migration is about thrice that of intra-migration, while in other regions there is not much difference between the two types. The possible reason for this trend in inter-regional migration is the differential in development infrastructure and standard of living across regions.

Figure 7.7 displays the crude rates of out-migration by region. The rate of out-migration refers to the proportion of Ghanaian by birth born in that region who currently or usually reside in other regions, while the rate of in-migration is the proportion of residents of a region who were borne in other regions besides the one they live in. The Figure indicates that five regions are relatively large sending areas, in the sense that about a fourth of the population of these regions live in other regions: Upper West (31%), Volta (28%), Central (27%), Eastern (25%) and Upper East (24%), while the remaining five regions have less than 15 per cent living in other regions.

On the other hand, Greater Accra (41.3%), Western (29.3), Brong Ahafo(21.8%) and Ashanti (20.1%) appear to be the most likely destination areas for migrants. It is interesting to note that these are among the regions with low proportions of the native born living in other regions. Northern is also interesting, because it has one of the low proportions of native born living in other regions in addition to having very low proportion of usual residents born outside the region, which somehow makes it a closed region.

**Figure 7.7: Crude Rate of Out-Migration by region, 2000**



Ghanaians born outside the country constitute only about one per cent of the total population. A majority was born in ECOWAS countries, and contribute just about 0.6 per cent to the total Ghanaian population. Those born in non-ECOWAS African countries contribute less than 0.3 per cent to the total population, while those born in non-African countries contribute less than 0.2 per cent to the total population of Ghana.



Table 7.8 shows that Ghanaian nationals born outside the country currently reside in Ashanti and Greater Accra mainly. These are the most developed regions and should be attractive for Ghanaians who relocate, but it could also mean that most such Ghanaians may have parents who reside in these regions and therefore these would be their natural places to relocate to.

**Table 7.8 Ghanaians Born Outside Ghana by Region of Current Residence**

Current Region of Residence	Place of Birth		
	ECOWAS States	African Non ECOWAS	Outside Africa
Western	10.5	8.6	7.7
Central	10.6	2.4	8.1
Greater Accra	18.3	11.9	24.2
Volta	16.9	4.6	3.0
Eastern	6.4	5.1	7.7
Ashanti	21.7	59.1	37.6
Brong Ahafo	5.0	4.1	6.2
Northern	5.4	1.8	4.0
Upper East	3.1	2.0	0.9
Upper West	2.1	0.9	0.6
Total	100.0	100.0	100.0
N	101,098	43,678	33,834

The net migration rate, which is the net effect of in-migration and out-migration across regions, shows that the greatest net increase of 310 per 1000 population through migration is in Greater Accra, while the net loss of 332 per 1000 population is recorded for Upper West (Table 7.9).

**Table 7.9: In-migration, Out-migration, Net migration of Ghanaian by birth by Region**

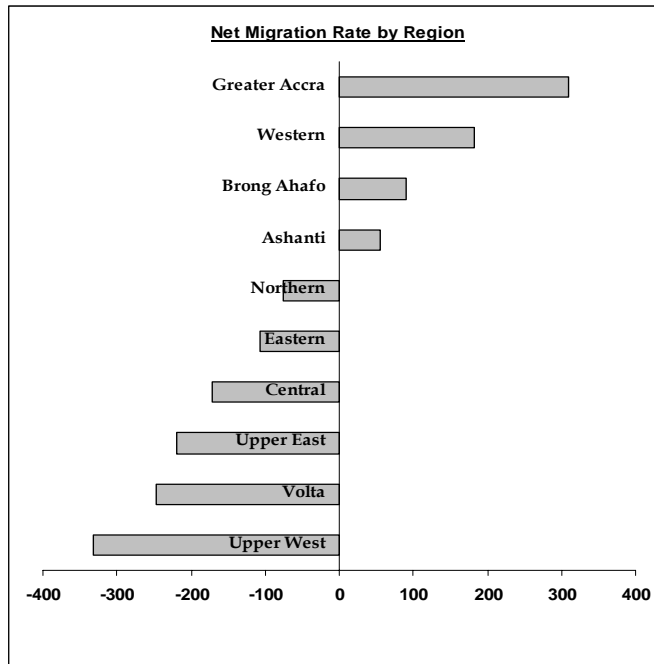
Region	In-migration	Out-migrant	Net Migration	Total Population	Net migration Rate (per 1000)
Western	519,584	168,792	+350,792	1,924,577	+182.3
Central	202,723	477,302	-274,579	1,593,823	-172.3
Greater Accra	1,106,52	204,749	+901,780	2,905,726	+310.3
Volta	130,227	533,631	-403,404	1,635,421	-246.7
Eastern	323,961	548,347	-224,386	2,106,696	-106.5
Ashanti	635,215	438,156	+197,059	3,612,950	+54.5
Brong Ahafo	371,557	207,808	+163,749	1,815,408	+90.2
Northern	117,557	256,279	-139,216	1,820,806	-76.5
Upper East	54,129	255,661	-201,532	920,089	-219.0
Upper West	36,221	227,874	-191,653	576,583	-332.4

Figure 7.8 shows that the other region with high net in-migration rate is Western (182/1000), while those with high net out-migration rates include Volta (247/1000), Upper East (219/1000) and Central (172/1000). The pattern appears to support the observation that there is a positive relationship between the level of social and economic development and the volume and direction of migration.

The general picture that emerges from the foregoing is that some regions are more attractive to migrants than others. The most attractive regions in Ghana appear to be Greater Accra, Western, Brong Ahafo and Ashanti. Among the factors that account for this is the greater access to

modern infrastructure: good roads, communication, educational institutions, hospitals facilities and favourable climatic conditions for agriculture. As a consequence, a vicious cycle has emerged. Regions with considerable advantages attract more investments, leading to widening of the disparities.

**Figure 7.8: Net Migration Rate by Region**



These differentials have profound influence on the direction, character and quality of out-migration flows. In this respect, Upper East, Volta and Upper West are at a considerable disadvantage. As a consequence, there is general movement of people from these to other more prosperous regions. The perception of easy availability of educational and other economic opportunities encourages many young people to migrate to the south, only to suffer disappointment and end up street hawking. In many cases, temporary migration for the purposes of obtaining education or vocational training has usually become permanent due to lack of job opportunities for the recent migrant.

For the poorer sending regions, the negative consequence of out-migration depends on the level and severity of the brain drain. In many cases, the more educated and more productive workers migrate leaving behind the uneducated and less educated. Migration to these poorer regions is limited and when it takes place, it is largely driven by compulsory job postings. For the more developed regions, the influx of large numbers of migrants, often with no guaranteed job prospects, has become a major burden. The negative effects include over-crowding, the development of large sprawling shanty towns, pollution, the breakdown of many social services and the large numbers of street hawkers.

There is undoubtedly a continuous and complex movement of people between rural areas within or between regions. Even at subsistence levels of development, intra-rural migration constitutes

the largest chunk of migratory movement. In general, rural-rural migration involves farmers moving spontaneously in search of new land or in formally organized rural development or resettlement programmes. The migration of people from rural or smaller urban to large urban places (step-wise migration) can also be a process of population redistribution.

## **7.5 Urbanization**

Urbanization refers to the change in the proportion of a population living in urban places. Urbanization can occur mainly through increased net in-migration and natural increase. The process of urbanization in the developing countries today differs in two respects from that experienced by the developed countries some decades ago. First, in the developed countries, the process of urbanization is closely associated with industrialization. Second, in contrast to the experience of the more developed countries, rural-to-urban migration is occurring in large volumes without a consequent depopulation of the rural areas. The reason, of course, is the difference in the rate of natural increase in the less developed countries compared with the rates in the more developed countries.

In Ghana, as in many other African countries, little attention was paid to the processes of urbanization until very recently. In general, urban growth was not viewed as a threat to national development (Chan and Lee, 1995; Mba, 2001; Mbamaonyeukwu, 2001). As a result, rural development and agro-based strategies of production were implemented without attention to urban growth. As economic development takes place, towns grow because they are economically more efficient. They bring together both the producers and consumers of a variety of goods and services. By mobilizing the raw materials, labour and the financial capital necessary for the production of goods and services in one area, cities and large towns reduce cost and increase the benefits accruing to industry. These benefits (profits) translate into higher standards of living. Hence, as cities/towns industrialize, their death rates fall, leading to increase in population. Even people living near cities tend to enjoy better health and other benefits, which act as magnets, attracting others to move into the more successful centres.

Additionally, both industrialization and commercialization generate a demand for jobs and create opportunities for people to move from agrarian to urban areas. Data from other developed countries suggest that third-world urbanization is more a function of opportunities in the city and town than it is of population pressure from the country side (Kelly and Williamson, 1984) but it cannot be discounted that adverse rural conditions in other circumstances do make an important contribution to rural-to-urban migration (Firebaugh, 1979). Thus, both rural push and urban pull continue to explain migration to cities in developing countries like Ghana.

### **Urbanization Levels and Trends**

Rural-urban migration is by far the most significant form of movement in long-term spatial population redistribution in Ghana. Economic and income disparities which give rise to a perception of availability of jobs in the urban areas appear to be the main driving force behind rural-urban migration. Other factors that influence the decision to move out include the presence of relatives and friends in the urban centres, availability of better housing, superior health services and educational opportunities.

The early perception by both the national governments and international development partners that urbanization is a neutral phenomenon has largely been abandoned. Findings from decennial censuses have indicated very substantial increases in the growth of the urban population (United Nations, 1985). Table 7.10 shows the levels and trends in the proportion urban, nationally and by region, for the period 1960 to 2000. At the national level, urbanization has increased from 23 per cent in 1960 to about 44 per cent in 2000. This corresponds to an annual growth rate of about 4.2 per cent for the period 1960-2000. The level of urbanization varies from one region to another. In 2000, the Greater Accra region was the most urbanized (88%), followed by Ashanti (51%), Central (37.5%) and Brong Ahafo (37.4%). The least urbanized regions are Northern (26.6%), Upper East (15.7%) and Upper West (17.5%).

**Table 7.10 Proportion Urban and Annual Growth Rate, National and by Region, 1960 – 2000**

Region	Urban Proportion				Annual Growth Rate			
	1960	1970	1984	2000	1960-1970	1970-1984	1984-2000	1960-2000
All Regions	23.1	28.9	32.0	43.8	4.7	3.3	4.6	4.2
Western	24.7	26.9	22.6	36.3	2.9	1.7	6.1	3.8
Central	28.0	29.1	28.8	37.5	2.1	1.7	3.7	2.6
Greater Accra	72.6	85.3	83.0	87.7	6.1	3.5	4.8	4.7
Volta	13.1	16.0	20.5	27.0	3.9	3.5	3.6	3.7
Eastern	21.1	24.6	27.7	34.6	3.4	2.9	2.8	3.0
Ashanti	25.0	29.7	32.5	51.3	4.6	3.1	6.3	4.8
Brong Ahafo	15.6	22.1	26.6	37.4	6.1	4.6	4.7	5.0
Northern	13.0	20.4	25.2	26.6	7.6	4.9	3.1	4.9
Upper East	3.9	7.3	12.9	15.7	7.8	6.5	2.3	5.2
Upper West	5.0	6.7	10.9	17.5	4.0	5.7	4.7	4.9

Each region experienced an increase in the level of urbanization over the period 1960 to 2000. There are significant differences, however, in the pace of urban growth within regions and at different periods. For instance, Brong Ahafo (6.1%), Greater Accra (6.1%), Northern (7.6%) and Upper East (7.8%) experienced substantial rates of urban growth between 1960 and 1970 but could not sustain the momentum, except Upper East (6.5%) that recorded the highest growth rate in the 1970-1984 period. Ashanti also recorded 6.3 per cent growth rate between 1984 and 2000. to break through the half-way mark, such that its urban population has increased from 25.0 per cent in 1960 to 51.3 per cent in 2000. In spite of the slack in urban growth since 1970, Greater Accra remains the most urbanized, with the urban population increasing from 72.6 per cent in 1960 to 87.7 per cent in 2000.

Generally, all regions experienced a much higher rate of urbanization in the immediate post-independence decade, 1960-1970. This may be attributed largely to intra-regional migration following the relaxation of the restrictive rural-urban migration laws of the colonial period. Between 1970 and 1984, all regions, except the Upper West, experienced a decline in the rate of urbanization some more so than others. These periods correspond to periods of rapid and substantial political changes and economic uncertainty in the country. In the period 1984-2000, many regions recorded either a decline or marginal changes in their rate of urbanization. The exceptions are Ashanti, Western, Greater Accra and Central which recorded increases in the rate of urban growth over the rates for 1970-1984.

While there are clear advantages to urbanization in Ghana, serious disadvantages have emerged as the pace of urbanization has outstripped the ability of city and town planners to meet the requirements for services and infrastructure: housing, water, roads, hospitals, schools. The movement of large numbers of people into the cities of Accra and Kumasi has led to the emergence of shanty towns. Many other large towns such as Tema, Tamale, Sekondi, Takoradi, are experiencing widespread pollution and over-crowding, both of which have serious implications for the health and well-being of the population. Crime and vice are also believed to be linked to urban life.

As a consequence, urbanization has become a major concern for Ghana. A variety of strategies for stemming the tide of rural-to-urban migration have been adopted. Principal among these is the decentralization of administration and governance to districts and local councils with the view to accelerating the pace of rural development. The introduction of micro-credit schemes and expansion of rural banks are all designed to move resources to the rural areas.

### Urban Population Size

Table 7.11 presents the growth in the urban population size and the contribution of the fifteen largest cities over the period 1970-2000. In 1970, the total urban population in Ghana was about 2.5 million, representing about 29 per cent of the total population. Of this number, 1.5 million people (62%) lived in fifteen urban areas with populations of more than 20,000, and accounted for about 18 per cent of the total population. Only two of the fifteen cities, Kumasi and Accra Metropolitan areas, had populations of more than 100,000. By the year 2000, the contribution of these 15 urban areas to the total urban population has dropped from 61.8 per cent to 50.2 per cent, even though their share of the national population has increased from 17.9 to 22.0 per cent. On the other hand, the 15 largest localities in 2000 constituted 51.0 per cent of the urban population (22.3% of total population), up from 60.5 per cent in 1960, an indication of substantial growth of smaller communities in 1960.

**Table 7.11 Urban Population Size and the Contribution of the Fifteen Largest Town to Overall Urban Growth, 1970-2000**

City/Town	Population			Population Change		Contribution to Urban Growth	
	1970	1984	2000	1970-1984	1984-2000	1970-1984	1984-2000
<b>Total Population</b>	8,559,313	12,296,081	18,912,079	3,736,768	6,615,998	-	-
<b>Total Urban Population</b>	<b>2,473,641</b>	<b>3,934,746</b>	<b>8,283,491</b>	<b>1,461,104</b>	<b>4,348,745</b>	-	-
<b>Proportion Urban</b>	<b>28.9</b>	<b>32.0</b>	<b>43.8</b>	<b>39.1</b>	<b>65.7</b>	-	-
<b>Bawku</b>	20,567	34,074	51,379	17,305	17,305	<b>0.92</b>	<b>0.40</b>
<b>Agona Swedru</b>	21,522	31,226	45,614	14,388	14,388	<b>0.66</b>	<b>0.33</b>
<b>Ashiaman</b>	22,549	50,918	150,312	99,394	99,394	<b>1.94</b>	<b>2.29</b>
<b>Nkawkaw</b>	23,219	31,785	43,703	11,918	11,918	<b>0.59</b>	<b>0.27</b>
<b>Sunyani</b>	23,780	38,834	61,992	23,158	23,158	<b>1.03</b>	<b>0.53</b>
<b>Ho</b>	24,199	37,777	61,658	23,881	23,881	<b>0.93</b>	<b>0.55</b>
<b>Obuasi</b>	31,005	60,617	115,564	54,947	54,947	<b>2.03</b>	<b>1.26</b>
<b>Koforidua</b>	46,235	58,731	87,315	28,584	28,584	<b>0.86</b>	<b>0.66</b>
<b>Cape Coast</b>	56,601	65,763	82,291	16,528	16,528	<b>0.63</b>	<b>0.38</b>
<b>Tema Municipality</b>	60,767	100,052	141,479	41,427	41,427	<b>2.69</b>	<b>0.95</b>
<b>Sekondi Sub-Metro</b>	63,673	70,214	114,157	43,943	43,943	<b>0.45</b>	<b>1.01</b>
<b>Takoradi Sub-Metro</b>	80,309	117,989	175,436	57,447	57,447	<b>2.58</b>	<b>1.32</b>
<b>Tamale Municipality</b>	83,623	135,952	202,317	66,365	66,365	<b>3.58</b>	<b>1.53</b>
<b>Kumasi Metropolis</b>	346,336	496,628	1,170,270	673,642	673,642	<b>10.29</b>	<b>15.49</b>
<b>Accra Metropolis</b>	624,091	969,195	1,658,937	689,742	689,742	<b>23.62</b>	<b>15.86</b>
<b>Total</b>	<b>1,528,506</b>	<b>2,299,755</b>	<b>4,162,424</b>	<b>1,862,669</b>	<b>1,862,669</b>	<b>52.79</b>	<b>42.83</b>
<b>Prop. Of Total Urban</b>	<b>61.8</b>	<b>58.4</b>	<b>50.2</b>	<b>42.8</b>	<b>42.8</b>		
<b>Prop of Total Population</b>	<b>17.9</b>	<b>18.7</b>	<b>22.0</b>	<b>28.2</b>	<b>28.2</b>		

Between 1970 and 1984, the total population increased by 3.7 million people. Growth in urban population contributed 39.1 per cent to this increase; the 15 largest localities contributed 52.8 per cent of the increase in urban population (Accra and Kumasi between them accounted for 33 per cent of the increase). Similarly, urban growth accounted for 65.7 per cent of total increase in population from 1984 to 2000. The contribution of the 15 largest localities in 1960 was not as substantial (42.8%). This is because the 15 localities are not the 15 largest in 2000. If one were to use the 15 largest localities in 2000, however, their contribution to overall urban growth is 62.0 per cent. This is in view of the fact that Bawku, Agona Swedru and Nkawkaw are replaced by Madina (76,697), Wa (66,644) and Tema New Town (58,786) in the 15 largest localities in 2000.

The results reinforce the observation that localities that furnish the greatest opportunities for economic advancement and agricultural production are likely to contain the greatest number of inhabitants. Greater Accra is home to Ghana's capital, while Accra and Kumasi are the major industrial and commercial nerve centres. On the other hand, Western, Eastern and Brong Ahafo are places that are relatively favourable for agricultural production and mining. This partly explains why an overwhelming majority of the population in Brong Ahafo, Eastern, and Western are rural dwellers, which is in sharp contrast to what obtains in Greater Accra.

## **7.6 Summary, Conclusions and Recommendations**

### **Summary and Conclusions**

The thrust of this chapter is to expand knowledge about the levels, differentials, patterns, and trends in population distribution, migration, and urbanization in Ghana, using the 1960-2000 population census results and data from surveys. The findings suggest that the two most populous regions are Ashanti and Greater Accra, while the least populous regions are Upper East and Upper West. The results show that for the whole country, the rate of population growth was 2.4 per cent per annum between 1960 and 1970, 2.6 per cent per annum between 1970 and 1984, and 2.7 per cent per annum between 1984 and 2000, implying a doubling time of about 26 years. At the regional level, there has been consistent increase in population growth rates in only Western and Central, while growth rates in the other regions fluctuated during the period under review. The most densely populated regions are Greater Accra, Central, Ashanti, Eastern, and Upper East, in that order; the least densely populated are Northern, Upper West and Brong Ahafo, in that order. Less than 5 per cent of Ghana's population are immigrants.

The proportion of non-migrant population has risen from 62 per cent in 1960 to 72 per cent in 2000 at the national level. At the regional level, Central (70%), Volta (71%), Northern (72%), Upper East (83%) and Upper West (75%) have the highest proportions of non-migrants over the period. The results further indicate that for the country as a whole, intra-regional migration has declined from 19 per cent in 1960 to 10 per cent in 2000. The decline in intra-regional migration affects all the regions, with the exception of Greater Accra and Northern. The findings further reveal that in addition to Greater Accra (39%) which has consistently been the recipient of the highest proportion of migrants from other regions, Western (28%), Brong Ahafo (23%) and Ashanti (18%) have received relatively higher proportions of inter-regional migrants compared with other regions.

The findings support the observation that changes in Ghana's population distribution have resulted largely from internal migration. Because of the lopsided nature of developmental programmes, which have favoured few regions at the expense of others, the more fortunate regions, particularly Greater Accra and Ashanti, have remained the areas of greatest population concentration, while Upper East and Upper West are the most disadvantaged. In general, regions with better social and economic opportunities continue to attract more migrants not only from within the country but also from parts of Africa and beyond. Migration has largely taken the form of rural-urban movements. As a result, the growth rate of the major urban areas has been rapid over the years.

Governments over the period, faced with the problems associated with rapid urban population growth, have taken measures intended to slow it, particularly by reducing or reversing the flow of migrants to urban areas in general and to certain urban agglomerations in particular. Such programmes aimed at influencing migration have taken mainly three forms: (a) those intending to transform the rural economy so as to retain people in the rural areas; (b) those intending to control in-migration to large cities; and (c) those aimed at redirecting migration from cities to small or medium-sized towns.

Because national development planning has not specifically addressed the interrelationships between population distribution and more balanced spatial development, many attempts that have been made toward wider spatial development have tended to increase the unevenness of population distribution. As a consequence, the few cities and large towns continue to attract large volumes of migrants from other parts of the country and beyond.

### **Recommendations**

Despite the constraints facing government, there is no hiding from the fact that the most effective strategy to improve population distribution is to adopt a balanced approach that promotes simultaneously the economic development of rural areas, the improvement of employment and living conditions in the cities of Accra and Kumasi and the growth of small and medium urban centres (Cape Coast, Ho, Koforidua, Bolgatanga, Sunyani, and Wa).

The social and economic development of the rural areas, through construction and maintenance of good road networks, building of more services (schools, hospitals and health centres); and creation and expansion of employment opportunities, will certainly go a long way toward retaining people already staying in rural areas and attracting people from the urban centres, especially the unemployed and underemployed.

Indeed, the rather substantial increase in the number and proportion of population in the three northern regions are somewhat linked to the eradication of the blackfly attack and the resultant onchocerciasis, and the provision of some infrastructural facilities, especially in the health and transport sectors. While the government and development partners should be commended for such laudable achievements, it is recommended that such developmental efforts should be increased and strengthened by making more funds available to ensure that various activities and programmes being pursued are continued and sustained while new ones are initiated.

Access to land is a crucial factor that leads to retention of migrants at most rural places of destination. In order to ensure adequate and effective population distribution, settlers must be assured of sustainable access to fertile land for farming purposes by landowners. In this respect, landowners should abide by all agreements reached with settler and non-settler farmers concerning use of land, including duration of lease. Additionally, new frontier agricultural areas that are not particularly accessible due to physical barriers such as large water bodies, inaccessible farm lands such as the onchocerciasis areas, areas with poor road networks, and flood-prone and water-logged areas should be made more accessible by linking them with good feeder road network to ease transportation to and from these areas.

The promotion of rural development should be a goal in itself, irrespective of its possible impact on migration. Rural development strategies should be combined with policies that promote the growth of small towns and intermediate urban centres so that the latter may provide markets for agricultural products and be the centres of agro-processing and other small-scale industries. Efforts to improve the access of rural residents to health and educational services are crucial in improving the quality of rural life, while reduction in fertility related to the improved provision of reproductive health services is likely to reduce migration pressures in the medium term.

Because of very low rates of fertility and mortality, and barring massive immigration, urban growth is primarily due to internal migration in many developed countries (United Nations, 1991). This is not the case in Ghana and many developing countries where urban growth is almost equally the result of internal migration and the effect of natural increase (caused by high fertility and low mortality), though latest nationally representative empirical evidence suggests that fertility has declined significantly in the country (Ghana Statistical Service and Macro International Inc., 1999; Mba, 2002) which invariably leads to reclassification of areas from rural to urban. Further reductions of urban fertility through massive and sustained uptake of contraceptive technology would also contribute significantly to controlling the growth of the cities.



## APPENDICES

**Table A 7.1: Inter-Regional Migration and Migration Rates in Ghana for Ghanaians by Birth, 2000**

Region of Birth	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West	All Region	Crude Rate of Out-migration <sup>1</sup>
All Places	1,774,036	1,474,584	2,679,991	1,525,745	1,980,719	3,154,860	1,705,612	1,740,701	851,375	584,807	17,436,592	
Western	<u>1,254,452</u>	32,158	55,482	5,437	15,342	39,592	11,253	3,417	3,263	2,848	1,423,244	11.9
Central	127,956	<u>1,271,861</u>	174,557	7,553	55,709	86,811	15,446	6,151	2,005	1,114	1,749,163	27.3
Greater Accra	25,451	31,225	<u>1,573,462</u>	27,578	54,051	37,239	13,618	8,002	5,161	2,424	1,778,211	11.5
Volta	48,344	28,006	246,901	<u>1,395,518</u>	107,538	52,342	28,655	18,268	2,084	1,511	1,929,149	27.7
Eastern	63,304	41,897	315,775	21,315	<u>1,656,758</u>	77,800	19,351	4,288	2,842	1,775	2,205,105	24.9
Ashanti	89,950	32,025	158,748	10,034	35,743	<u>2,519,645</u>	69,128	14,842	17,630	10,056	2,957,801	14.8
Brong Ahafo	58,439	6,792	33,772	4,787	10,783	70,823	<u>1,334,055</u>	11,042	4,535	6,835	1,541,863	13.5
Northern	20,084	6,778	45,230	29,483	12,811	69,277	59,865	<u>1,623,638</u>	8,443	4,308	1,879,917	13.6
Upper East	43,569	5,227	26,862	2,147	10,932	90,720	54,622	18,906	<u>797,408</u>	2,676	1,053,069	24.3
Upper West	25,518	4,066	17,315	1,917	9,749	50,193	90,704	24,590	3,822	<u>512,586</u>	740,460	30.8
ECOWAS State	10,624	10,745	18,503	17,133	6,454	21,905	5,023	5,418	3,164	2,129	101,098	
Africa other than ECOWAS	3,740	1,056	5,197	1,818	2,237	25,814	1,808	793	876	339	43,678	
Outside Africa	2,605	2,748	8,187	1,025	2,612	12,717	2,084	1,346	304	206	33,834	
Crude Rate of In-migration <sup>2</sup>	29.3	1.7	41.3	8.5	16.4	20.1	21.8	6.7	6.4	6.6		

Source: Compiled from the 2000 population and Housing census of Ghana.

1. Regional row less diagonal as proportion of row total
2. Regional column total less diagonal as proportion of column total

**Table A 7.2: Male Inter-Regional Migration for Ghanaians by Birth, 2000**

Region/Place of Birth	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West	Total	Crude Rate of Out-migration
Total	885,624	695,416	1,309,597	731,127	963,379	1,548,486	847,329	857,833	400,874	260,520	8,499,602	
Western	<u>613,624</u>	14,784	26,641	2,620	7,347	19,713	5,685	1,656	1,717	1,367	695,154	11.7
Central	64,305	<u>595,407</u>	85,151	3,905	26,557	43,588	8,169	3,305	1,005	583	831,975	28.4
Greater Accra	13,469	15,400	<u>765,692</u>	14,056	27,109	19,704	7,343	4,283	2,663	1,203	870,922	12.1
Volta	25,712	14,284	121,511	<u>667,320</u>	53,773	28,129	15,068	9,194	1,083	779	936,853	28.8
Eastern	33,722	20,384	151,567	10,276	<u>801,320</u>	39,562	10,224	2,226	1,472	872	1,071,625	25.2
Ashanti	46,938	16,057	81,077	4,919	17,497	<u>1,219,156</u>	34,454	7,334	8,945	4,659	1,441,036	15.4
Brong Ahafo	30,706	3,398	17,236	2,254	5,265	35,269	<u>649,246</u>	5,481	2,233	3,180	754,268	13.9
Northern	10,908	3,743	22,211	14,164	7,146	36,039	32,259	<u>800,098</u>	4,191	2,063	932,822	14.2
Upper East	23,835	2,802	4,176	1,136	6,049	48,713	29,945	8,702	<u>373,823</u>	1,192	510,373	26.8
Upper West	13,213	2,089	8,487	1,055	5,542	27,037	50,195	11,954	1,768	<u>243,516</u>	364,856	33.3
*Other ECOWAS State	5,388	5,145	9,096	8,023	3,227	11,548	2,675	2,587	1,396	899	136,550	
*Africa other than ECOWAS	3,740	1,056	5,197	1,818	2,237	25,814	1,808	793	876	339	121,340	
*Outside Africa	2,605	2,748	8,187	1,025	2,612	12,717	2,084	1,346	304	206	49,984	
Rate of In-migration	30.7	14.4	41.5	8.7	16.8	21.3	23.4	6.7	6.7	6.5		

Source: The 2000 Population and Housing Census of Ghana

Note: These are persons who were born outside Ghana but are regarded as Ghanaians by birth by virtue of the fact that their parents are/were Ghanaians.

**Table A 7.3: Female Inter-Regional Migration for Ghanaians by Birth, 2000**

Region/Place of Birth	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West
Total	885,995	79,168	1,370,394	794,618	1,017,340	1,606,374	858,283	882,868	450,663	288,287
Western	<u>640,828</u>	17,374	28,841	2,817	7,995	19,879	5,568	1,761	1,546	1,481
Central	63,651	<u>676,454</u>	89,406	3,648	29,152	43,223	7,277	2,846	1,000	531
Greater Accra	11,982	15,825	<u>807,770</u>	13,522	26,942	17,535	6,275	3,719	2,498	1,221
Volta	22,632	13,722	125,390	<u>728,198</u>	53,765	24,195	13,587	9,074	1,001	732
Eastern	29,582	21,513	164,208	11,039	<u>855,438</u>	38,238	9,127	2,062	1,370	903
Ashanti	43,012	15,968	77,671	5,115	18,246	<u>1,300,489</u>	34,674	7,508	8,685	5,397
Brong Ahafo	27,733	3,394	16,536	2,533	5,518	35,554	<u>684,809</u>	5,561	2,302	3,655
Northern	9,176	3,035	23,019	15,319	5,665	33,238	27,606	<u>823,540</u>	4,252	2,245
Upper East	19,734	2,425	12,686	1,011	4,883	42,007	24,677	10,204	<u>423,585</u>	1,484
Upper West	12,305	1,977	8,828	862	4,207	23,156	40,509	12,636	2,054	<u>269,070</u>
*Other ECOWAS State	5,236	5,600	9,407	9,110	3,227	10,357	2,348	2,831	1,768	1,230
*Africa other than ECOWAS	1,793	505	2,537	939	1,046	12,258	833	405	432	205
*Outside Africa	1,331	1,376	4,095	505	1,256	6,245	993	721	170	133

Source: The 2000 Population and Housing Census of Ghana

Note: These are persons who were born outside Ghana but are regarded as Ghanaians by birth by virtue of the fact that their parents are/were Ghanaians.

**Table A7.4: Urban and Rural Population Distribution of Ghana by Region: 1960-2000**

	1960		1970		1984		2000	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
All Region	1,551,174	5,175,641	2,472,456	6,086,857	3,934,796	8,361,285	8,274,270	10,637,809
Western	154,612	471,543	207,343	562,744	261,766	896,041	698,418	1,226,159
Central	210,411	540,981	258,636	631,499	329,196	813,139	598,405	995,418
Greater Accra	393,383	148,550	726,553	125,061	1,188,279	242,821	2,547,684	358,042
Eastern	220,765	823,315	310,073	951,588	466,276	1,214,614	727,914	1,378,782
Volta	102,101	675,184	151,096	796,172	247,906	964,001	441,084	1,194,337
Ashanti	276,772	832,361	440,526	1,041,172	697,750	1,410,350	1,853,065	1,759,885
Brong Ahafo	91,491	496,429	169,072	597,437	321,106	885,502	678,780	1,136,628
Northern	69,063	462,510	148,320	579,298	293,462	871,121	483,790	1,337,010
Upper West	14,342	274,342	21,374	298,491	47,549	390,459	100,848	475,735
Upper East	18,234	18,234	39,858	503,395	99,506	673,237	144,282	775,807

Source: The 1960-2000 Censuses of Ghana.

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## CHAPTER 8: FERTILITY LEVELS, PATTERNS AND TRENDS

### 8.1 Introduction

Fertility patterns and trends provide a sense of the future course of population growth and its potential implications for other demographic processes. The fundamental importance of understanding these patterns and trends lies in the strong association between population growth and the social and economic well being of the individual. Until the mid 1980s, the total fertility rate for Ghana remained stable at around seven children per woman (Gaisie, 1976; Owusu, 1984; Shah and Singh, 1985). This was considered exceptionally high in relation to available national resources and several attempts were made by government to lower the rate of childbearing in the country (National Population Council, 1994; Republic of Ghana, 1995).

This began with the adoption of the first national population policy in 1969, which sought to reduce the population growth rate from its estimated level of 3 per cent to 1.7 per cent by the year 2000 (Ministry of Finance and Economic Planning, 1992). The launching of the Ghana National Family Planning Programme (GNFPP) followed in May 1970. This Programme sought to improve the quality of life by providing individuals and couples with the opportunity to regulate their families if they so desired. In 1971, the GNFPP Secretariat was established to implement the fertility reduction strategies outlined under the 1969 population policy. By 1988 and after almost two decades of implementation of the policy, Ghana's fertility level had declined only slightly to 6.4 children per woman (Ghana Statistical Service, 1999).

Concern for the mismatch between population growth rate and national resources led to the establishment of the National Population Council in May 1992 and a review of the national population policy in 1994 (National Population Council, 1994; Statistical Service, 1994). The aim was to integrate population issues into all sectors of development including health, education, environment and rural development and to ensure that family planning services are accessible and affordable to all couples and individuals. In addition, family planning services were to be integrated with maternal and child health services to reduce the high level of infant and maternal morbidity and mortality.

Some of the targets set include reducing the total fertility rate (TFR) from 6.4 children per woman in 1988 to 5.9 in 2000 and further to 5.0 by the year 2010. However, since 1988, there has been a persistent and seemingly dramatic fall in fertility. The TFR, for example, fell from 6.4 in 1988 to 5.5 in 1993 and then to 4.6 in 1998. The observed declines between 1988 and 1993 and 1993 and 1998 have been described as inconsistent with expectation, given the levels of contraceptive use and other proximate determinants of fertility during the period. This analysis attempts to re-examine and offer an assessment of the fertility situation in Ghana, using all available post independence data.

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Dr. Philomena E. Nyarko has contributed this chapter

## **Objectives and Scope of Analysis**

In an effort to understand the fertility situation in Ghana, this chapter examines the levels, patterns, and trends in fertility as well as the rate of childbearing. It also attempts to examine fertility differentials, the magnitude of premarital childbearing and the incidence of childlessness in Ghana. Fertility preferences and contraceptive use among various socio-economic groups are also discussed. Finally, the study explores the contribution of the proximate determinants to fertility behaviour in Ghana.

## **Sources of Data**

Data for the analysis come from the post independence population censuses and sample surveys. These data sources include: the 1960 Post Enumeration Survey (PES), the 1971 Supplementary Enquiry (SE), the 1979/80 Ghana Fertility Survey (GFS), the 1988 Ghana Demographic and Health Survey, the 1992 Ghana Infant, Child and Maternal Mortality Study, the 1993 Ghana Demographic and Health Survey, the 1998 Ghana Demographic and Health Survey, and the 2000 Ghana Population and Housing Census. In addition to basic social and demographic data, the 1960 PES, the 1971 SE and the 2000 census gathered information on the number of children ever born to women aged 15 years and older (in 1960 and 1971) and women aged 12 years and older (in 2000). These censuses also elicited information on the number of children born to the women during the twelve months preceding the interview.

Even though the focus of the four rounds of the Ghana Living Standards Survey was on the general welfare of Ghanaians, they included questions on children ever born to women aged 15-49 years as well as their knowledge and use of contraception. Though this information can, to a limited extent, be used to examine fertility trends and differentials in Ghana, the GLSS data have not been utilized in this report because of this limitation.

The 1979/1980 Ghana Fertility Survey and the three rounds of the Ghana Demographic and Health Survey, on the other hand, are nationally representative sample surveys which collected, among others, information on birth histories, reproductive preferences, contraceptive knowledge and use, pregnancy and breastfeeding practices, postpartum sexual abstinence, and marriage from women in the 15-49 age group. These surveys also provide information on the women's background characteristics such as age, education, place and region of residence, ethnicity, religion, migration history, and employment status, occupation and sector of employment.

The data for the analysis come mainly from the birth history modules included in these surveys. These modules collected information on all the live births a woman has ever had. For each of the children mentioned, questions are asked on their birth dates, sex, type of birth, survival status, age (for those alive) and date at death or age at death for those who have died. In addition to these questions, the 1979/1980 GFS and the 1998 GDHS probed for information on pregnancies, which ended in abortions, miscarriages or stillbirths.

## **Quality and Limitations of Data**

Errors such as age misreporting, shifting of event dates and the incomplete reporting of events, affect the outcome of any demographic analysis. If these errors are large, they could bias the fertility indices estimated. They may also distort the prevailing age pattern of fertility. Earlier

evaluation of the age data reported by women in the reproductive age group in the censuses and the Ghana Demographic and Health Survey (GDHS) data sets indicates a high preference for ages ending in digits 0 and 5 and a systematic avoidance of certain digits. For example, the Whipple's index for detecting the degree of age misstatement arising from preference for ages ending in digits 0 and 5 was estimated to be 137.5 for the 1998 GDHS data and 151.4 for the 2000 census data, indicating that the reported age data for the female reproductive age group is affected by errors (for an accurate age distribution, the value should lie below 110).

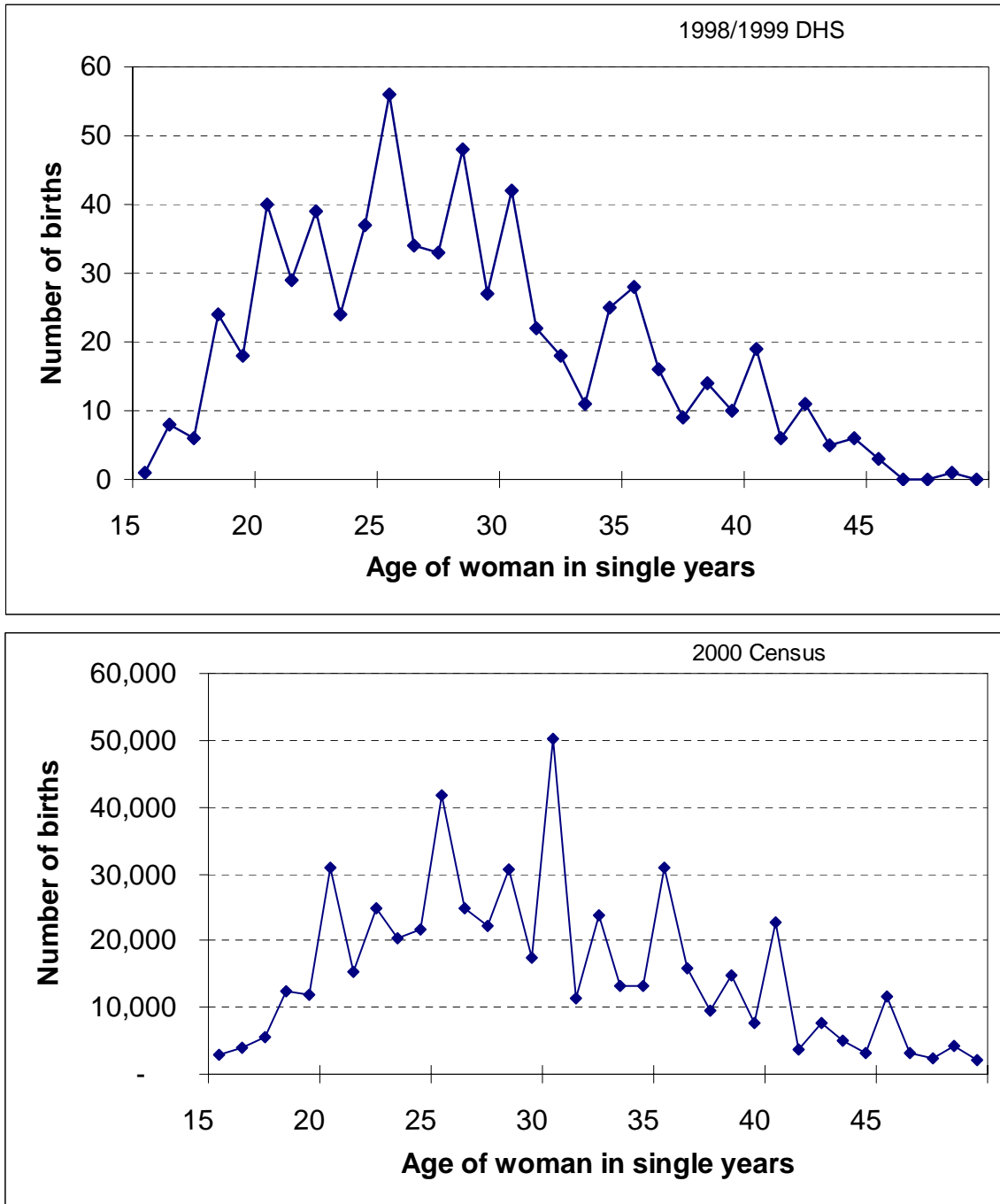
The application of the Myers' procedure also gave an index of 11.5 for 1998 and 16.0 for 2000, which suggest that some degree of age heaping may be present in both data sets (the value of the index ranges between zero (signifying no age heaping) and 90 (which would result if all ages were heaped on a single digit). There was also an obvious avoidance of digits 1, 3 and 4 in the 1998 data set while the results obtained for the 2000 census data showed clear avoidance of digits 1, 3, 4, 8 and 9. Previous evaluation of age data from earlier censuses and surveys conducted in Ghana also showed some degree of age preference (Gaisie, 1976; Adeku and Ameka, 1995). Nevertheless, the indices computed from the 1998 GDHS and 2000 census represent an improvement over those from these earlier data sets.

Assessment of the quality of reported vital events has also been extensively carried out for the pre-1998 census and survey data sets by various authors (Gaisie, 1969; Owusu, 1984; Shah et al, 1985). In his analysis of the 1960 PES, Gaisie (1969) demonstrated that births reported in the 1960 PES were under reported. In their investigations, however, Owusu (1984) and Shah (1985) found no evidence of omission of births in the 1979/1980 Ghana Fertility Survey data nor any systematic shifting of birth dates or heaping of events. Information for a comparable assessment of the fertility data for the 1971 Supplementary Enquiry was not available.

In the current exercise, data from the 1998 GDHS and the 2000 Census are used to establish the current levels of fertility in Ghana. In order to determine the reliability of the current fertility indices estimated from these data sets and to ensure that they are appropriately interpreted, the distribution of births in the last 12 months, mean parities, age-specific sex ratios and P/F ratios from these two data sources were examined. Figure 8.1 shows the distribution of births reported in the 1998 GDHS and the 2000 census by age of woman. The graph indicates the heaping of births on ages ending in digits 0 and 5, which is suggestive of possible shifting of events from adjacent age groups. This could either inflate or deflate the actual fertility performance of the study population, depending on the direction and degree of heaping.



**Figure 8.1 Births in the last 12 months by single years of Age, 1998 DHS**



The distribution of the average number of children ever born by age for 1998 and 2000 nevertheless show the expected increasing pattern with age, even though the mean parities for women aged less than 25 years may have been slightly underestimated in 1998 (Table 8.1). The

age-specific sex ratios calculated from data on retrospective fertility also suggest that in 1998, there was some under reporting of males among the 15-19, 20-24 and 30-34 age groups while for the older age groups (35-39, 40-44 and 45-49), there seems to have been some under reporting of females. Examination of the data from the 2000 Census, on the other hand, shows that the age-specific sex ratios lie in the expected range of 1.02 and 1.07.

The P/F ratio method is a procedure for comparing the reported mean parity or lifetime fertility,  $P_i$ , with the cumulative age-specific fertility,  $F_i$ . In the absence of errors in the data, the P/F ratio is expected to be one, indicating that the reported mean parity ( $P_i$ ) is equal to the cumulative age-specific fertility rate. The Trussell P/F ratios presented in Table 8.1 suggest that in 1998 there was under reporting of lifetime fertility for ages below 30 years and was more pronounced among females aged 15-19 years. Under reporting of current fertility (births in the last 12 months) is also observed in the age groups 30 years and older. The level of under reporting of current fertility is found to increase consistently with age. The 2000 census data, on the other hand, shows gross underreporting of current fertility within all age groups, with the youngest age group being mostly affected.

**Table 8.1: Mean Parities and Age-Specific Sex Ratios and P/F Ratios, 1998 GDHS & 2000 Census**

Age Group	Mean Parities		Age-specific Sex Ratios		P/F ratios	
	1998	2000	1998	2000	1998	2000
15-19	0.13	0.21	0.96	1.07	0.624	2.477
20-24	0.99	0.99	0.91	1.07	0.987	1.717
25-29	2.00	2.10	1.02	1.06	0.986	1.537
30-34	3.36	3.43	0.99	1.06	1.120	1.549
35-39	4.46	4.38	1.10	1.05	1.175	1.478
40-44	5.42	5.12	1.00	1.05	1.251	1.493
45-49	5.93	5.58	1.11	1.04	1.310	1.419
Total	2.63	2.21	1.04	1.05		

Overall, the evaluation of both the 2000 census and the 1998 Ghana Demographic and Health Survey data sets suggests that there is some degree of age heaping and event misreporting. However, those noted in the 2000 census are quite large and can bias the estimates of current fertility levels in the country, unless the data are adjusted to take care of the inherent errors.

Data on fertility from the censuses tend to underestimate the true level of fertility. This occurs because enumerators do not collect information from each individual household member but rather one person provides information on all members. This respondent may not be aware of the fertility status of each woman of childbearing age in the household. Another reason for possible underreporting is the time limitation for the enumerator, so there may not be adequate probing for correct responses. In addition, censuses do not include the full range of questions that would allow the gathering of very thorough fertility information.

### **Methods of Analysis**

Various mathematical techniques (rates, ratios, proportions, regression analysis) and indirect demographic procedures (P/F ratio method, the Relational Gompertz model and the Arriaga method) are used to give an indication of fertility levels in Ghana. Bivariate techniques are also used to explore differentials in fertility as well as the incidence and timing of premarital

childbearing and the level of childlessness in Ghana. Cohort parity progression ratios and birth interval analyses are also employed in the examination of the changes in the rate of childbearing in Ghana. Lastly, the fertility model developed by Davis and Blake (1956) and later modified by Bongaarts (1978), Bongaarts and Porter (1983), Bongaarts *et al* (1984) and Stover (1998) is used to evaluate the fertility inhibiting effects of the four most important proximate determinants of fertility (namely marriage, use and effectiveness of contraception, induced abortion, and postpartum infecundability caused by breastfeeding and abstinence).

## 8.2 Levels and Patterns of Fertility in Ghana

The high population growth rates observed in Ghana over the past three decades are attributed to the combination of high levels of fertility and declining but high mortality. In this section, the levels, patterns and trends in fertility since the 1960s are examined using two different approaches. One approach involves using current measures of fertility such as the age-specific fertility rate (ASFR), total fertility rate (TFR), general fertility rate (GFR) and crude birth rate (CBR), which are based on data covering a short period of time such as a year (in the case of the 2000 census) or five years (for all the surveys). The other approach entails using retrospective fertility indices such as mean children ever born, which measure women's reproductive performance over their lifetime.

### Current Fertility Measures

According to the 1998 Ghana Demographic and Health Survey, the total fertility rate for Ghana for the five-year period preceding the interview was 4.55 children per woman. The 2000 Population and Housing Census, on the other hand, gives a figure of 3.99 children per woman. Evaluation of these data, however, shows that the figures are slightly lower than expected. Table 8.2 presents the reported and adjusted fertility rates for 1998, using different adjustment procedures (Appendix I, II, and III provide an explanation of the methods, their underlying assumptions and their limitations).

**Table 8.2: Reported and Adjusted Total fertility Rates for 1979-2000**

Year	Reported	Adjusted		
		P-F Ratio	Relational Gompertz	Arriaga
1979/1980	6.47	6.38	6.58	6.59
1988	6.43	6.37	6.46	6.57
1993	5.50	5.46	5.52	5.47
1998	4.55	4.78	4.84	4.73
2000	3.99	-	4.77	4.64

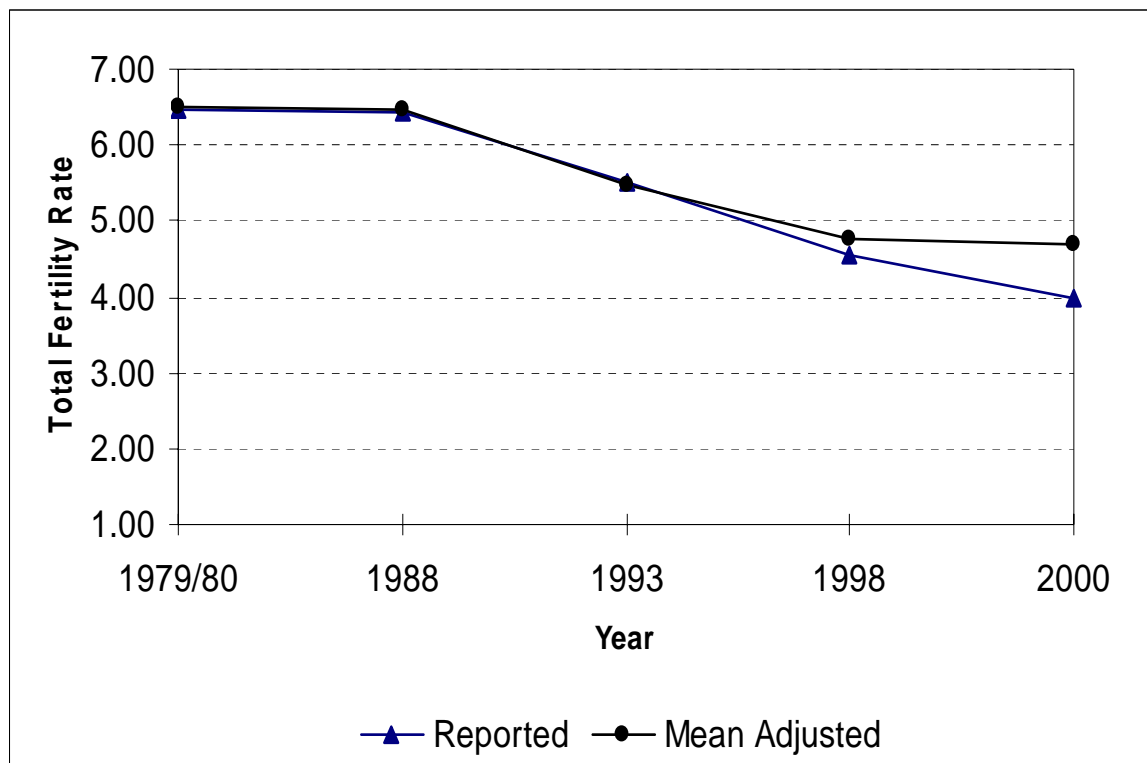
The results suggest that the fertility levels reported for 1979/1980, 1988, and 1993 were very close to the adjusted figures, and can therefore be accepted as the true fertility levels prevailing during those time periods. On the other hand, the reported figures for the 1998 and 2000 Census appear to have been under-reported. This is especially true with regards to the 2000 census figure. Owing to the high level of under-reporting of current fertility in the 2000 census data, the

P/F ratio method, which makes use of both current and retrospective cumulative fertility in the estimation procedure, could not be applied as an adjustment factor.

Similarly, in applying the Relational Gompertz and Arriaga techniques, the 1998 age pattern of fertility was applied to the data on children ever born because of the large errors observed in the 2000 current fertility data. The results from these indirect demographic techniques suggest that the TFR for 1998 should lie between 4.73 and 4.84 children per woman while that for the year 2000 should be between 4.64 and 4.77 children per woman. The average of the adjusted figures gives a TFR of 4.78 children per woman for 1998 and 4.71 children per woman for 2000. This means that the difference between the reported TFR and the adjusted TFR for the year 2000 is 0.72 children per woman while that for 1998 is about 0.2 children per woman, suggesting an underestimate of five per cent in the reported TFR for 1998 and 18 per cent for 2000.

Even though the indirect techniques employed have their individual weaknesses, the consistency observed in the estimated figures based on the different estimation models provide a sense of the possible underestimation in the levels of fertility prevailing in the country during those periods. Indeed, as indicated in Figure 8.2, the trend observed in the adjusted average TFRs for the period 1988 and 2000 is quite consistent with the pace of fertility decline observed in countries where fertility transition has already begun.

**Figure 8.2: Reported and Mean Adjusted Total Fertility Rates for Ghana, 1979/80-2000**



Bongaarts (2002) notes that at the initial stages of the transition the decline is fairly rapid, but begins to decelerate after some time. In the case of Ghana, the mean adjusted TFRs of 4.78 and 4.71 children per woman for 1998 and 2000 respectively suggest that Ghana's TFR dropped by

just about 0.04 children per woman per year between 1998 and 2000 compared to the decline of 0.19 children per woman per year for the period 1988-1998. In a study of fertility patterns in 38 less developed countries starting their transition in the 1960s, Bongaarts (2002) estimated that the annual decline in TFR averaged 0.15 in the early 1970s and only 0.06 in the 1990s. The relatively slow pace of decline in Ghana's TFR in the most recent period (1998-2000) is thus consistent with Bongaarts' observation that the lower the TFR at the onset of transition, the slower the pace of fertility decline. Taking into account the adjusted levels of TFR for 1998 and 2000, the country is expected to achieve replacement fertility by the year 2040.

Table 8.3 presents the total fertility rates (TFR), crude birth rates (CBR) and general fertility rates (GFR) for the period 1960-2000. Examination of the total fertility rates over time suggests that Ghana has experienced dramatic declines in fertility since the late 1980s. Prior to this period, the TFR ranged between six and seven children per woman.

**Table 8.3: Total Fertility Rates, Crude Birth Rates & General Fertility Rates**

Period	Source	TFR	CBR	GFR
1960	PES	6.50	49.5	171
1971	SE	6.91	49.0	-
1979/1980	GFS	6.47	43.1	197
1988	GDHS	6.43	39.5	200
1993	GDHS	5.50	37.3	175
1998	GDHS	4.55	32.8	142
2000	Census	3.99	31.1	130

Note: PES-Post Enumeration Survey; SE-Supplementary Enquiry; GFS -Ghana Fertility Survey  
GDHS-Ghana Demographic and Health Survey

Sources: Central Bureau of Statistics, 1971; Gaisie, S.K. and K.T. de Graft Johnson, 1976  
Central Bureau of Statistics, 1983; Ghana Statistical Service and Macro International Inc, 1994  
Ghana Statistical Service and Macro International Inc, 1999

As shown in Table 8.3, the TFR showed slight fluctuations between 1960 and 1980, recording levels of 6.5 for 1960, 6.9 for 1971 and 6.5 for 1979/1980. There is evidence to suggest that the level for 1960 might have been underestimated due to possible omission and misplacement of births (Gaisie, 1969; Ewbank, 1981). Consequently, the conclusion that fertility levels remained stable at around 7 children per woman from the 1960s to the late 1970s may be valid.

There has, however, been a sustained decline in fertility since the late 1970s, with dramatic declines being observed between 1988 and 2000. The decline in TFR between 1988 and 1993 alone was 14 per cent, which is far higher than the 10 per cent change in fertility suggested by various commentators to signify the onset of a demographic transition. It is, therefore, important to recognize that Ghana is currently undergoing significant demographic change. In providing information about the current situation, the adjusted TFR of 4.71 for 2000 was taken into consideration. Based on this adjusted figure, one can conclude that in just two decades, Ghana's TFR has declined by about 27 per cent from 6.47 children per woman in 1979/1980 to 4.71 children per woman in 2000. The 38 per cent decline between 1979/1980 and 2000 estimated from the reported figures of 6.47 and 3.99 children per woman may, therefore, be an exaggeration of actual events. Similarly, the estimated decline for the period 1988 and 2000 using the adjusted 2000 figure is 27 per cent compared to the 38 per cent decline for the unadjusted figure.

Examination of the other fertility indices suggest that the 2000 census gave a general fertility rate of 130 births per 1000 women aged 15-49 years and a crude birth rate of 31 births per 1000 population compared to 200 births per woman and 40 births per 1000 population computed from the 1988 data set. Table 8.4 presents the age-specific fertility rates for the period 1979/1980 to 2000. The data indicate that until the year 2000, childbearing peaked at age 25-29 years. The 2000 census data, however, indicates a change in the age-pattern of fertility in Ghana, with the peak of childbearing now occurring within a broader age group (i.e. 25-34 years).

Generally, the age-specific fertility rates show gradual declines as one moves from one period to the next. The slight rise in fertility for women aged 40 years and over in 2000 compared to 1998 may, however, be an artifact. As shown earlier, the evaluation of the 1998 data indicates some level of under-reporting of female children, which may be accentuating the fertility levels reported by older women in the 2000 census. On the other hand, the comparatively low age-specific rate reported for the age group 15-19 in 2000 may be attributed to the fact that most teenagers are likely to be found at home at the time of the census due to the school holidays compared to the survey periods, which can consequently affect the denominator used to compute the rate. Evidently, most of these in-school teenagers may be nulliparous.

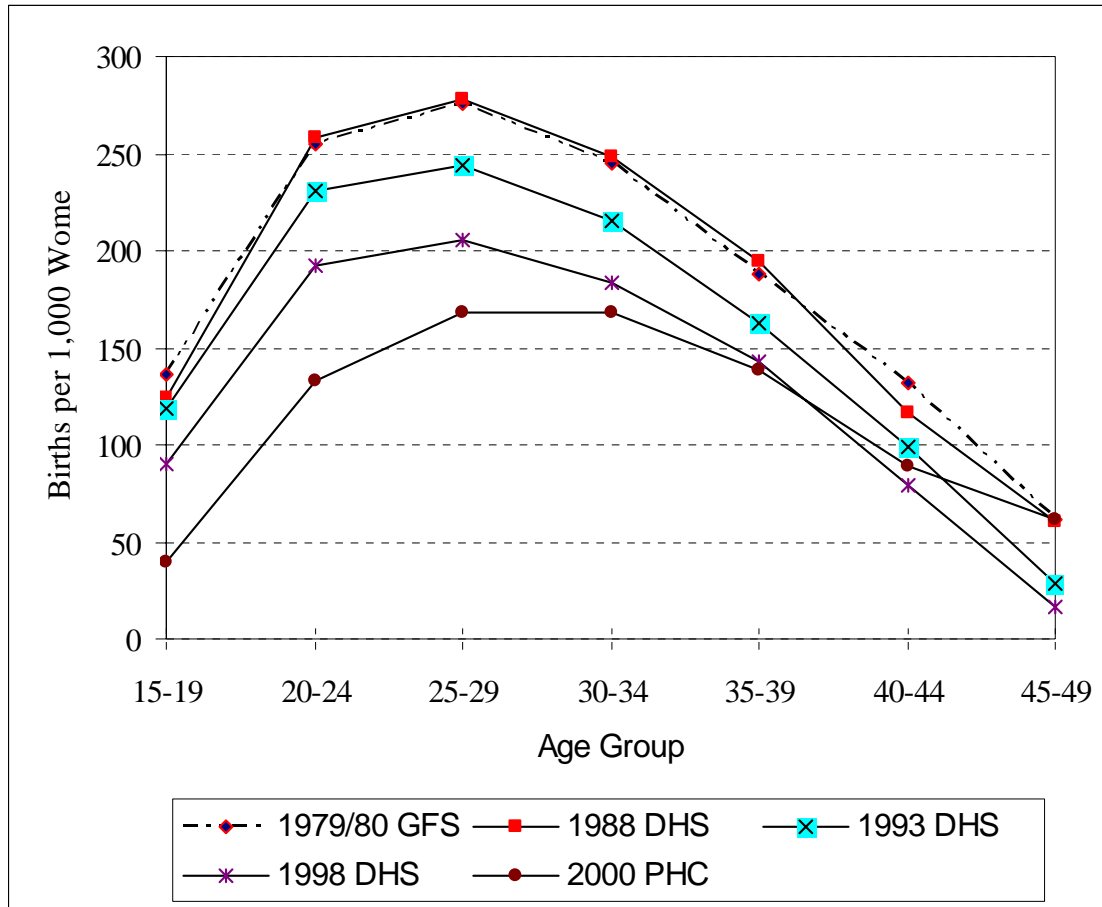
**Table 8.4: Age Specific Fertility Rates for Ghana, 1979/80-2000**

Age Specific Fertility Rates					
Age group	1979/80 GFS	1988 DHS	1993 DHS	1998 DHS	2000 Census
15-19	0.136	0.124	0.119	0.090	0.040
20-24	0.255	0.258	0.231	0.192	0.133
25-29	0.276	0.278	0.244	0.206	0.168
30-34	0.245	0.248	0.215	0.183	0.168
35-39	0.188	0.195	0.163	0.143	0.139
40-44	0.132	0.117	0.099	0.079	0.089
45-49	0.061	0.060	0.029	0.016	0.061
TFR	6.47	6.43	5.50	4.55	3.99

Sources: Central Bureau of Statistics (1983), Ghana Statistical Service (1989), Ghana Statistical Service and Macro International Inc. (1994); Ghana Statistical Service and Macro International Inc (1999); 2000 Census

A graphical presentation of the age-specific fertility rates over time provides a fair idea of the pattern of decline. Figure 8.3 shows a consistent downward shift of the fertility curve, particularly for ages below 25 years between 1979/1980 and 2000, indicating a reduction in the rate of childbearing for these reproductive age groups. Despite this decline, the country's fertility is still very high and accounts mostly for the current intercensal population growth rate of 2.7 per cent per annum.

**Figure 8.3: Age-specific fertility rates for Ghana, 1979/80-2000**



**Lifetime Fertility**

Average parity or mean number of children ever born per woman measures the lifetime or cumulative fertility performance of female respondents in the reproductive age group 15-49. As indicated in Table 8.5, the average completed family size for women aged 45-49 years is generally much higher than the TFR reported for any particular survey or census period. For example, the average completed family size for 1998 was 5.93 children per woman whilst the TFR was estimated to be 4.55. For the year 2000, on the other hand, the average parity was 5.58 children per woman compared to a TFR of 3.99. These discrepancies are to be expected, because within the context of declining fertility, the age-specific fertility rates of younger women progressively fall, resulting in lower period fertility rates relative to retrospective fertility.

**Table 8.5: Mean Number of Children Ever Born per Woman by Age Group**

Age group	Mean number of children ever born							
	1960 PES	1971 SE	1979/80 GFS	1988 DHS	1992 ICMMS	1993 DHS	1998 DHS	2000 Census
15-19	0.46	0.26	0.24	0.22	0.32	0.21	0.13	0.21
20-24	1.72	1.54	1.37	1.25	1.44	1.15	0.99	0.99
25-29	3.06	3.06	2.69	2.65	2.72	2.31	2.00	2.10
30-34	4.24	4.61	4.04	4.18	3.99	3.84	3.36	3.43
35-39	5.08	5.61	5.36	5.47	5.09	4.58	4.46	4.38
40-44	5.70	6.28	6.12	6.58	6.11	5.82	5.42	5.12
45-49	5.85	6.42	6.71	7.25	6.72	6.64	5.93	5.58
Total	3.18	3.61	2.97	3.17	3.20	2.91	2.63	2.21

Sources: Gaisie, S.K. (1976), p.85, Table 3.18; Gaisie, S.K. (1969), p.17, Table 6;  
 Central Bureau of Statistics (1983), Ghana Statistical Service (1989), Ghana Statistical Service (1994),  
 Ghana Statistical Service and Macro International Inc. (1994),  
 Ghana Statistical Service and Macro International Inc (1999),

The distribution by age shows that the average parity increases consistently with age, with the fertility performance of the youngest age group (15-19 years) being almost negligible. An examination of completed fertility over time indicates that it was quite stable at a level of seven children per woman between 1979/1980 and 1993 but declined steadily thereafter to 5.6 in 2000. Based on the pattern shown in the last 20 years, it is apparent that the figures from the 1960 PES and 1971 Supplementary Enquiry were under estimated. The increasing trend observed between 1960 and 1988 indicates a gradual improvement in the quality of data collected.

### 8.3 Fertility Differentials among Socio-economic Groups

Several factors account for the variation in fertility among different populations. These may be geographic, socio-economic, demographic and cultural factors. Identifying these factors leads to a better understanding of the fertility behaviour of women in Ghana. In this analysis, an attempt is made to examine the relationship between the geographic place of residence, education, marital status, type of marriage, ethnicity, religion, employment status, occupation, sector of employment and level of fertility.

#### Place of Residence

Table 8.6 shows the reported TFRs for the period 1960-2000 by rural-urban place of residence. The Table indicates that large rural-urban differentials in fertility levels exist in Ghana. Women who reside in rural areas have a comparatively higher fertility rate than those in urban areas. In the year 2000, a TFR of 4.92 children per woman is reported for rural localities, while the estimate for urban localities is 3.00 children per woman. This indicates that the fertility of rural women is about 64 per cent or two children per woman higher compared to urban women.



**Table 8.6 Total Fertility Rates by Place of Residence**

Period	Source	Total Fertility Rate		
		Urban	Rural	Total
1960	PES	5.60	6.70	6.50
1971	SE	6.20	7.10	6.91
1979/80	GFS	5.78	6.85	6.49
1988	GDHS	5.05	6.64	6.43
1993	GDHS	3.99	6.36	5.50
1998	GDHS	2.96	5.41	4.55
2000	Census	3.00	4.92	3.99

The figures for previous years suggest that the urban-rural gap has been widening over time. In 1971 for example, rural TFR was 7.10 children per woman compared to 6.20 children per woman for urban women, suggesting a difference of approximately 13 per cent but by 2000, the fertility gap between urban and rural women had increased to 64 per cent.

The effect of urbanization on fertility may originate from the timing of the onset of marriage and childbearing, the incidence of marital dissolution and, to some extent, pregnancy wastage. For example, the 1998 GDHS indicate the median age at first birth is lower for all age groups of women aged 25-49 years in rural areas compared to those in urban areas. For urban women, it ranges from 20.4 years for the 45-49 year olds to 22.8 years for the age group 25-29 years, with an overall median of 21.0 years, while for rural areas the figures range from 19.6 for those aged 45-49 years to 20.4 for the 25-29 year olds, with an overall median of 20.0 (GSS and MI, 1999).

Similarly, the median age at first marriage for women aged 25-49 years is much higher in urban areas (19.7 years) than in rural areas (18.8 years), and increases from 19.3 years for urban women aged 45-49 years to 21.2 years for those aged 25-29 years, and from 18.5 years for the 45-49 year olds in rural areas to 19.0 years for women aged 25-29 years (GSS and MI, 1999). The very early age at first marriage in rural areas has the potential of exposing the women to higher risks of pregnancy compared to urban women who marry relatively late.

The level of pregnancy wastage also appears to be relatively higher in urban areas than in rural areas and this could dampen levels of fertility in these areas. The 1998 GDHS survey showed that early foetal loss accounted for 13.2 per cent of all pregnancies in urban areas 0-9 years preceding the survey compared to 8.5 per cent in rural areas. These figures probably reflect the levels of miscarriages. Since abortion is illegal in this country, it is likely that most women, especially those living in urban areas, will not report on them. This implies that the levels of pregnancy wastage, particularly for urban areas where facilities exist for safe abortion, may be higher than the reported figures. Since these pregnancies are not carried to term, actual fertility levels in urban areas will be much lower than what would be expected, all things being equal; this may partly account for the significantly lower levels of fertility reported in urban areas. Comparing the reported rural and urban TFRs for 2000 with those for 1988 (which were given as 6.64 and 5.05 respectively) suggest that over the 12-year period, there has been a 26 per cent decline in rural fertility and a 41 per cent fall in urban fertility. Table 8.6, however, shows that between 1998 and 2000, urban fertility remained more or less stable at around 3 children per woman.

The other point may be the differential reporting of fertility by urban and rural residents. Women, especially those in the younger age groups who are not in any socially sanctioned marriage, are more likely to conceal their childbearing status because of the negative social implications. This is especially so among young urban residents who may either be in school or may be waiting for a prospective spouse and so may not be willing to destroy their “good public image”.

The age-specific fertility rates displayed in Table 8.7 for rural and urban women show that prior to the year 2000, births to rural women were concentrated in the age group 20-29 years, while births in urban areas mostly occurred to women aged 25-29 years. The patterns exhibited in 2000 are slightly different.

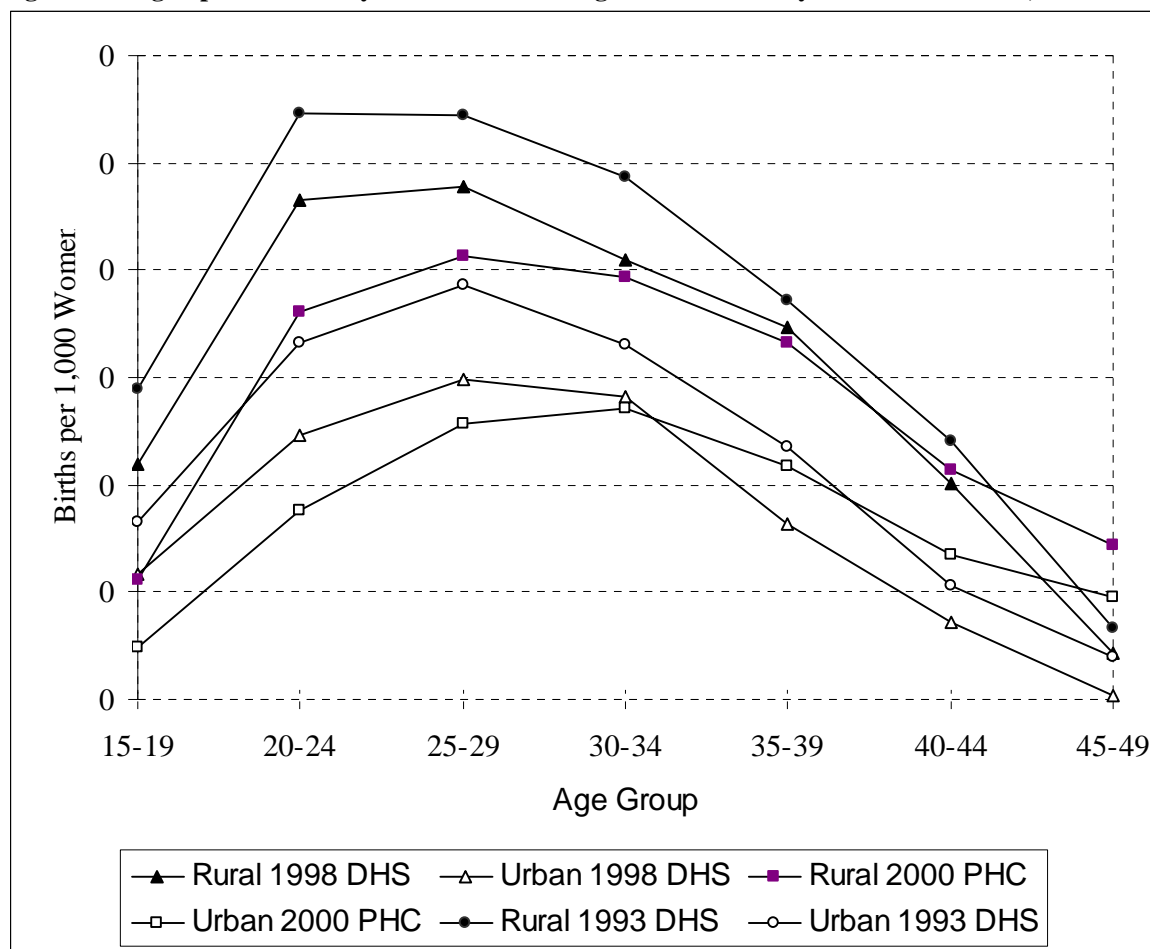
**Table 8.7: Age-Specific Fertility Rates by Place of Residence, 1993-2000**

Age Group	Age Specific Fertility Rate					
	1993		1998		2000	
	Rural	Urban	Rural	Urban	Rural	Urban
15-19	0.145	0.083	0.110	0.058	0.056	0.024
20-24	0.273	0.166	0.233	0.123	0.180	0.088
25-29	0.272	0.193	0.239	0.149	0.207	0.128
30-34	0.243	0.165	0.205	0.141	0.197	0.136
35-39	0.186	0.118	0.173	0.082	0.166	0.108
40-44	0.120	0.053	0.101	0.036	0.107	0.067
45-49	0.033	0.020	0.022	0.002	0.072	0.048
TFR	6.36	3.99	5.415	2.955	4.925	2.998
GFR	218.0	138.0	183.0	103.0	155.5	100.1
CBR	40.2	32.9	36.0	25.4	33.8	26.7

Sources: Ghana Statistical Service and Macro International Inc. (1994)  
Ghana Statistical Service and Macro International Inc (1999),  
2000 Ghana Population and Housing Census

The peak of rural fertility seems to centre on the age group 25-29 while the peak of urban fertility has shifted to the 30-34 age group. This changing pattern is clearly displayed in Figure 8.3.

**Figure 8.4: Age-Specific Fertility Rates of Women Aged 15-49 Years by Place of Residence, 1993-2000**



**Region of Residence**

Table 8.8 presents the regional estimates of total fertility rates for the period 1979/1980-2000. For the year 2000, the lowest TFR of 2.5 children per woman is observed for Greater Accra. This region has two of the three largest cities in Ghana (i.e. Accra and Tema), and is the most developed region in Ghana in terms of social and economic facilities. Further examination of the data suggests that there is a clear and significant fertility differential between the Greater Accra and the other nine regions in Ghana. Volta follows Greater Accra, with a total fertility rate of 3.5 children per woman. Except in 1988 and until 2000, Northern has reported the highest level of fertility, with Upper West (except 1979/1980) closely following. The reported 2000 rates put Upper West slightly ahead of Northern though insignificant.

**Table 8.8: Reported Total Fertility Rate by Region (1979/80-2000)**

Region	(1979/80)	(1988)	(1993)	(1998)	(2000)	% Decline (1979-2000)
Western	7.08	6.10	5.54	4.70	4.42	37.6
Central	7.27	6.58	5.57	4.78	4.01	44.8
Greater Accra	5.10	4.64	3.56	2.66	2.53	50.4
Volta	6.58	5.72	5.41	4.44	3.51	46.7
Eastern	6.62	6.66	5.10	4.41	3.72	43.8
Ashanti	6.24	5.90	5.60	4.76	4.84	22.4
Brong Ahafo	6.74	6.86	5.46	5.40	4.24	37.1
Northern	7.78	6.80	7.39	6.98	4.87	37.4
Upper East	5.81	6.80	6.02	4.98	4.19	27.9
Upper West	5.81	6.80	6.44	6.14	4.90	15.7
Total	6.47	6.43	5.50	4.55	3.99	38.3

Sources: Central Bureau of Statistics (1983); Ghana Statistical Service (1989),  
Ghana Statistical Service and Macro International Inc. (1994)  
Ghana Statistical Service and Macro International Inc (1999)  
2000 Ghana Population and Housing Census

A trend analysis of the data by region shows that the declines in total fertility rates did not only occur at the national level. The reported figures for the period 1979-2000 reveal dramatic declines in fertility in all ten regions of Ghana. The highest reduction of 50 per cent is reported for Greater Accra while the lowest decline of 16 per cent is Upper West, where development indices lag behind those observed in other regions.

It may not be completely accurate to attribute the pattern observed in the reported TFRs for Northern and Upper East solely to declining fertility. The relatively large reductions noted in the fertility levels for these regions since 1993 may partly be explained by the constant flow of migrants, particularly female youth, from these regions to southern Ghana in search of jobs. Some of these young female migrants have also been known to enroll in educational institutions in the south of the country to pursue their various educational goals. Those who enter the job market mostly move to the cities, particularly Kumasi and its environs or to Accra to find jobs. A number of them can be seen in the markets in the capital city carrying loads and are commonly referred to as 'kaya yei'. Evidently, the constant out-migration of young fertile females may cause distortions in the age structure for the female reproductive age group and consequently lower total fertility rates for the women in these regions.

### **Education**

As indicated in Table 8.9, total fertility rates appear to be inversely related to a woman's level of education. According to the 2000 census, the fertility of women with primary education is six per cent lower than for those with no formal education. Relative to those who had received no formal education, women with Middle/JSS education had a 24 per cent lower fertility. Those with secondary or higher levels of education exhibited a fertility level that was 35 per cent lower. This demonstrates the effect of education beyond the primary level on women's reproductive behaviour, because of the exposure and broadening on one's perspectives on the benefits of smaller family size and contraceptive use vis-a-vis opportunities for economic and income generating ventures.

**Table 8.9: Total Fertility Rates by Level of Education (1988-2000)**

Level of Education	1988 GDHS	1993 GDHS	1998 GDHS	2000 Census
No education	6.77	6.67	5.83	4.64
Primary	6.09	6.10	4.94	4.37
Middle/JSS	5.87	4.71	3.78	3.54
SSS/Tech/Voc or Higher	3.55	2.90	2.80	3.02
Total	6.43	5.50	4.55	3.99

Sources: Ghana Statistical Service (1989), Ghana Statistical Service and Macro International Inc.(1994)  
Ghana Statistical Service and Macro International Inc (1999)  
2000 Ghana Population and Housing Census

The differentials in the timing of marriage, the onset of childbearing and contraceptive use may account for the marked educational differences in fertility. For example, whereas the median age at first birth based on the 1998 DHS was 19.7 years for women with no formal education, it is 24.9 years for those with secondary or higher levels of education (Table 8.10).

**Table 8.10: Median Age at First Birth, Mean Age at First Marriage and Current use of Contraception by Level of Education, 1998 GDHS**

Level of Education	Median age at first birth (based on women aged 25-49 years)	Mean age at first marriage (based on women aged 25-49 years)	Current use of modern contraception (based on currently married women aged 15-49 years)
No education	19.7	18.5	8.9
Primary	20.0	18.8	12.9
Middle/JSS	20.3	19.2	16.1
Secondary or Higher	24.9	23.2	20.3
Total	20.3	19.1	13.3

Source: Ghana Statistical Service and Macro International Inc (1999)

Mean age at first marriage is also 18.5 years for women with no education while it is 23.2 years for those with secondary or higher education. Similarly, modern contraceptive use rises consistently with the level of education and in the 1998 GDHS, it was estimated at 8.9 per cent for women with no education compared to 20.3 per cent for those with secondary or higher education.

### **Marital Status**

Table 8.11 shows that currently married women and those in a non-formalized union experience significantly higher fertility than all other women aged 15-49 years. This is true for all the periods under discussion. For example, data from the 2000 Census indicate that while the never married exhibits the lowest fertility of about one child per woman, the TFR of women who are currently married and those in consensual union is about 5.3 children per woman. Similarly, the TFR for formerly married women (i.e. those who are separated, divorced or widowed) is close to 3.5 children per woman. This is generally because the never married are young and probably in school, but it also shows that marriage provides greater legitimacy and room for procreation than outside it.

**Table 8.11: Total Fertility Rate by Marital Status (1988-2000)**

Marital Status	1988 GDHS	1993 GDHS	1998 GDHS	2000 Census
Never married	0.65	0.41	0.53	1.18
Married/ Informal Union	7.38	6.70	6.03	5.29

Formerly married	4.93	4.47	3.65	3.45
Total	6.43	5.50	4.55	3.99

Sources: Computed from the 1988, 1993 and 1998 DHS and the 2000 Census data.

Examination of the data over time shows that the TFR of those married or in informal union dropped consistently from 7.4 to 5.3 between 1988 and 2000 while that for the formerly married fell from 4.9 to 3.5 children per woman between 1988 and 2000. The TFRs for the never married fluctuated over the entire period. The estimates for the period between 1988 and 1998 may be attributed to the small sample sizes usually found in that category. As earlier mentioned, in the case of the 2000 census, more young girls may have been enumerated than in the Demographic and Health Surveys, as those in school would be home during the census.

#### 8.4 Pace of Childbearing

Changes in the timing of childbearing have important implications for fertility trends. Delaying the age at childbearing, for example, could significantly reduce fertility and in the process speed up the transition from high to low fertility. Similarly, lowering the age at childbearing would lead to a rise in the total fertility rate, causing reversals or stagnation in ongoing fertility declines. The observed TFR at any given point in time is made up of two distinct parts: a “quantum” component which is equivalent to the TFR that would have been observed in the absence of changes in the timing of births, and a spacing/timing or “tempo” component which is attributable to advancing or delaying of births (Bongaarts, 1999). Thus, whereas the quantum component measures the natural reproductive behaviour of a population, the tempo component is considered to be a distortion of the observed TFR. This section attempts to examine the role of “tempo” changes in Ghana’s fertility decline. Indicators that have been used to measure the timing of childbearing include the mean age at child bearing (MAC), parity progression ratios and waiting time to the next live birth (i.e. birth intervals).

#### Mean Age at Child Bearing

As Table 8.12 indicates, the mean age at childbearing appears to have been quite stable at around 30 years between 1988 and 1998 but increased by about two years in 2000. This sudden increase in the mean age at childbearing in the year 2000 could reflect possible distortions in age reporting.

Table 8.12: Trends in Total Fertility Rates and Mean Age at Childbearing (1988-2000)

Year	TFR	MAC <sup>1</sup>
1988	6.43	30.3
1993	5.50	29.6
1998	4.55	29.6
2000	3.99	31.7

<sup>1</sup>Based on births in the last 12 months

Trends in the age pattern of fertility between 1988 and 1998 indicate that even though significant reductions in fertility were observed among the older age groups (20-44) prior to 2000, it did not change the magnitude of the mean age at childbearing. An examination of the mean age at

childbearing by birth order, however, shows that the age at first birth increased from 19.4 years in 1988 to 20.1 years in 1998 (Table 8.13). A similar observation is made for all other births, suggesting that there have been some increases in the age at which women progress to the next birth.

**Table 8.13 Mean Age of Mother at Childbearing by Birth order (all birth)**

Birth Order	Mean age of mother at birth of the child		
	1988	1993	1998
1	19.4	20.0	20.1
2	22.3	23.0	23.1
3	24.7	25.8	25.7
4	27.1	28.1	28.2
5	29.5	30.3	30.7
6	31.8	32.6	32.5
7	33.6	34.6	34.4
8	35.6	36.2	35.9
9	36.9	37.7	37.4
10	38.2	38.8	38.6
11	39.9	40.5	39.4
12	40.5	40.5	41.7
13	42.8	42.8	42.8
14	44.4	45.7	41.0
Total	25.4	25.6	25.6

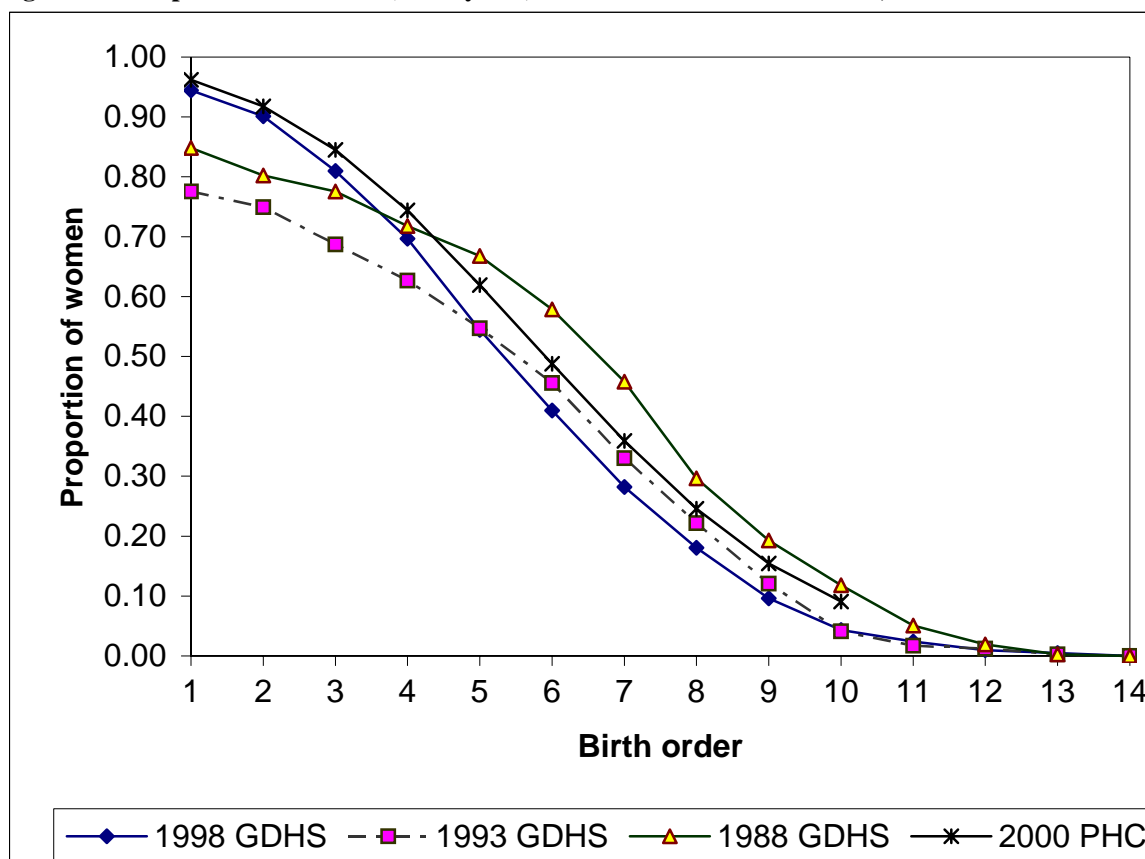
### **Parity Progression Ratios**

Figure 8.4 shows the parity progression ratios (calculated as the proportion of a cohort of women who have had a birth of order *i*.) for women aged 45-49 years. From the graph, there appears to be substantial limiting of higher order births over time for women who have reached the end of their reproductive cycle. The results of the analysis suggest that between 1988 and 1998, there were substantial declines in the proportions of women aged 45-49 who moved on to have higher order births, as indicated by the considerable lowering of the 1993, 1998 and 2000 curves in relation to the 1988 curve at birth orders five and above. Thus, the proportion of women aged 45-49 who moved from the fifth to the sixth birth order declined from 0.67 in 1988 to 0.55 in 1993, 0.54 in 1998 and 0.49 in 2000. Considering the declining fertility trend in Ghana since the late 1980s, the reduction in parity progression ratios, especially at higher birth orders, therefore appear to be an important determinant of the observed fertility decline in Ghana.





Figure 8.5: Proportion of Women (45-49 years) with a Birth of a Given Order,1988-2000



The proportions of women moving between the first and fourth order births were much higher for 1998 and 2000 compared to 1988 while those for 1993 were much lower than those for 1988. These irregularities are difficult to explain but it could be that formerly women who were not married considered it socially unacceptable to have children outside marriage.

### **Birth Intervals**

The waiting time to the next live birth is closely associated with prevailing levels of fertility. A woman who chooses longer birth spacing is likely to have fewer children than one whose inter-birth intervals are short. Table 8.14 presents the median preceding and succeeding birth intervals by background characteristics. The analysis of succeeding birth intervals is limited to births with closed intervals while that of preceding birth intervals are based on second or higher order births.

### **Preceding Birth Intervals**

As shown in Table 8.14, the median preceding birth interval for all single births, which occurred five years prior to the 1998 Ghana Demographic and Health Survey is 38 months. There are variations, however, by selected demographic and socio-economic characteristics, such as age at the birth of the child, place of residence, level of education, occupation and employment status. The median preceding birth interval increases consistently with age of mother at the birth of the child from 28 months for the 15-19 year olds to 41 months for those aged 35 years and older. This means that birth intervals get longer as mothers grow older. This could be the result of a

natural decline in fecundity, a decline in sexual activity or increased use of contraception among these women. With respect to place of residence, preceding birth intervals are about six months longer in urban areas than in rural areas, possibly because of the educational advantage urban residents have and the fact that they are more likely to use contraception and to engage in occupations that make childbearing a disincentive.

In some Asian and Northern African countries (such as Bangladesh, Republic of Korea and Egypt) where son preference exists, the timing of the next birth is significantly affected by the sex of the index child. Where the index child is a female, the subsequent birth is hastened, especially if the couple has no male child or has less than the desired number of male children (Oyeka, 1989; Ram, 1992; Choe et al, 1998). The absence of sex differences in birth intervals is consistent with earlier observation made by researchers, which suggests that, in social and economic terms, both male and female children are highly valued by the Ghanaian society (Goody et al, 1981; Alderman, 1990, Agble et al, 1995; Adongo et al, 1998) and are thus unlikely to produce differential responses in terms of how quickly the next birth should occur.

A distribution of the median preceding birth intervals by level of education shows that the changes observed with rising levels of education are not as large as that observed for women with secondary or higher education. A woman who has attained secondary education has a preceding birth interval which is longer by five months compared to a woman with no education. The comparative figure for those who have Middle/JSS education is only one month. One therefore expects significantly lower levels of fertility for women with secondary or higher levels of education relative to those with lower levels of education.

Substantial variations are also observed for mothers in different occupational groups. Women who are engaged in professional, technical, managerial and clerical occupations have the longest preceding intervals of 51 months compared to 36 months for agricultural workers. Paid employees and the self-employed also tend to have longer birth intervals than those who are engaged in unpaid work.

### **Succeeding Birth Intervals**

Variations in succeeding birth intervals are not as pronounced as those for preceding birth intervals (Table 8.14). For example, the difference in median succeeding birth intervals for women with no education and those educated up to the secondary or higher level is two months as against the five months for preceding birth intervals. The observed relationship between succeeding birth intervals and a number of the demographic and socio-economic variables is also not in the expected direction. For example, the median succeeding birth intervals decline by mother's age at birth. The inference here is that the patterns observed with respect to succeeding birth intervals do not provide any strong basis for drawing meaningful conclusions regarding fertility levels in Ghana.

**Table 8.14: Median Preceding and Succeeding Birth Intervals (in months) by Selected Background Characteristics (last 5 years), 1998 GDHS**

Background Characteristic	Preceding Birth Interval (N=2314)	Succeeding Birth Interval (N=791)
<b>Mother's age at birth</b>		
15-19	28.0	31.0
20-24	34.0	30.0
25-29	38.0	29.2
30-34	40.0	29.0
35+	41.0	29.0
<b>Sex of child</b>		
Male	38.0	29.5
Female	37.0	30.0
<b>Birth order of child</b>		
1	-	28.5
2	38.0	29.4
3	37.0	30.0
4	39.0	30.0
5+	37.0	-
<b>Usual place of residence</b>		
Rural	37.0	29.0
Urban	42.9	30.0
<b>Mother's education</b>		
None	37.0	30.0
Primary	37.0	30.0
Middle/JSS	38.0	29.0
Secondary+	42.0	32.3
<b>Marital status</b>		
Never married <sup>1</sup>	-	-
Currently married	38.0	30.0
Formerly married	37.0	26.0
<b>Mother's occupation</b>		
Unemployed	35.0	28.0
Professional/Tech/Managerial/Clerical	51.0	26.0
Sales	40.0	29.0
Agric-self employed	36.0	30.0
Skilled manual	39.0	31.1
<b>Mother's employment status</b>		
Unemployed	35.0	28.0
Paid Employee	38.6	28.0
Self-employed	38.0	31.0
Unpaid worker	35.0	31.1
Total	38.0	30.0

<sup>1</sup> Number of births to women in this category is fewer than 25.

## 8.5 Premarital Childbearing

Premarital childbearing (defined as childbearing prior to marriage) is a useful indicator of unplanned births, even though it may not be a true reflection of unplanned pregnancies, most of which may end up being terminated. The indicator also gives an idea of the reproductive behaviour of young people and the possible health consequences they face.

Data from the 1998 Demographic and Health Survey suggest that premarital births made up only 3.5 per cent of the 6292 children born ten years prior to the survey. About 51 per cent of these premarital births occurred to women in their teens and by the age of 25 years 86 per cent of these births had occurred (Table 8.15). What is noticeable about the distribution is that the number of premarital births to women below the age of 15 years is just about three per cent. A distribution by level of education indicates that over half (51%) of these premarital births occurred to women who had had no formal education or had been educated up to the primary level.

Other socio-economic differentials from the GDHS (1998) demonstrate that they are also mostly rural (67%), self-employed (60%), in sales and agriculture (65%), and belong to “Other Christian” denomination (49%). The low proportion of urban women who indulge in premarital childbearing (33%) may partly be explained by the fact that these women, especially the educated ones, may have better facilities for terminating premarital pregnancies. Other possible explanations include increased access to contraception as well as access to health and other educational programmes on the radio and television.

**Table 8.15: Premarital Births by Age of Mother at Birth of Child (in the last ten years), 1988-1998**

Age at Child Birth	1988		1998	
	No. of Women	%	No. of Women	%
<15	9	3.3	6	2.9
15-19	157	58.4	107	48.5
20-24	89	33.1	75	34.3
25+	14	5.2	31	14.3
Total	269	100.0	220	100.0

A comparative analysis of the 1988 GDHS data showed that premarital childbearing among Ghanaian women has not changed. Out of 7683 births ten years prior to the survey, 269 (or 3.5%) were born out of wedlock. Limiting the analysis to births in the last five years indicates a slight decline in premarital childbearing from 3.5 per cent in 1988 to 3.1 per cent in 1998, which is comparable to the 2.9 per cent observed when the data for the 1998 GDHS are extended to cover a ten-year window.

## 8.6 Childlessness

Childlessness can be a very traumatic experience, especially for women. Childlessness in this report is measured in two ways: the proportion of women with no child by the age of 35 years or the proportion of women who remain childless after seven years of marriage (Larsen and Menken, 1989). Here exposure time or marriage duration spans the period of entry into first marriage to the date of interview. The explanation for this is that infertile women are more likely to have dissolved their first union and are less likely to have been in one for as long as seven years. Confining the analysis first to intact marriages would therefore lead to invalid conclusions (Larsen, 1994). Analysis of the Ghana Demographic and Health Survey data suggests that childlessness for ever-married women aged 35 years and older increased slightly from 1.5 per

cent in 1988 to 2.0 in 1998 (Table 8.16). This increase could reflect the emerging phenomenon of delayed marriages into the thirties as well as the deliberate postponement of childbearing among educated and professional women. This calls for a need to review the cut off age of 35 years.

**Table 8.16: Ever Married Women (35 years and older) by Childbearing Status**

Childbearing Status	1988 GDHS		1998 GDHS	
	No. of women	%	No. of women	%
Childless	19	1.5	30	2.0
Has at least one child	1238	98.5	1471	98.0
Total	1257	100.0	1501	100.0

On the basis of the second definition of marriage duration, the proportion childless rose from 1.3 per cent in 1988 to 1.8 per cent in 1998 as shown in Table 8.17. These estimates are very similar to those observed earlier using the age cut-off point of 35 years. Comparatively, the most recent estimate of 1.8 per cent for ever-married women who have been married for seven years or more is slightly lower than the levels observed for countries such as Tanzania (2.4%), Cote d'Ivoire (2.7%) and the Central African Republic (6.2%) based on an analysis of DHS data collected between 1995 and 1997 (Larsen and Yan, 2000).

**Table 8.17: Ever-Married Women (for 7 years or more) by Childbearing Status**

Childbearing Status	1988 GDHS		1998 GDHS	
	No. of women	%	No. of women	%
Childless	34	1.3	48	1.8
Has at least one child	2211	98.7	2600	98.2
Total	2558	100.0	2648	100.0

## 8.7 Fertility Preferences and Contraceptive Use

Fertility preferences are indicators of future reproductive behaviour but are usually adjusted to match changing socio-economic conditions depending on the quantitative assessment of both the utility and cost of children. Factors that motivate people to change their reproductive goals include urbanization, level of education, employment status, and occupation. For example, urban life styles may be too costly to support large family sizes. Urbanization may thus influence people to change their family size preferences to levels that match the anticipated cost of having children. Fertility preferences thus provide useful information about future trends in fertility in a given society. To gain an insight into women's reproductive intentions in Ghana, this section looks at women's ideal family size, the desire for additional children and the factors that affect these preferences. An attempt is also made to investigate the relationship between these desires and contraceptive use to see how far their need for contraception is met.

### Desire for Additional Children

Table 8.18 shows the distribution of currently married women by their desire for additional children. The data suggest that the desire for additional children has declined from 68.5 per cent in 1988 to 55.8 per cent in 1998. The proportion of women who desire no more children increased from 23 per cent in 1988 to 33.0 per cent in 1993 but remained stable at approximately the same level (34%) in 1998.

**Table 8.18: Currently Married Women by Desire for More Children, 1988-1998**

	1988 <sup>a</sup> (N=3156)	1993 <sup>b</sup> (N=3204)	1998 <sup>c</sup> (N=3131)
Desire for children			
Have another soon <sup>1</sup>	19.5	16.3	18.4
Have another later <sup>2</sup>	44.9	39.3	34.6
Have another, unsure when	4.1	0.7	2.8
Undecided	5.1	5.4	5.5
Want no more	22.8	33.0	33.7
Sterilized	-	0.9	1.3
Declared infecund	3.5	3.7	3.6
Not stated	0.1	0.6	0.1
Total	100.0	100.0	100.0

Sources: <sup>a</sup> Ghana Statistical Service and Macro International Inc. (1989)

<sup>b</sup> Ghana Statistical Service and Macro International Inc. (1994)

<sup>c</sup> Ghana Statistical Service and Macro International Inc. (1999)

Notes:

<sup>1</sup> Wants next birth within 2 years

<sup>2</sup> Wants to delay next birth for 2 years or more

Among the women interviewed in 1998, 18.4 per cent wanted another child within two years of the date of interview while 34.6 per cent wanted to have the child at a later date. Approximately five per cent of the women could not have additional children for reasons of infecundity. The desire to have another child consistently declines with the number of living children from 89 per cent for women with no living child to 12 per cent for those with six children or more, as indicated in Table 8.19. In contrast, the desire to stop childbearing is higher for women with more living children; for example, 76 per cent of women with six children or more do not want any more children, compared to less than one per cent of women with no living children.

**Table 8.19: Currently Married Women by Desire for More Children and by No. of Living Children**

Desire for children	Number of living children							Total
	0	1	2	3	4	5	6+	
Have another soon <sup>1</sup>	60.7	25.5	21.4	17.0	9.3	7.0	3.3	18.4
Have another later <sup>2</sup>	19.9	63.2	49.1	34.9	23.9	17.8	8.5	34.6
Have another, unsure when	8.4	4.5	3.1	2.0	2.0	0.8	0.6	2.8
Undecided	4.9	3.1	7.8	5.7	7.4	7.5	2.7	5.5
Want no more	0.8	2.3	15.7	34.9	50.7	60.9	76.0	33.7
Sterilized/Declared infecund	5.3	1.4	3.0	5.5	6.7	6.0	8.9	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	222	571	601	533	426	309	468	3131

Notes: <sup>1</sup> Wants next birth within 2 years

<sup>2</sup> Wants to delay next birth for 2 years or more.

There is little variation in the desire for additional children between categories of women who have received some formal education. There are substantial differences, however, in the desire to limit or postpone births between women with no formal education and their counterparts in other educational categories. For example, the proportion of women who want no more children is 32 per cent for those with no education and 35 per cent for each of the other educational groups. On the other hand, women with no formal education who desired to postpone childbearing to a later date was 37 per cent compared to 33 per cent for those with primary, middle/JSS and secondary or higher levels of education (Table 8.20).

**Table 8.20: Currently Married Women by Desire for More Children and by Level of Education, 1998**

Desire for children	Level of education				Total
	None	Primary	Middle/JSS	Sec+	
Have another soon <sup>1</sup>	18.0	17.5	18.7	21.3	18.4
Have another later <sup>2</sup>	36.9	33.2	33.5	32.7	34.6
Have another, unsure when	2.1	3.5	3.3	2.4	2.8
Undecided	5.2	6.6	5.7	3.5	5.5
Want no more	31.8	34.9	34.6	34.6	33.7
Sterilized/Declared infecund	6.0	4.3	4.2	5.5	5.0
Total	100.0	100.0	100.0	100.0	100.0
N	1106	576	1195	254	3131

Notes: <sup>1</sup>Wants next birth within 2 years

<sup>2</sup>Wants to delay next birth for 2 years or more

Table 8.21 also suggests that while the desire to postpone childbearing was much lower for urban women (33%) than for rural women (40%), the desire to limit childbearing was marginally higher for urban (35%) than for rural women (33%).

**Table 8.21: Currently Married Women by Desire for More Children and Locality**

Desire for children	Place of Residence		
	Urban	Rural	Total
Have another soon <sup>1</sup>	21.5	17.1	18.4
Have another later <sup>2</sup>	28.4	37.4	34.6
Have another, unsure when	4.1	2.2	2.8
Undecided	5.9	5.3	5.5
Want no more	34.6	33.3	33.7
Sterilized/Declared infecund	5.5	4.7	5.0
Total	100.0	100.0	100.0
N	979	2152	3131

Notes: <sup>1</sup>Wants next birth within 2 years

<sup>2</sup>Wants to delay next birth for 2 years or more

Regarding the distribution by occupational groups, the desire to limit births was substantially high for those in professional occupations (44%) relative to those in other occupational categories (Table 8.22). In contrast, the desire to have additional children (i.e. those who wanted to have another child whether soon, later or unsure when) was lowest for the professional, technical, managerial, and clerical workers (45%) and highest for women who had no jobs (67%) followed by those in manual occupations (63%).

**Table 8.22: Currently Married Women by Desire for More Children and Occupation, 1998**

Desire for Children	Unemployed	Professional/Technical/			Skilled Manual	Total
		Manager/Clerical	Sales	Agric Self employed		
Have another soon <sup>1</sup>	16.3	29.3	19.5	15.4	21.5	18.4
Have another later <sup>2</sup>	48.0	15.1	30.9	34.2	39.1	34.6
Have another, unsure when	2.6	0.9	3.6	2.0	2.6	2.8
Undecided	9.7	3.8	5.4	4.6	4.8	5.5
Want no more	20.5	44.3	36.2	37.0	28.2	33.7
Sterilized/Declared infecund	2.9	6.6	4.3	6.8	3.8	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	383	106	1233	990	419	3131

Notes: <sup>1</sup>Wants next birth within 2 years

<sup>2</sup>Wants to delay next birth for 2 years or more



The distribution of currently married women by their employment status and fertility desires in Table 8.23 shows that the highest proportion of those desiring to limit childbearing (i.e. those wanting no more children) is found among the professional, technical and managerial workers (44.3%), followed by the agricultural self-employed (37.0%), and sales workers (36.2%). Generally, women in professional occupations, agriculture, or sales work outside the home and having many babies may impede one's success in these activities, because each birth requires suspending work for a while to care for the child. Such work interruptions in themselves have adverse financial implications for the family, especially in situations where the woman may not be on paid leave.

**Table 8.23: Currently Married Women by Desire for More Children and by Employment Status, 1998**

Desire for Children	Unemployed	Paid	Self	Unpaid	Not Stated	Total
		employee	employed	Worker		
Have another soon <sup>1</sup>	16.3	21.6	17.3	20.0	23.9	18.4
Have another later <sup>2</sup>	48.0	34.2	31.6	45.8	29.8	34.6
Have another, unsure when	2.6	1.5	2.9	5.3	1.8	2.8
Undecided	9.7	3.6	5.2	5.3	4.8	5.5
Want no more	20.5	33.6	37.5	17.8	36.8	33.7
Sterilized/Declared infecund	2.9	5.5	5.4	5.8	2.9	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	383	333	1953	190	272	3131

Notes: <sup>1</sup>Wants next birth within 2 years

<sup>2</sup>Wants to delay next birth for 2 or more years

### **Mean Ideal Family Size**

Knowledge about the mean ideal family size provides a fair idea about future fertility levels. In all the three rounds of the Ghana Demographic and Health Survey, women were asked how many children they would like to have if they could choose the exact number of children to have in their lifetime. These fertility decisions are greatly influenced by traditional norms and values as well as changing socio-economic circumstances, but they reflect fertility behaviour patterns. Table 8.24 shows that the average number of children women would have wished to have, if they had to start childbearing all over again has declined by one child between 1988 and 1998. In general, desired family size tends to increase with age, and this is true for all three rounds. With the exception of the 20-34 age groups, there are no substantial declines in family size preferences between 1993 and 1998. Compared to actual fertility levels, the desired family size of 4.3 for 1998 is closer to the reported figure of 4.6 whereas those for 1988 and 1993 are much lower than the actual estimated fertility levels of 6.4 and 5.5. These observations could mean that women in Ghana are now actually having their desired family size whereas in the past (1988-1993) these desires were mere expressions of what should have been.

**Table 8.24: Mean Ideal Number of Children for all Women by Age Group (1988-1998)**

Age Group	1988	1993	1998
15-19	4.7	3.6	3.6
20-24	4.7	3.9	3.7
25-29	5.2	4.4	4.1
30-34	5.5	4.8	4.5
35-39	5.7	4.8	4.7
40-44	6.0	5.1	5.0

45-49	6.5	5.5	5.5
Total	5.3	4.4	4.3

Table 8.25 shows that mean ideal family size varies considerably by place of residence, level of education, occupation and employment status. As expected, urban residents desire small family sizes. In terms of education, fertility desires decreased consistently with increasing levels of education. While women with no formal education desired a family size of 5.4 children, those with secondary or higher levels of education wanted to have 3.3.

**Table 8.25: Mean Ideal Family Size of all Women by Selected Background Characteristics, 1998**

Socio-economic characteristic	Mean ideal family size
<b>Place of residence</b>	
Urban	3.7
Rural	4.6
<b>Level of Education</b>	
No education	5.4
Primary	4.2
Middle/JSS	3.8
Secondary+	3.3
<b>Occupation</b>	
Unemployed	3.8
Professional/Tech/Managerial/Clerical	3.4
Sales	4.2
Agric self-employed	5.1
Skilled manual	4.0
<b>Employment Status</b>	
Unemployed	3.8
Paid employee	4.0
Self-employed	4.4
Unpaid worker	4.9
Total	4.3

The distribution by occupation indicates that those engaged in self-employed agriculture desire larger family sizes than women in other occupational groups. Comparatively, those in professional, technical, managerial or clerical occupations desired fewer children (3.4 children). Similarly, paid employees had the lowest fertility desires (4.0 children) compared to the self-employed (4.9 children).

Although fertility preferences are individually motivated, they have implications for the larger society and any changes in these preferences would influence actual fertility levels. Thus, factors that have the potential of reducing fertility desires should be taken into account during the formulation of policies aimed at reducing fertility in Ghana.

### **Demand for Family Planning Services and Use of Contraception**

Current users of contraception are classified as having a met need for family planning services. On the other hand, women who report that they do not want any more children or that they would like to wait for two or more years before having another child, but are not using contraception may be considered to have an unmet need for family planning. The sum total of

met and unmet need for family planning therefore constitutes the total potential demand for family planning services.

Table 8.26 shows the unmet and met needs for currently married women by background characteristics. Overall, 45 per cent of currently married women desired to have family planning services while only 22 per cent are currently using contraception and therefore have a met need for family planning services. This means that less than half (48.8%) of women who desire family planning services have their needs satisfied.

**Table 8.26: Currently Married Women with Met and Unmet Need for Family Planning by Background Characteristic (GDHS, 1998)**

Socio-Economic Characteristic	Unmet Need	Met Need	Total Demand	%Demand Satisfied
<b>Place of residence</b>				
Urban	21.6	30.4	52.0	58.4
Rural	23.6	18.1	41.8	43.4
<b>Level of Education</b>				
No education	23.7	13.2	36.9	35.7
Primary	26.5	20.3	46.8	43.4
Middle/JSS	21.8	26.6	48.4	54.9
Secondary+	17.2	42.3	59.5	71.0
<b>Occupation</b>				
Unemployed	21.1	16.4	37.5	43.8
Prof./Tech/Managerial/Clerical	13.2	39.6	52.8	75.0
Sales	25.2	25.0	50.2	49.8
Agric self-employed	23.3	16.6	39.9	41.7
Skilled manual	20.0	26.3	46.3	56.7
<b>Employment Status</b>				
Unemployed	21.1	16.4	37.5	43.8
Paid employee	18.7	28.0	46.7	60.0
Self-employed	24.6	22.3	46.9	47.6
Unpaid worker	18.4	14.2	32.6	43.5
Total	23.0	22.0	45.0	48.8

The distribution of women by selected socio-economic characteristics suggests that unmet need for family planning services varies by level of education, occupation and employment status. In terms of education and unmet need, an inverse relationship is observed. Whereas the unmet need for women with secondary education or higher was 17 per cent, that for women with primary education was 27 per cent.

Within the occupational groups, unmet need was highest among those in sales. The distribution by employment status also shows that the self-employed have the greatest unmet need of 25 per cent. Women with the highest percentage of their need for family planning services satisfied include women who live in urban areas (58%) or have secondary or higher levels of education (71%), or are professional, technical, managerial, or clerical workers (75%) or are paid employees (60%). On the other hand, the groups with the lowest percentage of their demand

satisfied include women living in rural areas (43%) or have no education (36%), are in self-employed agriculture (42%) or are unpaid workers (44%).

## 8.8 Proximate Determinants and the Fertility Reduction in Ghana

In this section, an attempt is made to estimate the relative contributions of the proximate determinants of fertility to the reduction in natural fertility (fertility in the absence of contraception) in Ghana using the fertility model developed by Davis and Blake (1956) and later modified by Bongaarts (1978), Bongaarts and Potter (1983), Bongaarts *et al* (1984) and Stover (1998). The revised model includes five proximate determinants of fertility (namely marriage, abortion, contraception, postpartum infecundability and pathological sterility) and is expressed as:

$TFR = C_m * C_i * C_c * C_a * C_p * TF$ , where  $C_m$  is the index of marriage,  $C_i$  is the index of lactational infecundability,  $C_c$  is the index of contraception,  $C_a$  is the index of abortion,  $C_p$  is the index of pathological sterility and  $TF$  is the total fecundity. The underlying concept of the model is that fertility is lower than its natural biological level as a result of the inhibiting effects of these five proximate determinants of fertility. A detailed description of the model is presented in Appendix IV. In calculating the index of contraception, the average contraceptive prevalence rate for two survey periods was used in order to adjust for the lagged effects of recent changes in contraceptive prevalence. The index of sterility was assumed to be 1.0 since the proportion of women who are childless among those aged 45-49 years is less than 3.0 per cent. The index of abortion was also estimated by assuming an average total fecundity rate of 15.3 births per woman.

Table 8.27 presents the relative contributions of the proximate determinants of fertility to the fertility reduction in Ghana. The data suggest that postpartum infecundability ( $C_i$ ) still has the greatest inhibiting effect on natural fertility reduction in Ghana. In 1998 postpartum infecundability accounted for 40.0 per cent of the fertility decline, followed by marriage ( $C_m$ ) with 35.9 per cent and contraception ( $C_c$ ) with 18.3 per cent. A similar pattern was observed during the analysis of the 1979/80 GFS and the 1988 DHS data (Gbortu, 1995). The index of abortion ( $C_a$ ) was determined once all the known variables were substituted into the fertility model. For 1998, the index of abortion was estimated to be 5.8 per cent.

**Table 8.27: Proximate Determinants of Fertility and their Relative Contributions to the Fertility Reduction in Ghana (1998 Ghana DHS)**

Index	Relative Contributions (%)
$C_m$ (Marriage)	35.9
$C_c$ (Contraception)	18.3
$C_i$ (Lactational Infecundability)	40.0
$C_a$ (Abortion)	5.8
Total	100.0

## 8.9 Summary and Conclusion

This analysis has indicated substantial declines in fertility. For example, the reported total fertility rates fell from 6.47 children per woman in 1979/80 to 6.43 in 1988 and then to 4.55 in

1998 and finally to 3.99 in 2000. Application of different adjustment procedures to the available data, however, showed that the reported levels of fertility for 1998 and 2000 were lower than expected due to errors inherent in the data. The results of these analyses gave estimates of 4.74 and 4.64 children per woman for 1998 and 2000, indicating that Ghana's fertility has declined by about 28 per cent from a level of 6.43 in 1988 to 4.64 in 2000 within a period of 12 years. Even then, it is clear from the latter figure that fertility levels are still high in Ghana. This has both demographic and economic implications. The current level of fertility implies that the dependency ratio for the country will continue to be high for at least the next 50 years because of the inbuilt potential for the population to grow. The resulting increasing rate of population growth will continue to thwart efforts at rebuilding the economy, given our limited resources. At the individual level, high fertility has its own health implications resulting from low standards of living, malnutrition, and high exposure to disease.

The analysis also confirms that both current and retrospective fertility rates vary by the woman's socio-economic background. Data from the 1998 Demographic and Health Survey indicate that current fertility, for example, is strongly influenced by socio-economic factors such as region and place of residence, level of education and marital status. The pattern observed by place of residence, for instance, indicates that current fertility is highest for women who were resident in rural areas compared to those in urban areas. The analysis further shows that current fertility is inversely related to education. Women with no education have a significantly higher fertility than those with higher levels of education. Generally, education affects women's fertility by reducing adherence to unfavourable traditional values and increasing exposure to new ideas which can have a reducing effect on fertility. Other groups with relatively high levels of fertility include the currently married, the self-employed and the unpaid family worker and those engaged in self-employed agriculture.

With regard to the proximate determinants of fertility, postpartum infecundability remains the most important determinant of fertility behaviour in Ghana, followed closely by incidence of marriage, though there has been a decline in their level of contribution. Comparable analysis for 1988 (Gbortsu, 1995) shows that the effect of postpartum infecundability has declined from 47.7 per cent to the 40.0 per cent in 1998 and that of marriage has moved from 41.1 per cent in 1988 to the 35.9 per cent in 1998. On the other hand, the inhibiting effect of contraception on fertility is also rising, from 11.2 per cent in 1988 to the 18.3 per cent in 1998. Significantly, the effect of abortion was negligent in 1988 while in 1998 it was 5.8 per cent. Independently, the depressing effect on fertility of rising age at childbearing, which is a factor of marriage, between 1988 and 1998 was estimated to be only six per cent.

The analysis of reproductive preferences also shows that the desired family size of 4.3 is twice the post-transitional figure of two. This further supports the observation that the fertility transition in Ghana will take a long time to run its course. Only 49 per cent of the women who wanted to limit or space their births were actually using contraceptives to delay or avoid pregnancy. The data further show that a woman's tendency to have her need for family planning services satisfied is dictated by her place of residence, level of education, employment status and occupation. Family planning services should be targeted at rural women or those resident in the northern part of Ghana. Other target groups include women with no formal education. It is expected that increasing education, improving the standard of living, and increasing the pace of

infrastructural development, particularly in the rural areas and the three northern regions, can have a dampening effect on fertility through the gradual decline in the traditional value for large families, rising age at childbearing and the increasing acceptance of family planning services.

## APPENDIX 8.1

### The Brass P/F Ratio Technique

This technique is used to adjust the reported age-specific fertility rates to the level indicated by the average parities of women in age groups below 30 or 35 years. The adjustment factor is calculated by comparing the average number of children ever born (P) by age group of women with the average parity equivalent (F) obtained from the cumulated age specific fertility rate for that age group, and taking the average of these P/F ratios for younger women. The adjustment factor is then multiplied by all the observed period fertility rates to arrive at a new set of age-specific fertility rates.

The average parity equivalent  $F(i)$  is calculated using the Coale and Trussell fertility model:  $F(i) = \Phi(i-1) + a(i)f(i) + b(i)f(i+1) + c(i)\Phi(7)$ , where a, b and c are constants and

$\Phi(i)$  is the cumulated fertility schedule for a period and is defined as:  $\Phi(i) = 5 \left[ \sum_{j=0}^i f(j) \right]$ .

Ideally, the  $P/F$  ratios should not exceed one if there are no errors in both the current and retrospective fertility data. By implication, if the observed results for younger age groups are close to unity, they indicate that the reported data on current fertility are consistent with those on retrospective fertility, suggesting that current fertility data have been collected with some degree of accuracy and are relatively reliable. Marked deviations of the  $P/F$  ratios from unity or gradual declines in the ratios with respect to age suggest the need for adjustment of the observed age-specific fertility schedule. In a situation where the  $P(i)/F(i)$  ratios are similar for different values of  $i$  below age 35, either  $P(2)/F(2)$  or  $P(3)/F(3)$  can be used as the adjustment factor. On the other hand, if the ratios are not similar, a weighted average of any consistent group of ratios can be used. A new set of age-specific fertility rates can then be obtained by applying the adjustment factor K to the reported age-specific fertility rates. Where the age-specific fertility rates are obtained from births in the last 12 months, in which case the mothers would be six months younger at the time of childbirth, the fertility rates for the conventional five-year age groups are calculated by weighting the data using the equation:  $f^*(i) = (1 - W_{(1-i)})f_{(i)} + W_{(i)}f_{(i+1)}$ .

The adjustment factor K is then applied to the adjusted  $f^*(i)$  values. The adjusted total fertility rate is then calculated as:  $TFR = 5 \left[ \sum_{i=1}^7 f^*(i) \right]$ .

The basic assumptions underlying the P/F ratio technique are that:

- The level and pattern of fertility have not changed during the 10 to 15 years preceding the survey or census;
- The reported number of children ever born per woman is complete at least up to age 30 or 35 years;
- There is no age misreporting of women in the reproductive age group; and
- The age pattern of fertility revealed by births in the past year is correct but the level of fertility is distorted by reference period errors.

The last three assumptions are reasonable at least for women in the age group 15-35 years but under conditions of changing fertility, as in the case of Ghana, the application of the technique may not be valid, since violation of the first assumption will significantly affect the detection of errors in the data. For example, a declining trend in the  $P/F$  ratios by age may either suggest that fertility has been rising or that the reported data on children ever born suffer from increasing omissions of children as the age of the woman increases. The method is, therefore, in the strict sense not applicable to the 1993, 1998 and 2000 data sets. This is because fertility decline was apparent following the 1993 Ghana Demographic and Health Survey. In view of this obvious violation, the procedure has been used more as a test of internal consistency for these years.



## APPENDIX 8.2

### Brass Relational Gompertz Model

This Brass Relational Gompertz model is used to evaluate and adjust fertility estimates obtained from current and retrospective fertility data. In this procedure, the Gompertz function is fitted to the information on the average number of children ever born per woman using the relationship:

$F(x) = F.A^{B^x}$ , where  $F(x)$  is the cumulated fertility up to age  $x$  or the average number of children ever born by age of the woman;  $F$  is the total fertility rate;  $x$  is the age group of mother; and  $A$  and  $B$  are constants. The double exponential is first transformed into a linear model by taking logarithms twice. A scale transformation is then performed to obtain a better fit of the Gompertz function to the actual data. Total fertility rates for each five year-age group in the reproductive period are then obtained by adjusting the observed age pattern of fertility to the shape of the Gompertz function using a standard age pattern of fertility and a set of coefficients as follows:  $\eta(F(x)) = \alpha + \beta(F_s)$  where  $\eta(F(x))$  or the  $\eta$  transformation of the observed  $F(x)/F$  ratios is the linear function of the  $\eta$  transformation of the standard fertility schedule ( $F_s$ ). The Gompertz fertility model is based on the assumption that:

- The average number of children born by age of the women follows the Gompertz function;
- The reporting of the average number of children ever born per woman, by age is complete and represents the level of cumulative fertility up to each age group; and
- The completeness of reporting of children born during last 12 months prior to the census or survey is the same for all age groups of women.

Unlike the P/F ratio method, this model does not assume constant fertility in the recent past and is, therefore, one of the most appropriate techniques for indirectly estimating the current fertility level of Ghana. This model generally represents the fertility level of various populations rather well because the pattern of cumulative fertility rates has been observed to closely follow the Gompertz function (Newell, 1988; Arriaga, 1994)). In Africa, however, the assumption that the completeness of event reporting and the accuracy of age reporting are of the same magnitude across age groups may not hold and could result in biased estimates.

## APPENDIX 8.3

### The Arriaga Technique

This technique estimates fertility rates using data on children ever born, by age of mother, and the age pattern of fertility from at least two survey or census dates. Single-age estimates of the average number of children ever born per woman are first obtained for the years before and after the census or survey dates by linear interpolation. Age-specific fertility rates for single ages are then calculated based on the annual cohort changes in children ever born. Fertility rates for five-year age groups are further calculated by taking the average of the single-age fertility rates. From these average rates, cumulative fertility rates are calculated. Cumulative fertility rates are also calculated from the observed age pattern of fertility. Adjustment factors are subsequently calculated by dividing the cumulated fertility rates obtained (by comparing the increase in the number of children ever born in each cohort) by the corresponding cumulated fertility rates pertaining to the age pattern of fertility. Finally, the adjusted total fertility rate for each age group is estimated by multiplying the rates from the age pattern of fertility by a selected adjustment factor, which corresponds to the age group whose mean is closest to the mean age of the fertility pattern. The technique works on the assumption that:

- The reporting of the average number of children ever born per woman is complete (at least for women under 30 years or 35 years of age);
- The completeness of reported births used to estimate the age-specific fertility rates is the same for all age groups of women;
- Under conditions of declining fertility, the average number of children ever born by age of mother changes almost linearly for mothers under 35 years of age (Arriaga, 1983);
- Childbearing is limited to the age group 15-49 years;
- There is accurate reporting of ages by women providing the information.

The problems associated with this technique are similar to those identified for the Gompertz Relational model in terms of accuracy in age reporting and completeness in event reporting. It, however, does not require an assumption of constant fertility and so can be reliably applied in populations where fertility is declining.

## APPENDIX 8.4

### Estimating the Inhibiting Effect of the Proximate Determinants of Fertility

The fertility model, first developed by Davis and Blake (1956), and later modified by Bongaarts (1978), Bongaarts and Potter (1983), Bongaarts et al (1984) and Stover (1998), suggests that observed fertility is lower than its natural maximum biological level as a result of the inhibiting effect of the five most important proximate determinants of fertility, namely marriage and marital disruption, use and effectiveness of contraception, induced abortion, postpartum infecundability caused by breastfeeding or abstinence, and pathological sterility. Thus, the following relationship exists between the observed level of fertility and the fertility-inhibiting effects of these proximate determinants:

$$TFR = C_m * C_c * C_i * C_a * C_p * TF, \text{ where}$$

$C_m$ = index of marriage and is equal to 1 if all women of reproductive age are married and 0 in the absence of marriage;

$C_c$ = index of contraception and is equal to 1 in the absence of contraception and 0 if all fecund women use 100 per cent effective contraception;

$C_i$ = index of postpartum infecundability and is equal to 1 in the absence of lactation and postpartum abstinence and 0 if the duration of infecundability is infinite;

$C_a$ = index of induced abortion and is equal to 1 in the absence of induced abortion and 0 if all pregnancies are aborted;

$C_p$ = index of pathological sterility (i.e. primary or secondary sterility due to disease); and

$TF$ = total fecundity rate, which represents the combined effect of natural fecundability, spontaneous intrauterine mortality and permanent sterility. This component can be estimated when all other components in the model are known. Where this cannot be calculated, however, an average of 15.3 births per woman is suggested based on empirical evidence.

According to Bongaarts and Potter (1983), the various components of the above equation can be estimated using the following models:

$$C_m = \left[ \sum m_a * g_a \right] / \sum g_a, \text{ where}$$

$m_a$  = age-specific proportions currently married (or in consensual union) among females

$g_a$  = age-specific marital fertility rates;

$$C_c = 1 - 1.08 * u * e, \text{ where}$$

$u$ =proportion of married women of reproductive age who are currently using contraception.

$E$ =average use effectiveness of contraception. It is actually a weighted average of method specific use effectiveness levels and is expressed as:

$$\sum [e_m * u_m] / \sum u_m, \text{ where}$$

$u_m$  = proportion of women using a method of contraception and

$e_m$  = method specific use effectiveness levels (see Hatcher et al, 1997);

$$C_i = \frac{20}{18.5 + i}, \text{ where}$$

$i$  = average duration of postpartum insusceptibility;

$$C_a = \frac{TFR}{TFR + 0.4(1 + u * e)TA}, \text{ where}$$

$0.4(1 + u * e)$  = an estimate of the births averted by a single abortion. According to Stover (1998), multiplying the contraceptive prevalence ( $u$ ) by the effectiveness of contraception ( $e$ ) helps to accurately estimate the women protected by contraception.

$TA$  = total abortion rate which is defined as the average number of induced abortions per married woman by the end of her reproductive cycle, if induced abortion rates remain at the prevailing levels throughout the reproductive period.

Finally, the index of primary and secondary sterility due to disease is estimated using the expression:  $C_p = (7.63 - 0.11 * s) / 7.3$ , where

$s$  = the proportion of women aged 45-49 who have had no live births. This equation is equal to 1.0 when 3 per cent of women are childless at age 45-49 years. Proportions above 3 per cent represent the effect of pathological sterility.

The relative contributions of each of the five proximate determinants to the reduction in natural fertility can be evaluated using the logarithmic transformation of the fertility model. This is

$$\text{expressed as: } \ln\left(\frac{TF}{TFR}\right) = \ln\left(\frac{1}{C_m * C_c * C_i * C_a * C_p}\right)$$

The equation can also be rewritten as:

$$\ln TF - \ln TFR = -(\ln C_m + \ln C_c + \ln C_i + \ln C_a + \ln C_p)$$

Empirically,  $TF$  has been found to average 15.3 births per woman in both developed and developing countries (Bongaarts, 1978). Thus, the index of abortion was calculated by substituting this average value of  $TF$  into the fertility model. Since the proportion childless among the age group 45-49 years was less than 3 per cent in the 1998 Ghana DHS survey, the index of pathological sterility was assumed to be 1.0. Thus, the relative contribution of the index of contraception to the reduction in natural fertility, for example, can be evaluated as follows:

$$\left(\frac{\ln C_c}{\ln C_m + \ln C_c + \ln C_i + \ln C_a}\right) * 100.$$

Since the observed  $TFR$  is centred at the mid-point of the five-year period preceding each survey, the index of contraception was estimated using the average of the contraceptive prevalence rates for two survey periods so as to adjust for the lagged effects of recent changes in contraceptive prevalence (Mauldin and Segal, 1988).

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## CHAPTER 9: MORTALITY LEVELS, PATTERNS AND TRENDS

### 9.1 Introduction

The study of the mortality levels, patterns and trends serves three main purposes. First it provides information about the population's state of health, which in turn serves as a measure of living standards in the country. It also gives an indication of the social differences that exist within the society. Lastly, it provides information on the population's future growth potential. A rapid fall in mortality, for example, can result in accelerated growth in the situation of high fertility, unless the declines in mortality are matched by similar declines in fertility. Knowledge about a country's mortality situation is therefore relevant for effective development planning.

One of the priority goals of African governments is to reduce the prevailing high levels of mortality so as to raise the average life expectancy (United Nations Economic and Social Council, 2003). However, the ability of any government to achieve this goal depends on the state of household food security, environmental sanitation and health care provision. Various interventions (i.e. immunization, improved sanitation and access to clean water, etc) adopted in Ghana over the years have helped in bringing down mortality rates (Ministry of Health, 2003). Nevertheless, there is room for further reductions and this can be achieved if attention is focused on the groups with the highest levels of socio-economic inequalities.

Factors that account for high mortality levels are many and complex but the immediate causes of morbidity and mortality in Ghana are still infectious and parasitic diseases. In addition, other factors such as malnutrition interact with these diseases to increase their incidence, prolong their duration and aggravate their severity. As long as these problems exist, misapplication of human resources will continue and sustained socio-economic development will be difficult to attain. In order to promote further reductions in mortality, a review of Ghana's past and present mortality performance and the isolation of the factors that contribute to the high mortality risks in Ghana are necessary.

#### **Objectives**

The study aims to provide in-depth analysis of the mortality situation in Ghana beginning from 1960. In line with this, the following main objectives are outlined:

- to estimate the levels and trends in infant and child mortality
- to examine differentials in infant and child mortality,
- to estimate the levels and trends in adult mortality,
- to examine these in the context of social and economic conditions.
- to recommend possible ways of reducing mortality levels in Ghana,

#### **Sources of Data**

The system for registering deaths in Ghana is not widespread enough to achieve a complete count; over the years, there have been various attempts to improve the coverage of the vital

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This chapter has been contributed by Dr. Philomena E. Nyarko



registration system, which was instituted in the country in 1935. In spite of these efforts, the system is still not comprehensive enough to be nationally representative and, therefore, census and survey data continue to serve as the primary sources of data for deriving mortality indices for the country and for studying its pattern and trend over time.

The main sources of data for this study are the 1960 Post Enumeration Survey, the 1971 Supplementary Enquiry, the 1979/80 Ghana Fertility Survey, the 1988, 1993 and 1998 Demographic and Health Surveys, the 1992 Infant, Child and Maternal Mortality Study and the 2000 Ghana Population and Housing Census. These data sources have been sufficiently described in an earlier publication (see Batse and Nyarko, 1995).

In both the censuses and the surveys, mortality levels can be assessed indirectly from data on children ever born and children surviving. In addition, the surveys are designed to collect birth history information, which can be used to derive direct estimates of mortality. The data collected through these birth histories include the date of birth and survival status of the child, the date of death and age at death of each dead child as well as other variables that are relevant for studying mortality differentials. Thus, where possible, both direct and indirect estimates of mortality are presented.

### **Quality and Limitations of Data**

Evaluation of the quality of data used in any analysis helps to interpret the outcome of the investigation. Where necessary, adjustments are made to improve the reliability of the results. As indicated in an earlier chapter, birth history reports and information on children ever born are usually subject to age and date misreporting as well as omission of births, particularly for older women, due to memory lapses and the inability to record dates of events because of illiteracy. Young unmarried women may also fail to report events in order to demonstrate conformity to cultural values, as premarital childbearing is frowned upon in the Ghanaian society. It is, thus, necessary to evaluate the data on children ever born and children surviving to identify internal inconsistencies that might bias the results of the mortality analysis. The assessment carried out earlier suggests that for both 1998 and 2000, there was under reporting of children ever born for the age group 15-19 years. The results further suggest under reporting of male births in the age groups 15-24 years and 30-34 years in 1998, as indicated by the age-specific sex ratios of children ever born.

The mean surviving children and mean children dead are presented in Table 9.1. If the number of surviving children were accurately reported, there should be gradual increases in the average number of surviving children and in the proportion of dead children by age of women. Table 9.1, however, shows large fluctuations in the proportion of children dead by age group in 2000. Also, the low mean number of surviving children observed for the age group 15-19 years in 1998 and 2000 compared to those of earlier years (1988, 1992 and 1993) may be an indication of under reporting of births in that age group. Similarly, the comparatively high proportion of dead children reported for the age group 15-19 years in 2000 relative to the proportions noted for the earlier years is further indication of misreporting of dead children. Evidence from earlier surveys suggest that the proportion of children dead among children ever born to mothers 15-19 years old ranges between seven and nine per cent, even though these proportions have been found to be relatively low compared to the experiences of the subsequent age groups.

**Table 9.1: Mean Children Surviving and the Proportion of Dead Children by Age of Mother**

Age Group	Mean Children Surviving					Proportion of Children Dead				
	1988 GDHS	1992 ICMMS	1993 GDHS	1998 GDHS	2000 Census	1988 GDHS	1992 ICMMS	1993 GDHS	1998 GDHS	2000 Census
15-19	0.20	0.29	0.20	0.12	0.13	0.07	0.08	0.07	0.09	0.39
20-24	1.08	1.28	1.02	0.89	0.79	0.14	0.11	0.12	0.10	0.20
25-29	2.26	2.34	2.02	1.81	1.76	0.15	0.14	0.13	0.10	0.16
30-34	3.50	3.42	3.33	2.95	2.84	0.16	0.14	0.13	0.12	0.17
35-39	4.57	4.27	3.91	3.88	3.66	0.16	0.16	0.15	0.13	0.17
40-44	5.39	4.97	4.92	4.61	4.17	0.18	0.19	0.15	0.15	0.19
45-49	5.65	5.29	5.35	4.97	4.51	0.22	0.21	0.19	0.16	0.19
Total	2.62	2.80	2.45	2.29	2.07	0.17	0.16	0.15	0.13	0.18

The omission of deaths in censuses or surveys may also be biased towards one sex. Sex ratios for surviving and dead children have thus been computed to assess the extent to which the two sexes were misreported. As shown in Table 9.2, the computed sex ratios for surviving and dead children point to possible errors in the data. The sex ratios of surviving children for year 2000 fall within the accepted range of 102 and 107 and also follow the general declining pattern with age, but those for 1998 may indicate omission of surviving males for women below age 35 and some level of under reporting of female surviving children by women in the 45-49 age group.

**Table 9.2: Sex Ratios of Children Surviving and Children Dead by Age of Mother**

Age Group	Sex Ratio of Surviving Children		Sex Ratios of Dead Children	
	1998 GDHS	2000 Census	1998 GDHS	2000 Census
15-19	0.89	1.07	1.00	1.34
20-24	0.96	1.04	0.80	1.25
25-29	0.99	1.05	1.16	1.18
30-34	0.99	1.04	1.12	1.18
35-39	1.05	1.03	1.36	1.15
40-44	1.04	1.03	0.95	1.17
45-49	1.08	1.03	1.12	1.17
Total	1.03	1.03	1.11	1.17

The 1998 data also indicate large fluctuations with respect to the sex ratios for dead children. Typically, sex ratios at death for sub-Saharan Africa range between 102 and 140 for under fives. Under reporting of male deaths is thus apparent for age groups 15-19, 20-24 and 40-44 in 1998. For year 2000, there is no indication that dead children were better reported for one sex compared to the other. As observed earlier, misreporting of the ages of the women may also add to the observed distortions in the data. The conclusion here is that the recorded number of children ever born, children surviving and children dead based on the 1998 GDHS and the 2000 Census are, to some extent, affected by reporting errors. This means that the mortality indices for the most affected age groups, especially the 15-19 and 20-24 year olds, must be interpreted with caution.

The other problem is that the whole age range of mortality cannot be derived from birth history data or from data on children ever born. Attempts made to provide direct estimates of adult mortality using data on deaths which occurred in the household 12 months prior to the census or survey have usually not yielded good results, as indicated by the results of the 1960 Post Enumeration Survey (PES) and the 1971 Supplementary Enquiry (SE). Subsequently, indirect

methods have been used to derive measures of adult mortality from infant and child mortality indices.

### **Methods of Analysis**

The estimation of childhood mortality is traditionally limited to the age group below five years. Besides the direct procedure for estimating infant and child mortality levels, several techniques are available for deriving the indirect measures of infant and child mortality. The Trussell variant of Brass' technique is used to provide infant and child mortality rates within the context of declining mortality. Essentially, the method uses data on children ever born and children surviving by age group of mother to derive the proportions dead ( $D_i$ ) among children ever born. These proportions are then converted into probabilities of dying ( $q(1)$ ,  $q(2)$ ,  $q(3)$ ,  $q(5)$ , and  $q(10)$ ) using a set of multipliers ( $K_i$ ) computed from the average parities of women in the age groups 15-19, 20-24 and 25-29 and a given set of coefficients. The basic equation is given as:

$q(x) = K(i) \times D(i)$ , where  $K(i)$  is the multiplier, which adjusts for non-mortality factors affecting the value of  $D(i)$ .  $K(i)$  is derived from the following estimation equation:

$$K(i) = a(i) + b(i) \times P(1) / P(2) + c(i) \times P(2) / P(3).$$

The time locations of the estimated probabilities are also obtained using a similar procedure:

$$t(i) = a(i) + b(i) \times P(1) / P(2) + c(i) \times P(2) / P(3).$$

The relationship between the proportions of children dead and the  $q(x)$  function is determined by the association between the duration of exposure to the risk of dying and the mother's age and timing of childbearing (UN Manual IX provides a detailed discussion of the method).

Generally, indirect estimation of infant and child mortality indices requires knowledge of the country's age pattern of mortality based on the distribution of reported deaths. In the absence of reliable vital statistics to guide such decisions, model life tables have been developed for estimating mortality indices in countries with deficient demographic data. These include the United Nations sets of model life tables, the Coale and Demeny regional model life tables, and the Brass Logit life table system (UN, 1982; Coale and Demeny, 1983; UN, 1983). Of these, the most commonly used are the four families of the Coale and Demeny Model life tables (North, South, East and West) and the five families of the United Nations Model life tables (Latin American, Chilean, South Asian, Far East, General) because of their greater degree of flexibility and ease of application (Tsfay, 1983; UN, 1983). Since the age pattern of mortality depicted by the North Model of the Coale and Demeny life table system has been identified as representing the closest approximation of the mortality pattern for countries in sub-Saharan Africa, it was used to estimate the relevant childhood mortality indices for Ghana.

When mortality is changing, information on the proportion of children dead can yield not only estimates of childhood mortality but also estimates of trends. In order to determine these trends and to facilitate comparison between the data sets used, the estimated  $q(x)$  values were converted into single mortality measures and plotted against the reference date. For each selected childhood age group, therefore, the common mortality index equivalent to the estimated  $q(x)$  values pertaining to various points in time provide an indication of the age-specific mortality trends in the country. For the determination of the overall mortality level for the country, the most stable common index, in this case  $q(5)$ , is matched to the appropriate pattern of model life tables. From

the estimated mortality level, other mortality indices such as the expectation of life at birth can be derived for the population.

## 9.2 Levels and Trends in Infant and Child Mortality

As mentioned earlier, all the post-independence surveys that have been conducted in Ghana collect information on the birth histories of women and the survival status of each birth at the time of the survey, which have been used to prepare direct estimates of infant and child mortality. The reliability of such estimates, however, depends on the completeness and accuracy of event and date reporting. The problem of underreporting has particularly been noted for women aged 15-19 years, frequently resulting in biased child mortality estimates for this age group. Hence, the estimates for this group and those of the 20-24 age group are usually excluded from trend analysis.

Data on children ever born and children surviving gathered in the censuses, and quite often in the surveys, are expected to provide more reasonable estimates of infant and child mortality indices, especially in situations where the birth history information is fraught with errors of omission and inaccurate reporting of dates. On the other hand, it has been argued that the indirect methods could also result in an over estimation of mortality indices. For a more complete assessment of childhood mortality in Ghana, however, both direct and indirect estimates of three indices are presented. These are infant mortality (the probability of dying before age 1), child mortality (the probability of dying between exact age one and the fifth birthday), and under-five mortality (the probability of dying between birth and age five).

The indirect estimates of infant, child and under-five mortality rates from censuses and surveys conducted in Ghana since independence are presented in Table 9.3. A critical examination of the data presented in this Table suggests that most of the estimates for younger women (mostly the 15-19 and 20-24 year olds) do not exhibit a smooth trend.

**Table 9.3: Indirect Estimates of Infant and Child Mortality Rates, 1960-2000**

<b>Age group</b>	<b>Infant Mortality</b>	<b>Child Mortality</b>	<b>Under-five Mortality</b>	<b>Reference Date</b>
<b>1960 PES</b>				
15-19	143	108	236	1958.7
20-24	137	102	225	1957.3
25-29	144	109	237	1955.4
30-34	148	113	245	1953.3
35-39	155	119	256	1951.0
40-44	200	158	327	1948.6
45-49	159	122	261	1945.8
<b>1971 SE</b>				
15-19	121	93	203	1970.4
20-24	115	87	192	1969.1
25-29	118	91	198	1967.2
30-34	123	96	206	1964.9
35-39	123	96	207	1962.4
40-44	126	99	213	1959.7
45-49	129	102	219	1956.8

**Table 9.3: Cont'd**

Age group 1979/80 GFS	Infant Mortality	Child Mortality	Under-five Mortality	Reference Date
15-19	85	49	129	1978.1
20-24	101	64	158	1976.9
25-29	86	50	132	1975.1
30-34	88	51	134	1972.9
35-39	87	51	133	1970.3
40-44	95	58	147	1967.4
45-49	105	69	167	1963.8
<b>1988 DHS</b>				
15-19	91	57	144	1987.0
20-24	108	73	173	1985.8
25-29	101	66	160	1984.0
30-34	101	67	161	1981.9
35-39	95	61	151	1979.6
40-44	96	62	152	1977.1
45-49	105	70	168	1974.2
<b>1992 ICMMS</b>				
15-19	74	46	117	1991.3
20-24	85	56	137	1989.9
25-29	90	61	146	1988.0
30-34	86	57	138	1985.9
35-39	90	61	145	1983.5
40-44	95	66	154	1980.9
45-49	98	69	160	1978.1
<b>1993 DHS</b>				
15-19	48	24	70	1992.6
20-24	88	60	143	1991.3
25-29	85	56	136	1989.5
30-34	81	53	130	1987.3
35-39	82	64	132	1984.8
40-44	80	52	128	1982.2
45-49	90	61	146	1979.4
<b>1998 DHS</b>				
15-19	92	63	149	1998.2
20-24	83	55	134	1996.9
25-29	68	41	106	1994.9
30-34	75	47	119	1992.5
35-39	73	45	116	1989.8
40-44	77	48	121	1987.0
45-49	75	47	119	1984.0
<b>2000 DHS</b>				
15-19	33	12	44	1999.2
20-24	107	79	178	1998.0
25-29	88	59	141	1996.3
30-34	94	65	153	1994.1
35-39	86	57	137	1991.8
40-44	89	60	144	1989.1
45-49	85	56	136	1986.2

Note: Based on the Trussell variant of Brass' technique and the North Model of Coale and Demeny life tables.

The estimates for women aged 20-24 years are biased upwards relative to the estimates for older women while those for the 15-19 year olds are biased downwards. The infant and child mortality indices for the five year period preceding each survey or census have therefore been estimated by fitting the logistic function to the data for the age groups with more plausible estimates.

## **Infant Mortality Rates**

Infant mortality rates estimated directly and indirectly have been presented in Table 9.4. The direct estimates have been derived from data on children born in the past 12 months and the number of children dying before age one. The direct estimate of infant mortality rate computed from the 1998 DHS for the period 1994-1998 was 57 deaths per 1000 while the application of the indirect technique yielded a value of 73 deaths per 1000 live births.

**Table 9.4: Trends in Infant Mortality Rates, 1960-2000**

Source	Period	Direct estimates (Rate per 1000 live births)	Indirect estimates (Rate per 1000 live births)
1960 PES	1956-1960	126	150
1971 SE	1967-1971	87	121
1979/80 GFS	1975-1979	72	90
1988 DHS	1983-1987	77	98
1992 ICMMS	1988-1992	-	85
1993 DHS	1989-1993	66	81
1998 DHS	1994-1998	57	73
Estimated <sup>a</sup>	1995-2000	-	72

<sup>a</sup> Estimated from the life table which corresponds to the extrapolated  $q_5$  value from all plausible  $q_5$  estimates for the period 1960-1998.

Since there was no information on deaths to children born 12 months prior to the 2000 census, only the indirect technique could be applied to the data. The application of the Trussell variant of the Brass technique to the 2000 census data indicated that the infant mortality rate prevailing during the five year period preceding the 2000 census (i.e. 1995-2000) was 87 deaths per 1000 live births. This estimate of 87 deaths per 1000 live births, which was obtained by extrapolating the estimates of infant mortality for the year 2000 (Table 9.3), is much higher than the 73 deaths per 1000 live births obtained indirectly from the 1998 GDHS data.

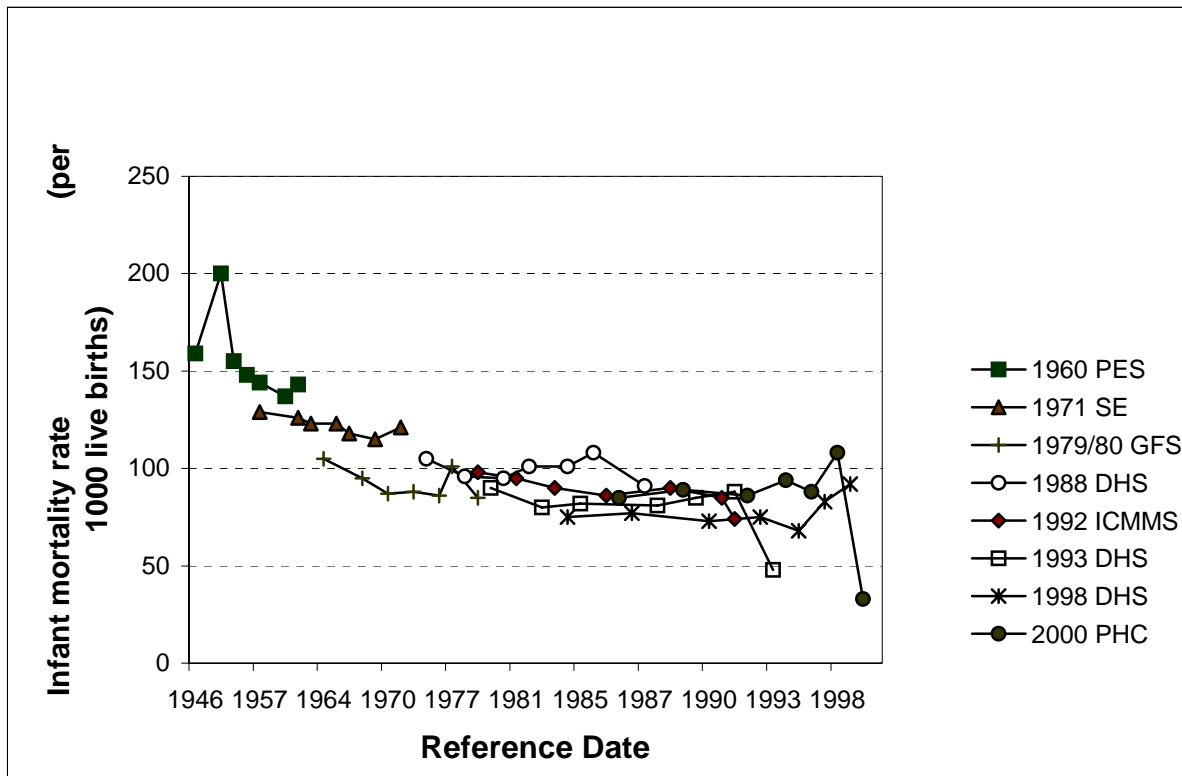
In order to provide a more reasonable estimate of the current level of infant mortality, the logistic regression procedure was fitted to the plausible estimates of the most stable index, ( $q_5$ ), computed from the various data sets. The estimated under-five mortality rate of 113.7 deaths per 1000 live births for the period 1995-2000 was then used as the point of entry into the North family of the Coale and Demeny model life tables to determine the implied level of mortality and the corresponding level of infant mortality for the five-year period preceding the 2000 census. The analysis gave an infant mortality rate of 72 deaths per 1000 for the period 1995-2000.

An examination of the infant mortality estimates over time clearly indicates that with the exception of the data for the period 1979/80, both the direct and indirect estimates of infant mortality show consistent declines over time (Table 9.4). While the direct estimates rates fell from a level of 126 deaths per 1000 live births to 57 deaths per 1000 live births between 1960 and 1998, the trend exhibited by the indirect estimates gave figures ranging from 150 deaths per 1000 live births in 1960 to 72 deaths per 1000 live births in 2000. The wide gap observed between the two sets of estimates reflects the failure of the North Model to represent the mortality experience in Ghana in particular and sub-Saharan Africa in general (Tesfay, 1996).

Nevertheless, in the absence of any country-specific model, the North Model represents the closest fitting model. Evidently, the direct and indirect methods of mortality estimation have their own limitations. The estimates presented for the different periods in Table 9.4 could thus be interpreted as representing the range within which the actual infant mortality rate for Ghana for that period falls. For the period 1994-1998, therefore, the infant mortality rate for Ghana is

estimated to have ranged from 57 to 73 deaths per 1000 live births. A critical examination of the data, however, suggests that the infant mortality rates obtained from the 1979/1980 GFS data may be lower than the actual rates prevailing at the time. The indirect estimates over time using all available data points from the various data sources are graphically presented in Figure 9.1.

**Figure 9.1: Indirect Estimation of Infant Mortality Rates, 1960-2000**



The graph clearly shows that with the exception of the data from the 1960 census, the infant mortality rates estimated for the periods, which are further into the past (and hence derived from reports of older women), show a declining trend. On the other hand, those referring to the most recent periods are usually biased upwards or downwards, reflecting inconsistencies in the reports of younger women (especially the 15-19 and 20-24 age groups). The graph further indicates that the estimates from the 2000 census data are generally much higher, particularly for the four most recent periods, and so do not conform strictly to the falling levels and trends displayed by the earlier data sets, an indication that the number of children ever born may have been under reported. Again, the 1979/80 GFS data show much lower than expected rates, which is a clear indication that the rate of mortality decline has stagnated, especially between the period 1985 and 2000. This is happening because of the fluctuations in the rates estimated for the youngest age groups from the 1998 GDHS and 2000 Census data sets. The general pattern has been that of a decline as is apparent in Table 9.4.

It is worth noting that death in infancy is not uniformly distributed across the entire age range but is generally heavily tilted towards the neonatal age group (i.e. children aged less than one month). The probabilities of dying between birth and the first month of life (neonatal mortality rates) and between exact age 1 month and age 11 months (postneonatal mortality rates) which

were computed from the 1993 and 1998 Demographic and Health Surveys are presented in Table 9.5.

**Table 9.5: Neonatal and Postneonatal Mortality Rates by Five-year Periods Preceding Survey**

Source	Period	Neonatal	Postneonatal	Infant
1993 GDHS	1974-1978	42.9	39.3	82.2
	1979-1983	46.9	29.2	76.1
	1984-1988	51.8	32.0	83.8
	1989-1993	40.9	25.6	66.4
1998 GDHS	1979-1983	44.5	35.0	78.5
	1984-1988	40.7	33.2	73.9
	1989-1993	35.1	30.7	65.8
	1994-1998	29.7	27.0	56.7

The data indicate that for all the periods shown, the majority of deaths to infants occur within the first month of life. However, the trend observed in the levels reported from the 1993 data set for the period 1979-1983 and 1984-1988 seem quite implausible. One would generally expect that these rates would decline with declining mortality. Estimates from the two data sets for overlapping periods are also expected to be comparable, but the results based on the 1993 GDHS data set indicate much higher neonatal rates for the periods 1979-1983 and 1984-1988 compared to the estimates from the 1998 GDHS data. These anomalies could be attributed to shifting of events and age misplacement. For the period 1979-1983, there could have been shifting of deaths from the post-neonatal period to the neonatal period in the 1993 GDHS.

Another possibility is that in the same survey, post-neonatal deaths for the period 1979-1983 data sets could have been reported as neonatal deaths for the period 1984-1993, resulting in the overestimation of the neonatal mortality rate for the period 1984-1988. Similarly, there was a slight underestimate of the neonatal mortality rate for the period 1974-1978 (42.9 deaths per 1000). This means that the reporting of neonatal and post-neonatal deaths may generally have been poor for the older women interviewed in the 1993 survey. Except for the discrepancies observed between the estimates presented from the two data sets for overlapping periods, the general trend is that the gap between neonatal mortality rates and post-neonatal mortality rates is gradually closing.

### **Child Mortality Rates**

The data shown in Table 9.6 provide information on the direct and indirect estimates of child mortality, defined as the probability of dying between exact ages 1 and 4 years. These rates are much lower than the infant mortality rates presented earlier. Quite contrary to expectation, the indirect estimate of child mortality from the 1988 DHS data is much lower than the direct estimate derived from the same data set. The results for 1993 and 1998, on the other hand, indicate a very close match between the estimates based on the two approaches.



**Table 9.6: Trends in Child Mortality Rates, 1960-2000**

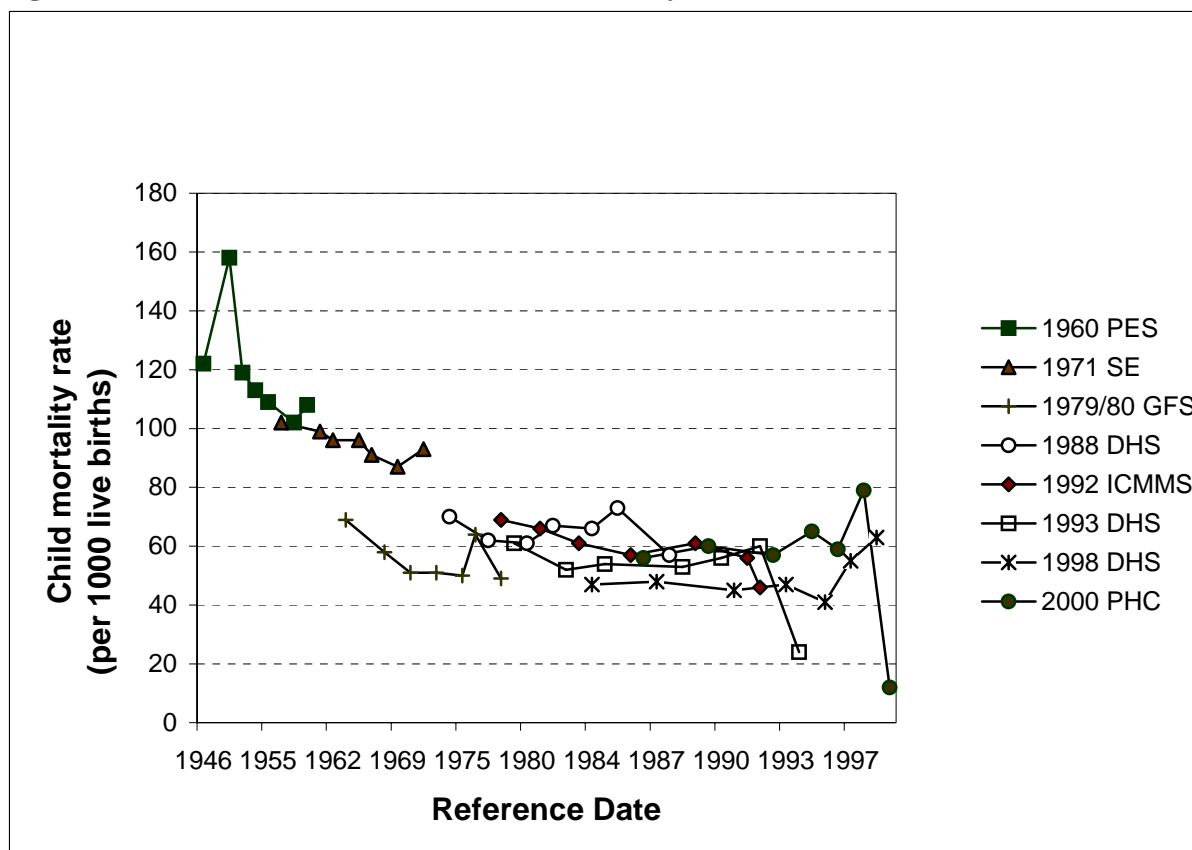
Source	Period	Direct estimates	Indirect estimates
		(Rate per 1000 live births)	(Rate per 1000 live births)
1960 PES	1956-1960	-	110
1971 SE	1967-1971	65	86
1979/80 GFS	1975-1979	-	53
1988 DHS	1983-1987	84	68
1992 ICMMS	1988-1992	-	57
1993 DHS	1989-1993	57	56
1998 DHS	1994-1998	54	51
Estimated <sup>a</sup>	1995-2000	-	44

<sup>a</sup> Estimated from the life table which corresponds to the extrapolated  $q_5$  value from all plausible  $q_5$  estimates for the period 1960-1998.

As was observed earlier for infant mortality, the indirect estimate of child mortality derived solely from the 2000 census data (59 deaths per 1000 live births) appeared to be an outlier compared to the estimates for the earlier periods. The mortality level arrived at using the common under-five mortality index yielded a child mortality rate of 44 deaths per 1000 live births for the period 1996-2000.

Looking at the distribution over time, child mortality rates appear to have been falling from a high of 110 deaths per 1000 live births in between 1956 and 1960 to a low of 44 deaths per 1000 live births in the period 1996-2000. The only exception is the drastic drop observed for the period 1975-1979. The trend exhibited by the indirect estimates is better illustrated in graphical form (Figure 9.2). The graph clearly shows that the curve for the 1979/80 GFS data is much lower than those exhibited by the estimates from the other data sets, suggesting underreporting of deaths in the GFS survey.

**Figure 9.2: Indirect Estimation of Child Mortality Rates, 1960-2000**



### Under-Five Mortality Rates

Table 9.7 shows the under-five mortality rates for the country since independence. Direct estimates for the five years prior to the interview are available for only three periods. Nevertheless, the trend exhibited by both the direct and indirect estimates of under-five mortality show a consistent decline. The most recent direct estimate of 108 deaths per 1000 live births pertains to the period 1994-1998. The indirect estimate for the same period was 117. This implies that the under-five mortality rate for Ghana for the period 1994-1998 was between 108 and 117 deaths per 1000 live births. The under-five mortality estimates presented in Table 9.7 indicate a close match between the direct and indirect estimates prepared from the 1988 DHS data set. The actual estimate of 141 deaths per 1000 live births obtained from the 2000 census data for the period 1995-2000 was far higher than those prepared for the earlier periods. A logistic regression function which provides the best fitting curve was therefore fitted to the most plausible  $q_5$  estimates obtained from the various data sets (Table 9.3). This procedure yielded an under-five mortality rate of 113.7 deaths per 1000 live births for the five-year period preceding the 2000 Census.

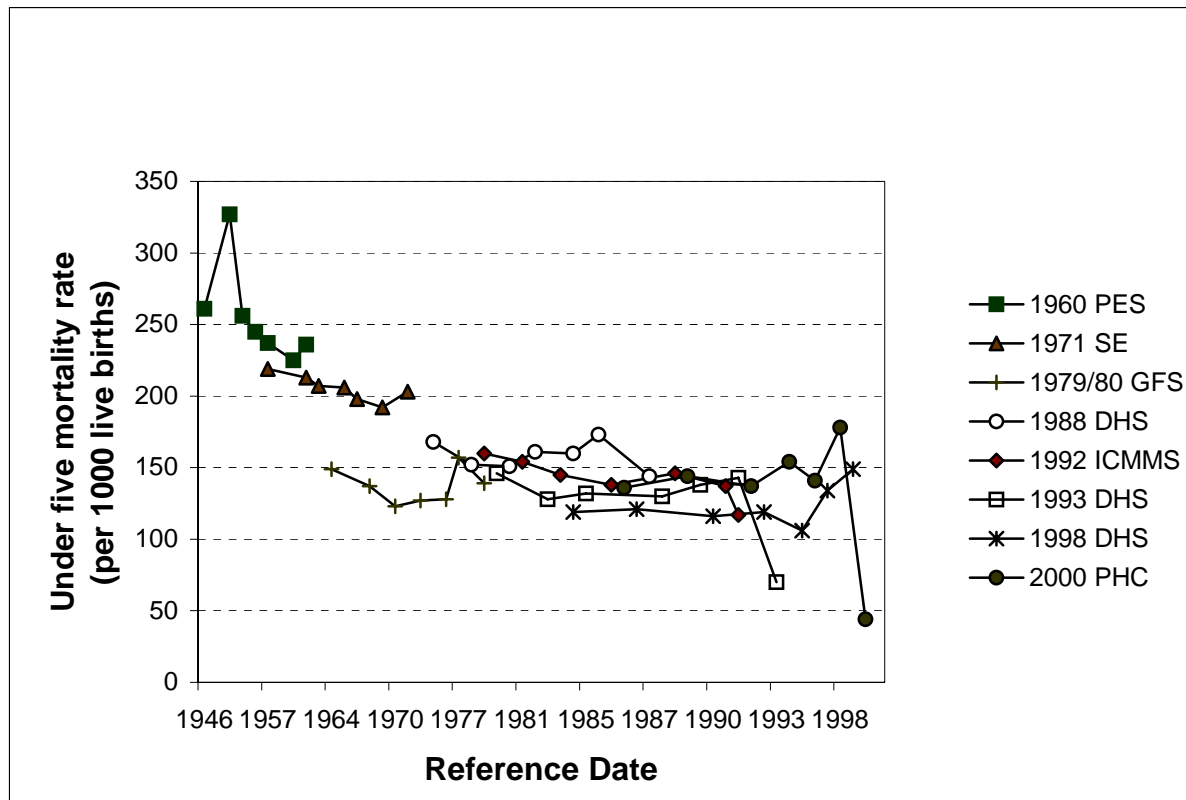
**Table 9.7: Trends in under-five mortality rates, 1960-2000**

Source	Period	Direct estimates (Rate per 1000 live births)	Indirect estimates (Rate per 1000 live births)
1960 PES	1956-1960	-	221
1971 SE	1967-1971	-	192
1979/80 GFS	1975-1979	-	121
1988 DHS	1983-1987	155	156
1992 ICMMS	1988-1992	-	137
1993 DHS	1989-1993	119	131
1998 DHS	1994-1998	108	117
Extrapolated <sup>a</sup>	1995-2000	-	114

<sup>a</sup> Extrapolated from all plausible *q5* estimates from surveys and censuses conducted during the period 1960-1998.

Figure 9.3 presents the trend in under-five mortality in a graphical form. It clearly shows a consistent downward movement in the level of under-five mortality. The significance of the Figure is that the general downward trend is discernible from all sources of data.

**Figure 9.3: Indirect Estimation of under Five Mortality Rates, 1960-2000**



### 9.3 Differentials in Infant and Child Mortality

Research conducted in several parts of the world have found significant variations in infant, child and under-five mortality rates. Such variations, however, are dependent on the physical, social, economic and political environment within which the child is located. This section investigates childhood mortality differentials in Ghana. Factors considered include the sex and birth order of the child, the length of the preceding birth interval and type of birth, mother's age, locality and region of residence, education, marital status, type of marriage, employment status and occupation.

## **Locality of Residence**

Differential mortality in childhood has generally been observed among rural and urban residents as a result of differences in living conditions and behavioural patterns. Since in the 2000 census no questions were asked on deaths in the last 12 months, indirect estimates of infant, child and under five mortality rates for the five-year period preceding the 2000 census have been presented in Table 9.8 according to locality of residence. These estimates were based on the extrapolation of the q5 estimates from the 1988, 1993 and 1998 DHS data sets. The Table shows that the under-five mortality rate for rural children is about one and a half times that for urban children. Infant mortality, on the other hand, is about 61 per cent higher among rural children compared to urban children.

**Table 9.8: Infant, Child and Under-Five Mortality Rates (5-year period before 2000) by Locality of Residence**

Place of Residence	Infant Mortality Rate	Child Mortality Rate	Under-five Mortality Rate
Urban	49.8	25.1	79.7
Rural	80.0	51.6	117.2
Ghana	72.0	44.3	113.7

Cross tabulations of births by survival status based on the birth history data from the 1998 GDHS have also been used to provide an indication of the significant determinants of early childhood mortality. Table 9.9 presents the proportion of deaths to infants and children aged less than five years by locality of residence. The analysis is based on births, which occurred 10 years prior to the survey. All births with incomplete exposure to the risk of infant or under-five deaths were excluded from the analysis. Chi-squared tests have been performed based on the distribution of births classified by survival status and various background characteristics to identify the important risk factors. Variables, which were significant at the 95% and 99% confidence levels are indicated with asterisks (\*).

Similar to what was observed earlier, the data presented in Table 9.9 indicate that the child mortality experience of rural women is more than 1.5 times that of women who reside in urban localities. This could be a reflection of the poor living conditions existing in rural areas as well as the lack of access to health services. The Ghana Living Standards Survey conducted in 1998/1999 suggests that the incidence of poverty is much higher in rural areas than in urban areas. Whereas only 12 per cent of urban residents are below the poverty line, more than a third (34%) of rural households falls in this category. The implication here is that besides other socio-cultural characteristics, which could have adverse impact on child survival, the rural population is less likely to meet its basic needs than the urban population.

**Table 9.9: Deaths to Infants and Children (less than 5 years) by Locality of Residence, 1998**

Place of Residence	Infant deaths (per 1000 live births)***	Under-five deaths (per 1000 live births)***
Urban	43	76
Rural	67	127
Total	61	114

Notes: (1) Based on children born 10 years prior to the survey. (2) \*\*\*=P<0.01

## **Region of Residence**

Region of residence is used to examine the influence of a mother's geographic location on infant and under-five mortality. Table 9.10 presents the indirect estimates of childhood mortality rates for the five years preceding the 2000 census based on the q5 estimates from the 1988, 1993 and 1998 data sets. Published information on mean parity and mean surviving children were unavailable for the earlier periods and so these could not be included in the extrapolation of the regional estimates for 2000.

As Table 9.10 shows, the incidence of deaths to children aged less than five years old ranges from 65 per 1000 in Greater Accra and Ashanti to 162.1 deaths per 1000 live births in Northern. Northern, Upper East, Upper West, Central and Volta have under-five mortality rates of more than 100 deaths per 1000 live births.

**Table 9.10: Infant, Child and Under-Five Mortality Rates (5-year period before 2000) by Region**

Region of Residence	Infant Mortality Rate	Child Mortality Rate	Under-five Mortality Rate
Western	70.1	42.6	108.9
Central	79.0	50.7	125.5
Greater Accra	45.1	21.6	65.4
Volta	73.0	45.1	114.6
Eastern	56.7	31.2	85.6
Ashanti	45.1	21.6	64.9
Brong Ahafo	61.4	35.1	93.9
Northern	99.0	70.1	162.1
Upper East	96.8	67.9	158.6
Upper West	87.3	58.4	140.9
Ghana	72.0	44.3	113.7

Table 9.11 shows the regional variations in childhood mortality using data from the 1998 GDHS. The results indicate that children in Greater Accra (63%) experience the lowest risk of under-five mortality while the highest risk is observed among children living in Northern and Upper East (163%). With respect to infant mortality, Ashanti (39%) and Greater Accra (45%) exhibit the lowest risks. In contrast, the risk of infant deaths is highest for Central (85%), followed by Upper East (84%) and Brong Ahafo (79%). These noted differentials in both infant and under-five mortality suggest a very strong association between the region of residence and early childhood death.

**Table 9.11: Deaths to Infants and Children (less than 5 years) by Region of Residence, 1998**

Region of Residence	Infant deaths (Per 1000 live births)***	Under-five deaths (Per 1000 live births)***
Western	68	111
Central	85	141
Greater Accra	45	63
Volta	52	123
Eastern	50	91
Ashanti	39	73
Brong Ahafo	79	137
Northern	66	163
Upper East	84	163
Upper West	64	155
Total	61	114

Note: Based on children born 10 years prior to the survey

\*\*\*=P<0.01

The child survival advantage demonstrated by Ashanti and Greater Accra over others is a reflection of the relatively more favourable socio-economic conditions in these regions. Available data indicate that the incidence of poverty for the period 1998/1999 ranges from 5 per cent in Greater Accra to 88 per cent in Upper East (Ghana Statistical Service, 2000). Even though poverty is mostly concentrated in the northern sector of the country, there are some sections in the southern sector, which also recorded significant levels. For example, while 84 per cent of households in Upper West fall below the poverty line (the second highest after Upper East), Northern (69%), Central (48%) and Eastern (44%) followed in that order. Thus, households in Greater Accra may have better access to health care services, potable water systems and good nutrition compared to others. This implies that the observed regional differentials in infant and under-five mortality may disappear if these economic disparities are minimized.

### **Sex of Child**

A number of studies have shown that the biological attributes of the child (including the sex, birth order, type of birth - whether single or multiple, and the length of the preceding birth interval) have significant influence on the child's survival chances. Sex differences, however, vary greatly among countries depending on the socio-cultural environment. The bivariate distribution of both infant and under-five deaths by sex using the 1998 GDHS data indicates that, as expected, males have a slightly higher mortality compared to females (Table 9.12). The differential is, however, not statistically significant.

**Table 9.12: Deaths to Infants and Children (less than 5 years) by Sex of Child, 1998**

Sex of Child	Infant deaths (per 1000 live births)	Under-five deaths (per 1000 live births)
Male	65	118
Female	57	110
Total	61	114

Note: Based on children born 10 years prior to the survey

### **Birth Order of Child**

The distribution of infant deaths by birth order follows the expected U-shaped pattern, where infant deaths are higher for first and very high order births and low for the intermediate ones. Table 9.13 indicates that first order births and 7<sup>th</sup> or higher order births have comparatively higher mortality but the observed differences among the different orders are not significant. In terms of under-five mortality, there seems to be a consistent increase in the number of deaths per 1000 births but as was noted for infants, the variations are not statistically significant.

**Table 9.13: Deaths to Infants and Children (less than 5 years) by Birth Order of Child, 1998**

Birth Order of Child	Infant deaths (per 1000 live births)	Under-five deaths (per 1000 live births)
1	65	104
2-3	62	110
4-6	54	120
7+	66	128
Total	61	114

Note: Based on children born 10 years prior to the survey

### **Type of Birth**

Studies conducted around the world indicate higher risks of death for children from multiple births compared to those from single births (Pison *et al.*, 1989; Sullivan *et al.*, 1994). These differentials are mainly ascribed to antenatal and postnatal complications, low birth weight, competition for time and material resources (Sullivan *et al.*, 1994).

Table 9.14 shows that the risk of dying during childhood is significantly higher for children from multiple births than for children from single births. These figures must, however, be interpreted with caution, since the rather significant observed differentials may be largely attributable to sampling errors, as a result of the estimates being based on small sample sizes.

**Table 9.14: Deaths to Infants and Children (less than 5 years) by Type of Birth, 1998**

Type of Birth	Infant deaths (per 1000 live births)***	Under-five deaths (per 1000 live births)***
Single	53	105
Multiple	(270)	(369)
Total	61	114

Notes: Based on children born 10 years prior to the survey

\*\*\*=P<0.01;

The figures in brackets are based on less than 200 cases.

### **Preceding Birth Interval**

Table 9.15 suggests that there is a strong negative relationship between length of preceding birth interval and childhood mortality. A child with preceding birth interval of less than two years is twice as likely to die in infancy as those with intervals of 2-3 years. The survival gains are even much higher for children with intervals of four years or longer. These results closely match what is reported in the literature. Typically, short birth intervals result in considerably high mortality risks due to inadequate time allowed for a mother to recover from the biological and nutritional stress of the previous birth, which could adversely affect the development of the unborn child.

**Table 9.15:Deaths to Infants and Children (less than 5 years) by Length of Preceding Birth Interval, 1998**

Preceding Birth Interval	Infant deaths (per 1000 live births)***	Under-five deaths (per 1000 live births)***
<2 years	109	167
2-3 years	54	114
4 years or more	31	66
Total	61	114

Notes: Based on children born 10 years prior to the survey

\*\*\*=P<0.01

### **Age of Mother at Birth of Child**

Generally, a mother's age at the birth of a child bears a curvilinear relationship to childhood mortality because of the biological and social immaturity of very young mothers and the heightened risk of delivery complications associated with older mothers. The data presented in Table 9.16 follows this pattern, with children born to women aged less than 20 years experiencing a comparatively higher mortality. However, the observed differences attributable to maternal age are not statistically significant.

**Table 9.16: Deaths to Infants and Children (less than 5 years) by Age of Mother at Birth of Child, 1998**

Age of Mother at Birth of Child	Infant deaths (per 1000 live births)	Under-five deaths (per 1000 live births)
<20 years	71	123
20-29 years	58	111
30+ years	60	115
Total	61	114

Note: Based on children born 10 years prior to the survey

### **Level of Education**

Education is generally seen as a determinant of a household's wealth and purchasing power and consequently access to better nutrition and health care. Education also exerts an independent influence on a child's risk of death because of its positive impact on behavioural attitudes connected with childcare (Caldwell and Caldwell, 1993). Table 9.17 indicates that a mother's level of education is inversely related to child mortality risks. This strong association is true for both age segments (that is, infancy and under-five). The observed association between education and mortality risks is stronger for under-fives than infants.

**Table 9.17: Deaths to Infants and Children (less than 5 years) by Mother's Level of Education, 1998**

Mother's Level of Education	Infant deaths (per 1000 live births)**	Under-five deaths (per 1000 live births)***
None	67	134
Primary	70	116
Middle/JSS or higher	50	90
Total	61	114

Notes: Based on children born 10 years prior to the survey

\*\*\*=P<0.01

\*\*=P<0.05

### **Marital Status**

Generally, married women are known to experience lower infant and child mortality risks than those not in union due to the mutual protection and care given by the partners (Benjamin and Pollard, 1993). For this analysis, the respondents were categorized into two marital groups: women who are currently in union and those who are currently not in union. The latter category includes the never married, widowed, divorced and those who are not in a consensual union. As observed in Table 9.18, even though women who are currently in union experience lower infant and under-five mortality risks, the differences noted are not significant.

**Table 9.18: Deaths to Infants and Children (less than 5 years) by Mother's Marital Status, 1998**

Mother's Marital Status	Infant deaths (per 1000 live births)	Under-five deaths (per 1000 live births)
Currently in union	59	112
Currently not in union	71	132
Total	61	114

Note: Based on children born 10 years prior to the survey

An attempt was also made to study the relationship between the type of marriage and infant and under-five mortality. There are two views regarding the role of polygamy in child survival. Some researchers see the practice as being beneficial to child survival due to its positive effect on birth intervals (Amankwaa, 1996) while others suggest that the risk is higher for women in polygamous unions compared to those in monogamous unions due perhaps to inadequate support from partners (UN, 1988). The results presented in Table 9.19 show that women in monogamous unions experience comparatively lower child mortality risks than those in polygamous unions. These differentials are only significant at the 90% confidence level.



**Table 9.19: Deaths to Infants and Children (less than 5 years) by type of Marital Union, 1998**

Type of Marital Union	Infant deaths (per 1000 live births)*	Under-five deaths (per 1000 live births)*
Monogamous Union	56	99
Polygamous Union	70	146
Total	61	114

Notes: Based on children born 10 years prior to the survey

\*=P<0.10

### Employment Status

A mother's employment status appears to be important only with regard to infant mortality (Table 9.20). The Table indicates that women in unpaid work have the lowest infant mortality risks while those in paid employment experience the highest risk. These results must, however, be interpreted with caution. The reason is that unpaid work is mostly associated with agricultural or trading activities, which may afford women involved in such work adequate time to feed and care for their infants.

**Table 9.20: Deaths to Infants and Children (less than 5 years) by Mother's Employment Status, 1998**

Mother's Employment Status	Infant deaths (per 1000 live births)**	Under-five deaths (per 1000 live births)
Not Employed	77	120
Paid Employee	84	147
Self-employed	54	109
Unpaid Work	49	133
Not Stated	67	103
Total	61	114

Notes: Based on children born 10 years prior to the survey

\*\*=P<0.05

### Occupation

In terms of occupation, Table 9.21 indicates that there are no significant differentials in infant mortality; marginal occupational differences, however, are noted for under-five mortality. While women in agricultural occupations experienced the highest mortality risks, those in the professional, technical, managerial, clerical, sales and service occupations experience the lowest risk of under-five deaths. Occupation has often been used as a measure of a persons socio-economic status and research has shown that children of highly skilled workers may have better nutrition as well as greater access to health care because of the close relationship between occupation and earnings.

**Table 9.21: Deaths to Infants and Children (less than 5 years) by Mother's Occupation, 1998**

Mother's Occupation	Infant deaths (per 1000 live birth)	Under-five deaths (per 1000 live births)*
Unemployed	78	120
Prof/Tech/Manager/Clerical/Sales/Service	59	96
Agric Self-employed	61	129
Skilled Manual	51	121
Total	61	114

\*=P<0.10

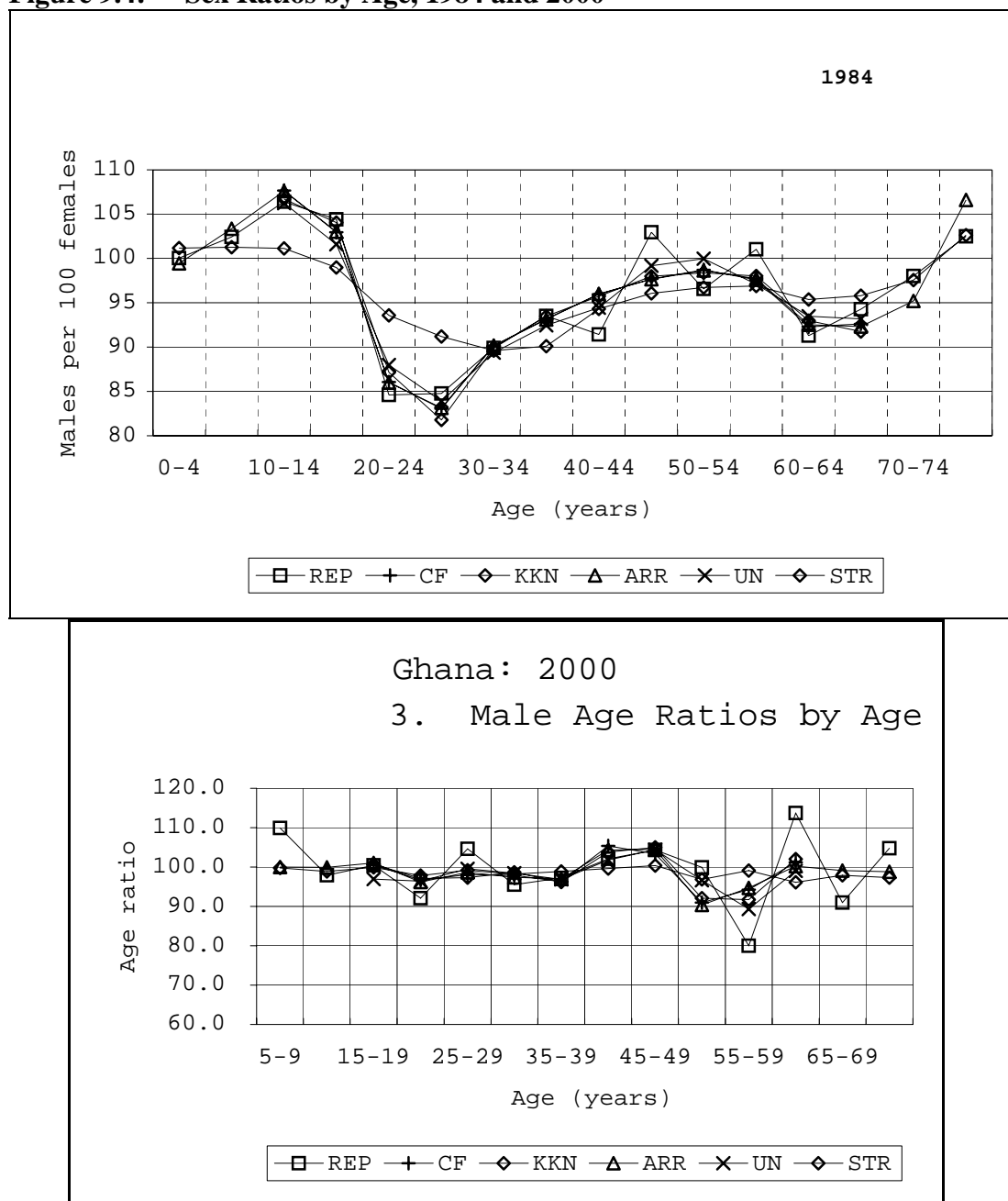
## 9.4 Adult Mortality

For the estimation of adult mortality indices, an attempt was made to apply the Preston-Bennett technique to the census age structures for 1984 and 2000. This method uses the population age

distributions from the 1984 and 2000 censuses to estimate the level of life expectancy at older ages. The enumerated population in each age group and the average annual intercensal growth rate are first used to estimate the cumulative number of years lived by the population and the number of persons at exact age  $x$ . Life expectancies for exact ages five years and above are then calculated from these estimates. The method assumes that completeness of enumeration and possible age misreporting are the same in the two censuses and that international migration is negligible.

An evaluation of the data, however, showed that the age structures observed in the two censuses were very much affected by emigration, particularly of males in the age groups 20-39, as demonstrated by the reported sex ratios in Figures 9.4. The deficits observed for the male population aged 60-64 and 65-69 years may be a combination of differential mortality of males and misreporting errors. The other curves represent the sex ratios calculated on the basis of the adjusted age-sex distributions using different smoothing techniques, such as the Carrier-Farrag method (CF), the Karup-King-Newton formula (KKN), the Arriaga method (ARR), the United Nations technique (UN), and the Strong smoothing formula (STR) which basically involves smoothing the population by ten year age groups and then subdividing into five year age groups.

**Figure 9.4: Sex Ratios by Age, 1984 and 2000**



As a result of the out-migration of males noted among the 20-39 age groups, the Preston-Bennett method could not be applied to the 1984 and 2000 census data. Declining mortality and fertility also prevented the application of stable population theory. To get around this problem, one of the common childhood mortality indices was used to determine the level of mortality for the country. As mentioned earlier, under-five mortality rates are less affected by the selected age pattern of mortality. Consequently, the interpolated figure of 113.7 served as an entry parameter into the North Family of the Coale-Demeny model life tables to determine the general mortality indices for Ghana.

Based on a sex ratio at birth of 103 males per 100 females, the computations yielded a mortality level of 17.1 and an expectation of life at birth of 56.6 for males, 60.3 for females, and 58.4 for both sexes for the five-year period preceding the 2000 census (i.e. 1995-2000). Table 9.22

presents the expectation of life corresponding to each age and sex at this mortality level. These figures are slightly lower than the values derived from the mortality level implied by the 1998 DHS under-five mortality rate of 108. This latter estimate, which corresponds to level 17.6 of the north model life table, gives life expectancies of 57.8 for males, 61.5 for females and 59.6 for both sexes.

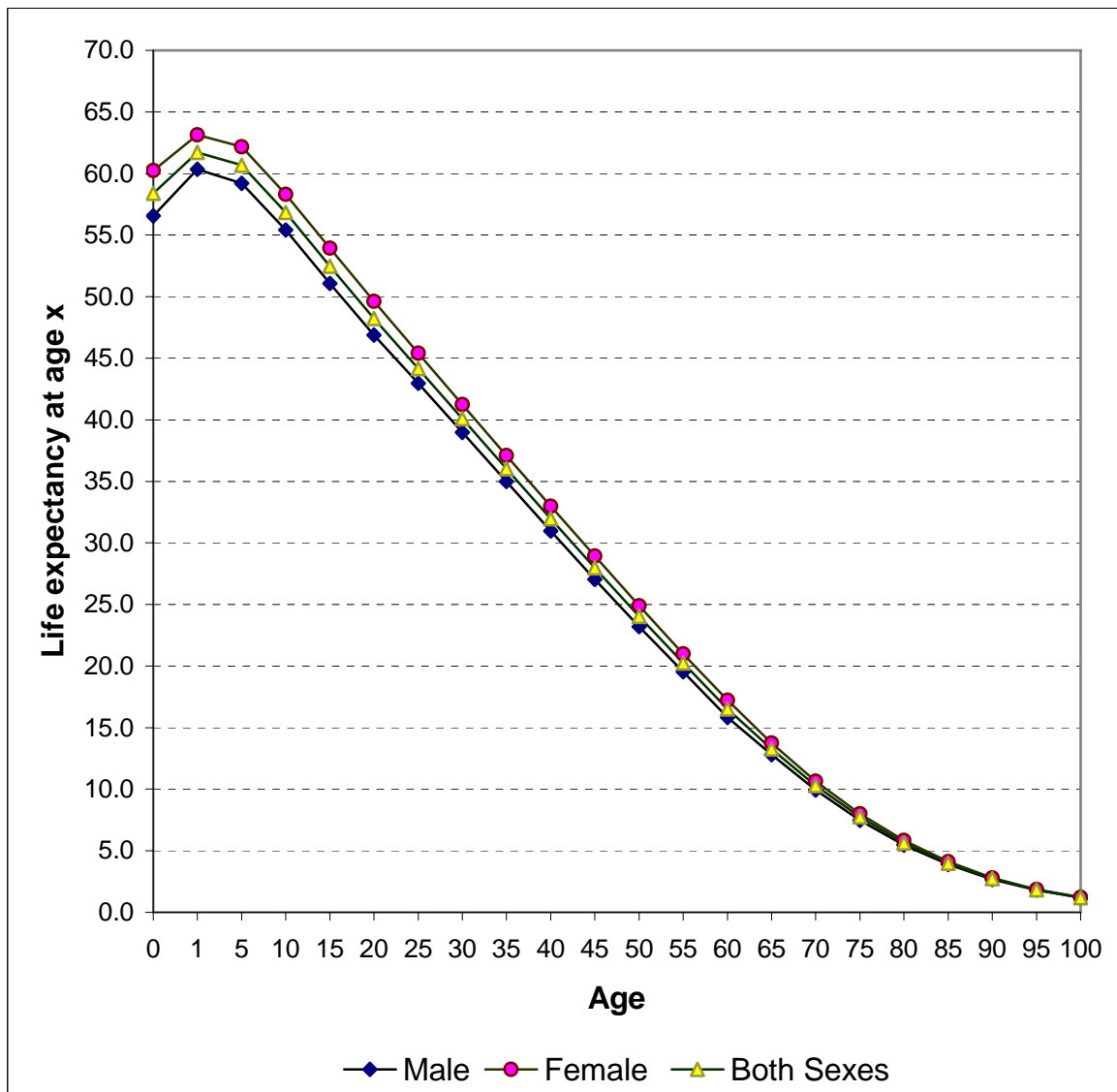
The derivation of current adult mortality indices for the country was based on level 17.1 of the North Model life table, which corresponds to the period 1995-2000. One measure of adult mortality, which is  ${}_{45}q_{15}$ , is estimated to be 269.4 deaths per 1000 population for the same period. For the year 2000, the level of mortality was estimated to be 18.5, with a life expectancy at birth of 59.5 for males, 63.8 for females and 61.6 for both sexes.

**Table 9.22: Expectation of Life by Age and Sex –1995-2000**

Age x	Life Expectancy at Age x		
	Male	Female	Both Sexes
0	56.6	60.3	58.4
1	60.4	63.1	61.7
5	59.2	62.2	60.7
10	55.4	58.3	56.8
15	51.1	53.9	52.5
20	46.9	49.6	48.2
25	43.0	45.4	44.2
30	39.0	41.2	40.1
35	35.0	37.1	36.0
40	31.0	33.0	32.0
45	27.0	28.9	28.0
50	23.2	24.9	24.0
55	19.5	21.0	20.3
60	15.8	17.2	16.5
65	12.8	13.7	13.3
70	9.9	10.7	10.3
75	7.5	8.0	7.7
80	5.5	5.8	5.7
85	3.9	4.1	4.0
90	2.7	2.8	2.7
95	1.8	1.9	1.8
100	1.2	1.2	1.2

These life expectancies are also presented in Figure 9.5 to show the sex differences in the pattern of mortality by age. That the expectation of life is highest at age one for both sexes rather than zero is to indicate that life before age one is very critical. Thereafter, declines are the result of aging.

**Figure 9.5: Life Expectancy by Age and Sex, 1995-2000**



The

expectations of life at birth for the various periods based on the indirect estimates of  $q_5$  during the five-year period preceding each survey or census are also displayed in Table 9.23. The data show that life expectancy in Ghana has increased from about 46 years between 1956 and 1960 to 58 years during the period 1995-2000. For males, the average life expectancy improved from 44 to 57 years and for females the figures increased from 47 years to 60 years. The mortality level estimated from the 1979/1980 GFS is much higher than expected and confirms the belief that underreporting of deaths may have been quite severe in that survey.

**Table 9.23: Selected Mortality Indices Based on Estimate of  $q(5)$ , 1956-2000**

Source	Period	Level of Mortality (North Model)	Expectation of life at birth ( $e_0^0$ )		
			Male	Female	Both Sexes
1960 PES	1956-1960	11.8	43.7	47.3	45.5

1971 SE	1967-1971	13.1	46.9	50.3	48.6
1979/80 GFS	1975-1979	16.6	55.3	59.0	57.1
1988 DHS	1983-1987	14.8	51.0	54.5	52.7
1992 ICMMS	1988-1992	15.8	53.4	57.0	55.2
1993 DHS	1989-1993	16.1	54.1	57.8	55.9
1998 DHS	1994-1998	16.8	56.1	59.8	57.9
Estimated <sup>a</sup>	1995-2000	17.1	56.6	60.3	58.4

<sup>a</sup> Estimates are based on the extrapolated  $q_5$  value from all plausible  $q_5$  estimates from censuses and surveys conducted during the period 1960-1998.

Selected mortality indices for the period 1995-2000 have also been presented in Table 9.24 and Table 9.25 by locality and region of residence. Table 9.24 indicates that the expectation of life at birth is five and a half years more for urban residents (63.4 years) than for rural residents (57.9 years).

**Table 9.24 Selected Mortality Indices by Locality of Residence**

Locality of Residence	Level of mortality (North Model)	Expectation of life at birth ( $e_0^0$ )		
		Male	Female	Both Sexes
Urban	19.1	61.6	65.3	63.4
Rural	16.9	56.1	59.8	57.9
Ghana	17.1	56.6	60.3	58.5

Table 9.25 presents the selected mortality indices by region of residence. The data indicate that residents in Greater Accra and Ashanti have the best survival prospects compared to residents in other regions. On the other hand, Northern, Upper East and Upper West have the worst mortality indices. The expectation of life at birth, for example, was 65.6 years for both Greater Accra and Ashanti while it was far lower for Northern (51.9 years) and Upper East (52.4 years).

**Table 9.25 Selected Mortality Indices by Region of Residence**

Region of Residence	Level of mortality (North Model)	Expectation of life at birth ( $e_0^0$ )		
		Male	Female	Both Sexes
Western	17.3	57.1	60.8	58.9
Central	16.4	54.8	58.5	56.6
Greater Accra	20.0	63.8	67.5	65.6
Volta	17.0	56.3	60.0	58.1
Eastern	18.7	60.6	64.3	62.4
Ashanti	20.0	63.8	67.5	65.6
Brong Ahafo	18.2	59.3	63.0	61.2
Northern	14.5	50.2	53.7	51.9
Upper East	14.7	50.6	54.2	52.4
Upper West	15.6	52.8	56.4	54.6
Ghana	17.1	56.6	60.3	58.5

## 9.5 Summary and Conclusion

This chapter has assessed the levels, trends and determinants of infant and child mortality. It has also provided some indication of adult mortality in the country. Due to data deficiencies, the probabilities of dying in childhood were estimated from censuses and surveys prior to the 2000 Population and Housing Census using the Trussell variant of the Brass technique. The estimates

obtained were then extrapolated to the year 2000 using regression procedures to provide current estimates of mortality indices for the country.

The results indicate that for the period 1995-2000, the rate of infant mortality is 72 per 1000 live births and that of under-five mortality is 113.7 per 1000 live births. The estimates for the period 1994-1998 were slightly higher (73 and 117 deaths per 1000 live births). The *q5* estimate, which is the most stable of the childhood mortality indices, was used to determine the level of mortality for Ghana. This corresponds to level 17.1 of the north family of the Coale and Demeny regional model life tables (1966, 1983). The matching expectation of life at birth is 56.6 years for males, 60.3 for females and 58.4 for both sexes. The estimated level of mortality was also used to compute the expectation of life at ages five years and older for the population. The results, for instance, show that persons who attain the age of 15 are expected to live for 52.5 more years while those who reach age 60 expect to live for 16.5 more years. The findings further suggest that the expectation of life at birth for females has improved from 47.3 years for the period 1956-1960 to 60.3 years in the period 1995-2000. The corresponding estimates for males are 43.7 years and 56.6 years respectively. In terms of rural/urban place of residence, people who live in urban localities have an average life expectancy of 63.4 years compared to an average of 57.9 years for rural residents.

Investigations into the determinants of infant and under-five mortality indicate that significant linkages are observed between the risk of death to infants and under-fives and socio-economic factors. At the 95% confidence level, the variables that are found to be significantly associated with infant mortality include the type of birth (whether single or multiple), the length of the preceding birth interval, the mother's place and region of residence, level of education, and employment status. All the variables, except employment status, were equally significant determinants of under-five mortality. These associations do not take account of the effect of confounding variables. In order to identify the independent predictors of infant and under-five mortality, more in-depth analysis will be required. Nonetheless, some important issues have emerged from the analysis.

Even though the identified biological and socio-economic factors do not present a complete picture of the major underlying causes of childhood mortality in this country, the observed differentials could form the basis of policy formulation. For example, the positive association between child survival chances and the length of a child's preceding birth interval is a clear pointer to the need for intensive educational campaigns on the importance of birth spacing and the need to adopt a method of family planning. This will not only help people to have the children they can conveniently cater for but also it will improve the survival chances of children who are born at least three years after a preceding sibling.

The concerns expressed about the side effects of some modern family planning methods could be nullified if women are made aware of the whole range of methods that can be used to space births and emphasis is placed on the fact that modern methods are not the only means for spacing births. Educating women on the proper application of the rhythm method can go a long way to reduce childhood deaths. Providers of modern methods should also ensure the regular provision of contraceptive supplies and essential equipment required for providing family planning services. Furthermore, a reduction in the number of deaths to children from multiple births can be achieved through the adoption of proper antenatal and delivery care by pregnant women, as well as adequate postnatal assessment and care of the live births resulting from these pregnancies.

With regard to the locality and region of residence, it is recommended that in order to minimize the observed disparities in childhood mortality risks, there should be equitable income distribution as well as increased enrolment in schools. Previously, the regions with high mortality levels were Northern, Upper East, Upper West and Central. Brong Ahafo is now emerging as a region with similar adverse mortality conditions. It needs repeating the need to reverse the rural-urban drift and the migration of the youth from the northern regions to the southern sector by establishing development projects in these areas. The job opportunities that would be created by these projects may be one of the ways of ensuring household economic security and consequently improved access to health care, better housing, and proper nutrition.

The seasonal dietary deficiencies in the northern regions may also hinder the attainment of good health, a situation which is made worse during periods of illness. Due to the dry climatic condition, which is experienced for most part of the year by the three northern regions, the proper nourishment of children may be difficult to achieve because of the unavailability of certain essential nutrients during certain periods of the year. Combined with the high illiteracy rates, the provision of well-balanced diets for under-fives may only be a reality for few children. Despite the seasonality of many food crops, the northern sector produces a number of cereals, legumes and other food crops whose nutrient contents could provide the essential nourishment for children when combined in the right proportions. This would, however, require nutrition education and possibly seasonal supply of vitamin supplements for children in these areas. Such support should be extended to the vulnerable regions of Central and Brong Ahafo, which also have relatively high childhood mortality rates. Finally, attention should be focused on educating the general public on adopting habits that would help reduce environmental contamination, which is one of the major causes of malaria, upper respiratory infections and diarrhoea, known to be major childhood killers in the country.

Compared to other countries, Ghana's expectation of life at birth is quite low. For example, even though it may be comparable to what pertains in other West African countries, Ghana's life expectancy of 58.4 years is far below the 70 years and more in some African countries such as Tunisia, Seychelles, and South Africa. In order to enhance the survival chances of Ghanaians, the living standards of the population should be improved by increasing general access to education, providing occupational skills, expanding job opportunities, and improving and expanding social infrastructure. Recognizing that the problem is of a multi-faceted nature, attempts should be made to coordinate the efforts of both national and international institutions at the community, regional and national levels to ensure that maximum benefits are derived from programmes that are implemented to achieve this goal.



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## CHAPTER 10: GHANA POPULATION PROSPECTS, 2000-2025

### 10.1 Introduction

Ghana's population has a high potential inherent in the age structure with a subsequent rapid expansion of the population well into the 21<sup>st</sup> century. A decline of fertility to the replacement level in such a population is usually accompanied by an ultimate population increase of two-thirds before growth ceases. The total fertility rate is not expected to reach replacement level before 2050. The implications of the population expansion for development are momentous. The assessment of the future population of the country is therefore intended to unearth the demographic realities that reflect the development challenges facing the country.

### 10.2 Estimates Based on Historical Profiles and Projections.

Fertility and mortality levels and trends are basic information needed for planning for the future. They also constitute a map of their demographic history and they may therefore be considered as a view of the past. Comparison of the historical fertility and mortality rates assists in the analysis of data consistency as well as derivation of plausible population estimates for further research and policy analysis. The pieces of data collected in censuses and surveys over the past four decades were put together to map the historical trends of fertility and mortality. The estimated trends were then used in determining the growth of the population of Ghana.

### 10.3 Sources, Assumptions and Methods

The adjusted age and sex distribution and the recorded total population of Ghana in 2000 have been used in deriving the base population for the projections. Estimates of the population of Ghana Origin (i.e., Ghanaians) suggest a shortfall of between four and five per cent in the 2000 census count. This may be explained, in part, by emigration but lack of information on international migration has not made it possible to assess the contributions of the two major factors (undercount and emigration). The base population was not, therefore, adjusted for any possible coverage errors. The United Nations method of growth rate difference was employed in projecting urban and rural projections.

#### **Assumptions on the Future of Fertility**

The 1998 demographic and health survey (DHS) data and 2000 census data yield a total fertility ranging from 3.8 (census data) to 4.55 (DHS data based on births in 1-59 months preceding the survey) and 4.60 (DHS data based on births in the past twelve months). Adjustment of the observed census figure for possible underreporting of births raised it to more than five children per woman; this estimate appears to be on the high side.

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This chapter has been contributed by Prof. S.K. Gaisie

As regards the survey data, a slight adjustment for displacement of birth dates raised the observed total fertility rate from 4.602 (based on births in the past twelve months) to 4.68 and

from 4.550 (based on births in 1-59 months preceding the survey) to 4.65. Other estimation procedures yielded a total fertility rate of between 4.7 and 4.8. These estimates indicate that the level of the prevailing fertility by the end of the century lay between 4.6 and 4.8 children per woman. With the observed rates given as 4.5-4.6 and the estimated ranging between 4.6 and 4.8, it seemed plausible to use 4.7 as the rate in generating population projections. This estimate, together with experiences of countries that have moved or are moving through the fertility transition as well as knowledge of the fundamental principles in population dynamics during the century provided the guidance and the basis of the fertility assumptions.

### **High Fertility Assumption**

*The fertility level estimated for 1995-2000 will decline to 4.4 by 2005 and then remain constant throughout the remainder of the projection years (High Variant).*

The assumption is based on the consideration of the following: past fertility trends; evidence of slowdowns of the rate of decline during the movement through the transition (e.g. in Tunisia, Egypt, Argentina and Uruguay); low levels of contraceptive prevalence that cast doubt on the continual fertility decline and the ability of the postpartum infecundability variables (i.e. postpartum abstinence, amenorrhoea, breastfeeding and foetal loss- natural or induced) to withhold the momentum of the decline for long; nature and the extent of the impact of the implementation of the population policy and programmes on the targeted beneficiaries; stabilization of the ideal mean number of children: dropping from 6.1 in the early and mid-1980s to 5.3 in the late 1980s and then to 4.4. in 1993 and 4.3 in 1998.

### **Medium Fertility Assumption**

*The estimated level of fertility for 1995-2000 will reach replacement level by 2050 (Medium Variant). Replacement-level fertility is defined as a total fertility rate (TFR) of 2.1 children per woman, which includes extra one-tenth of a child to make up for mortality of children and women who will not survive to the end of the reproductive years.*

### **Low-Fertility Assumption**

*The pace of the fertility decline as indicated by the observed or recorded fertility rates since the 1990s will continue throughout the projection years (Low Variant).*

Calculation of future births was based on the estimated and projected total fertility rates and on the age structure of fertility for 1998. The estimated total fertility values used in the projections are shown in Table 10.1.

**Total 10.1 Fertility Values Used in the Projections, 2000-2025**

<b>Period (Years)</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
1995-2000	4.7	4.7	4.7
2000-2005	4.4	4.4	4.4
2005-2010	4.4	4.1	3.7
2010-2015	4.4	3.5	3.1
2015-2020	4.4	3.5	2.7
2020-2025	4.4	3.3	2.2

### **Assumptions on Future Mortality Trends**

If mortality has been changing, information on the proportion of children dead can yield not only estimates of child mortality but also estimates of its trends. In fact, the power of Brass' method for estimating childhood mortality increases when it is applied to several data sets referring to the same population. Estimates covering overlapping periods provide a powerful tool for checking their consistency and selecting those less likely to be affected by extraneous biases.

The most reliable estimates of childhood mortality produced by the Brass method usually refer to a period between three and ten years preceding the interview. Under-five mortality  $q(5)$  was selected for the determination of the mortality trends because it is particularly sensitive to the mortality patterns underlying the different models. It has been demonstrated that no matter which mortality model is chosen to apply the Brass method, the errors that are likely to affect resulting estimates of  $q(5)$  are likely to be smaller in both absolute and relative terms than those affecting  $q(1)$  or  $q(2)$ . This underscores the robustness of  $q(5)$  as an indicator of mortality in childhood when it is estimated by the Brass method, because the estimate is not severely affected by deviations from assumptions on which it is based.

The most striking feature of the estimated  $q(5)$  values is the declining trend they display and although the estimates display considerable inconsistency one can infer from them the likely trend that mortality in childhood has followed through time. The power of Brass' method is substantially enhanced when it is applied to several data sets as in this analysis. The independent estimates covering overlapping periods allow the analyst to check their consistency and select those less likely to be distorted by extraneous factors. The estimates were then used to derive life expectancies at birth from the North model life tables.

### **Mortality Assumptions**

Future mortality trends were determined by fitting a logistic function to the estimated  $q(5)$  values and the implied life expectancies at birth for the periods 1960-1965 to 1995-2000 were derived from the North model life table. The logistic curve fits many types of growth data much better than that of other curves such as the exponential curve. It has been demonstrated that logistic curves possess a certain predictive value and that future estimates derived by means of logistic extrapolation have, in my cases, been reasonably confirmed by actual observations as censuses were taken subsequently.

The impact of HIV/AIDS was incorporated in a set of projections based on the estimates prepared by the UNAIDS. Estimates of the impact of HIV/AIDS were made by projecting the yearly incidence of HIV infection (UN 2002 Revision). The revision of the world population prospects in 2000 revealed that the impact of HIV/AIDS was worsening and that the number of highly affected countries had risen to 45, upward from 34 in the 1998 Revision (United Nations 2001). These are countries with HIV prevalence of 2 per cent or more among the population aged 15-49 years. Recent estimates by WHO indicate that HIV prevalence in Ghana has been underestimated and that it now lies in the neighbourhood of 4 per cent. Two sets of projections were therefore constructed: one incorporating the effect of AIDS and the other without AIDS; the difference between these two populations is indicative of the impact of AIDS.

The seriousness of the impact in terms of morbidity, mortality and population loss is reflected in estimated life expectancy at birth of 56.5 for males and 59.3 years for females in 2000-2005

instead of 58.3 for males and 62.0 years for females in the absence of AIDS. The excess deaths due to AIDS is expected to increase from 110,000 in 2000-2005 to 130,000 in 2010-2015. The estimated life expectancy values used in the projections are presented in Table 10.2.

**Table 10.2 Life Expectancy Values Used in the Projections, by Sex, 2000-2025**

Period (Years)	Assumption without AIDS		Assumption with AIDS*	
	Male	Female	Male	Female
1995-2000	56.6	60.3	55.0	57.6
2000-2005	58.3	62.0	56.5	59.3
2005-2010	60.0	63.6	58.5	60.9
2010-2015	61.7	65.2	60.5	62.9
2015-2020	63.6	66.7	62.3	64.2
2020-2025	66.5	68.2	64.0	65.8

\*United Nations The 2002 Revision, New York, 2003.

#### 10.4 Total Population of Ghana

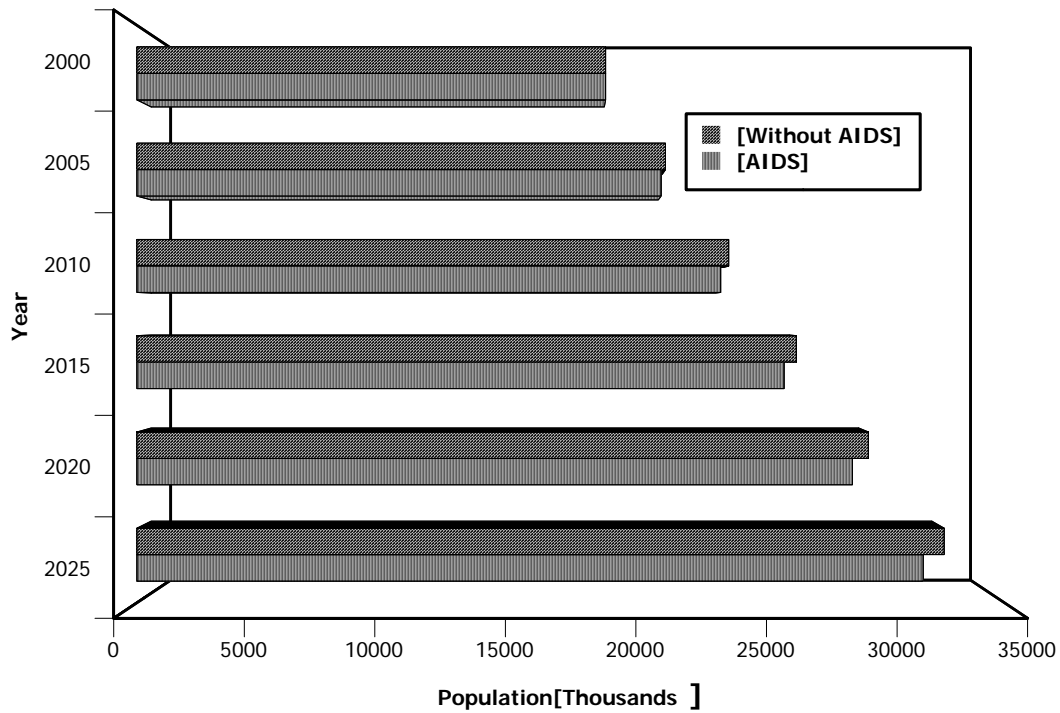
Table 10.3 presents, under the three fertility assumptions, the recorded and projected population of Ghana over the period 2000 to 2025. The medium projections indicate that the country's population will increase by 4.4 million during the decade of 2000-2010 and by 7.5 million in the 2010-2025 period. Every year about 440,488 people will be added to the population during the period 2000-2010; the annual average will increase to 500,000 in the period 2010 to 2025.

**Table 10.3 Projected Population of Ghana, 2000-2025**

Year	Without AIDS			With AIDS		
	Medium	High	Low	High	Medium	Low
2000	18,912,080	18,912,080	18,912,080	18,912,080	18,912,080	18,912,080
2005	21,026,106	21,026,106	20,943,590	20,913,780	20,913,780	20,832,468
2010	23,316,880	23,388,426	22,873,216	23,087,710	23,158,290	22,651,878
2015	25,669,386	26,161,880	24,743,272	25,327,426	25,811,046	24,419,384
2020	28,207,720	29,408,830	26,543,180	27,717,026	28,890,552	26,114,098
2025	30,806,944	33,087,398	28,163,204	30,150,172	32,368,242	27,599,882

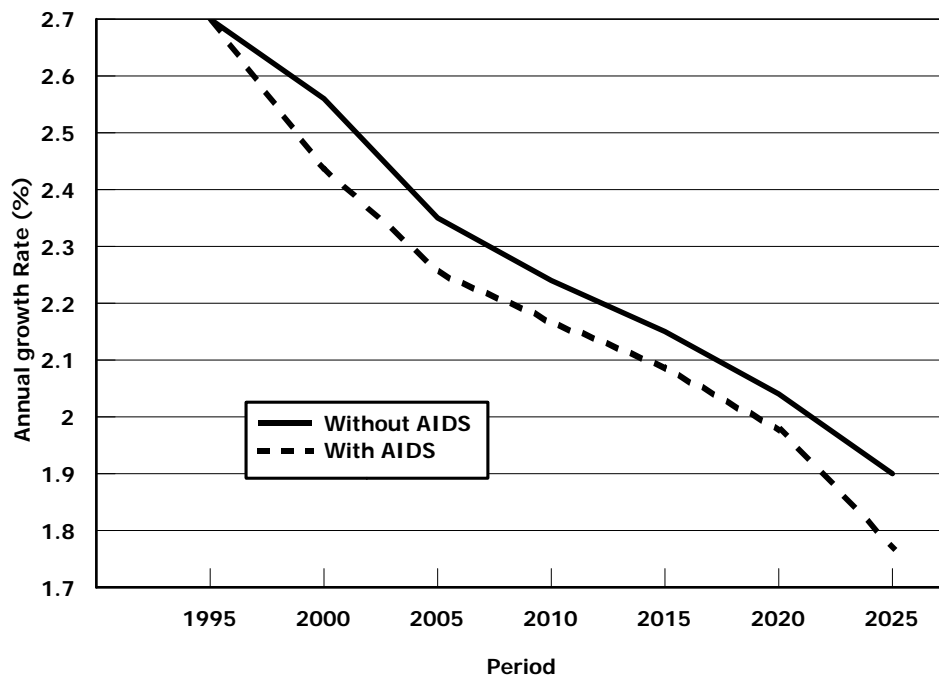
Despite the impact of AIDS, the country's population will continue to grow (Table 10.3). This is due to the prevailing relatively high fertility level. For instance, the medium variant projections indicate that the population will increase from 19 million in 2000 to 23 million instead of 23.5 million (in the absence of HIV/AIDS) in 2010. The projected population of 25.6 million for the year 2015 is also less than the projected "normal" one by 400,000 (i.e. 1.5 per cent). In other words, the population size will be reduced by 1.5 per cent by the incidence of AIDS.

**Figure 10.1 Projected Population With and Without AIDS, 2000-2025**



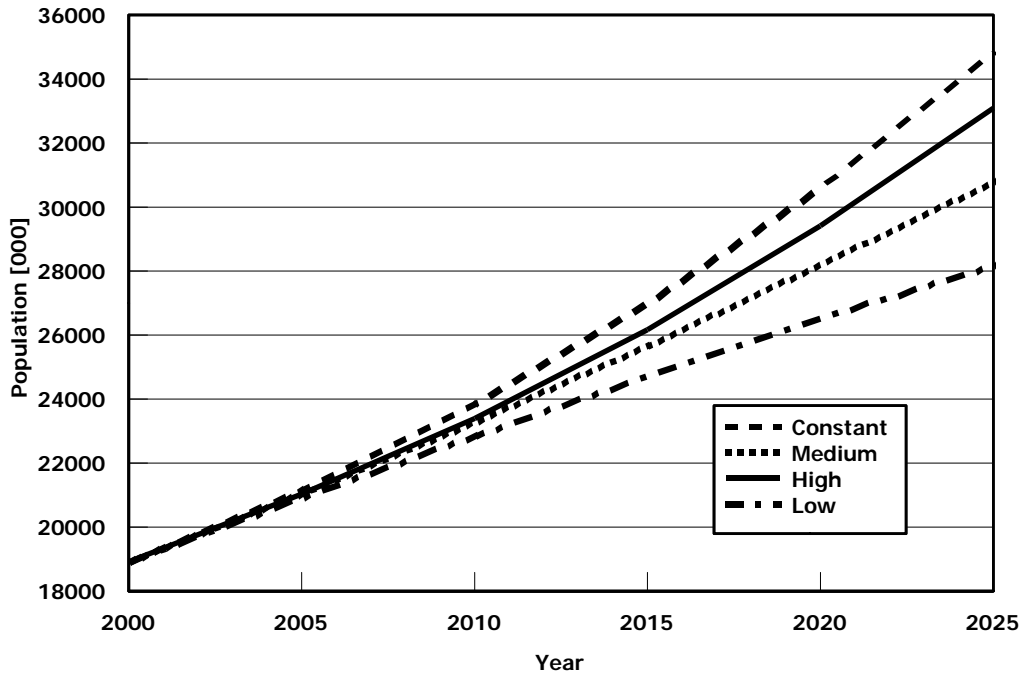
The projected annual rates of growth are shown in Figure 10.2. The narrowing of the gap with the years is due to the assumption that the probability of being infected by HIV will decline significantly in the future, particularly after 2015. Though the population size will be smaller because of the mortality impact of AIDS, the population will continue to expand as a result of high fertility.

**Figure 10.2 Annual Population Growth, 1990-1995 to 2020-2025**



The several population projection variants in the absence of AIDS are summarized graphically in Figure 10.3. The difficulty in moving the economy forward to ensure that standard of living is improved and sustained suggests that efforts at reducing rate of population growth through the attainment of the medium to low fertility variant would be a welcome option.

Figure 10.3 Projected Population by Different Variants, 2000-2025



### 10.5 Rates of Change

One of the guiding principles in evaluating the accuracy of a census count is that population change normally proceeds in an orderly manner. Thus, in the absence of any unusual events the rate of growth for a country as a whole and its subdivisions change only gradually in successive inter-censal periods, and almost invariably follows a fairly constant trend.

The estimated crude and death rates of 50 and 23 per thousand population for the late 1950s and early 1960s yield a rate of natural increase of 2.7 per cent per annum (Gaisie 1969). A set of estimates derived from the data collected in the 1968/1969 Demographic Sample Surveys and the 1960 and the 1970 census indicate a rise in the rate of natural increase to the neighbourhood of between 2.9 and 3.0 per cent per annum during the late 1960s and early 1970s (Gaisie and Johnson 1976). A virtually similar pattern is revealed by new estimates presented in Table 10.4 (based on data collected in censuses and sample surveys over the past four decades, 1960 - 2000). The rate of natural increase was about 3.0 per cent per annum during the 1960s and 1970s and remained constant until the late 1980s or early 1990s before dropping gradually to 2.6 per cent by the turn of the century (Table 10.4).



**Table 10.4 Reported and Estimated Rates of Natural Increase, 1960-2000**

Period	Reported	Estimated
1960-1970	3.10	-
1970-1984	2.89	-
1984-2000	2.68	-
1960-1965	-	3.10
1965-1970	-	3.04
1970-1975	-	3.07
1975-1980	-	3.18
1980-1985	-	3.31
1985-1990	-	3.16
1990-1995	-	2.83
1995-2000	-	2.58

The rise of the rate of natural increase during the 1960s and 1970s was triggered by declining mortality and constant fertility. Examination of the rates of natural increase for single years indicate that the population began to grow at the rate of 2.8 per cent as from 1995 and that the rate never dropped to below 2.8 per cent between 1984 and 1994. The growth rate of 2.7 per cent between 1984 and 2000, therefore, appears to be under reported, an indication of under enumeration in the census count in both the 1984 and 2000 censuses. However, a proportion of the under count in the 2000 census is attributable to emigration.

Under medium and high variant assumptions of fertility decline, the population will grow at an annual rate of 2.3 per cent between 2000 and 2005 and then decline to between 1.8 (medium variant) and 2.5 (high variant) per cent per annum during the projection period. The growth rates imply the doubling of the population in 30-37 years. Even the low variant projection suggests a doubling of the population in 45-50 years. Table 10.5 presents a summary of demographic indicators.

Fertility trends affect the rate of growth by determining the number of births women have the size of different generations. In the majority of African countries where fertility is above replacement level, children outnumber their parents by substantial levels and the children in turn have more children than required to replace their parents' generations, even when fertility level is declining. Consequently, as fertility falls, the number of births to relatively large generations of parents remains high for some time relative to the number of deaths, mostly of grand parents and great grand-parents. This process tends to maintain a relatively high population growth rate even though fertility is falling. In most of the countries where fertility rate is reported to be falling, overall population growth rates are relatively high and, in consequence, the balancing of the demographic "deficit" takes much longer to be effected. The decline of fertility in Ghana therefore is yet to make an impact on the demographic profile of the country.

**Table 10.5: Summary of Demographic Indicators**

Indicator	A. High Variant					
	2000	2005	2010	2015	2020	2025
<b>Fertility</b>						
Input TFR	4.7	4.4	4.4	4.4	4.4	4.4
GRR	2.32	2.17	2.17	2.17	2.17	2.17
NRR	1.91	1.83	1.86	1.90	1.93	1.96
Mean Age of Childbearing	29.7	29.7	29.7	29.7	29.7	29.7
Child-woman ratio	0.64	0.60	0.59	0.59	0.61	0.61
<b>Mortality</b>						
Male LE	56.6	58.3	60.0	61.7	63.6	66.5
Female LE	60.3	62.0	63.6	65.2	66.7	68.2
Total LE	58.5	60.2	61.8	63.5	65.2	67.4
IMR	71.2	64.7	58.4	52.2	46.3	38.6
U5MR	112.9	101.4	90.3	79.4	69.2	55.8
<b>Vital Rates</b>						
CBR per 1000	34.1	32.2	32.5	32.8	32.6	32.1
CDR per 1000	11.5	10.6	9.9	9.2	8.5	7.6
RNI per cent	2.25	2.16	2.26	2.36	2.41	2.45
GR per cent	2.25	2.16	2.26	2.36	2.41	2.45
Doubling time	31.1	32.4	31.0	29.8	29.1	28.6
<b>Annual births and deaths</b>						
Births	644,261	680,210	768,650	871,103	979,925	1,092,158
Deaths	218,165	223,894	233,883	244,502	255,752	257,897
<b>Population</b>						
Total population	18,912,080	21,134,518	23,646,912	26,590,856	30,043,278	33,990,008
Male population	9,357,382	10,463,692	11,716,957	13,189,259	14,940,879	16,939,278
Female population	9,554,697	10,670,825	11,929,952	13,401,597	15,102,400	17,050,726
per cent aged 0-4 years	15.25	14.35	14.25	14.49	14.64	14.59
per cent aged 5-14 years	24.33	24.69	24.17	23.37	23.46	23.80
per cent aged 15-49 years	47.13	47.56	48.05	48.49	48.10	47.62
per cent aged 15-64 years	55.88	56.33	56.89	57.4	57.09	56.70
per cent aged 65 years and older	4.54	4.62	4.69	4.74	4.81	4.90
per cent females 15-49 years	47.05	47.51	48.02	48.49	48.13	47.67
Sex ratio	97.93	98.06	98.21	98.42	98.93	99.35
Dependency ratio	0.71	0.69	0.68	0.66	0.67	0.68
Median age	20	21	21	21	21	21
<b>Urban population</b>	8,274,270	10,072,839	12,188,661	14,734,076	17,789,208	21,383,094
<b>Rural population</b>	10,637,810	11,061,679	11,458,251	11,856,780	12,254,070	12,606,914
per cent urban	43.75	47.66	51.54	55.41	59.21	62.91
per cent rural	56.25	52.34	48.46	44.59	40.79	37.09

<b>Indicator</b>	<b>B. Medium Variant</b>					
	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
<b>Fertility</b>						
Input TFR	4.7	4.4	4.0	3.8	3.5	3.3
GRR	2.32	2.17	1.97	1.87	1.72	1.63
NRR	1.91	1.83	1.69	1.64	1.53	1.47
Mean Age of Childbearing	29.7	29.7	29.7	29.7	29.7	29.7
Child-woman ratio	0.64	0.60	0.56	0.52	0.48	0.47
<b>Mortality</b>						
Male LE	56.6	58.3	60.0	61.7	63.6	66.5
Female LE	60.3	62.0	63.6	65.2	66.7	68.2
Total LE	58.5	60.2	61.8	63.5	65.2	67.4
IMR	71.2	64.7	58.4	52.2	46.3	38.6
U5MR	112.9	101.4	90.3	79.4	69.2	55.8
<b>Vital Rates</b>						
CBR per 1000	34.1	32.2	29.8	29.0	27.3	26.0
CDR per 1000	11.5	10.6	9.7	9.1	8.4	7.7
RNI per cent	2.26	2.16	2.00	1.99	1.89	1.83
GR per cent	2.26	2.16	2.00	1.99	1.89	1.83
Doubling time	31.0	32.4	34.9	35.1	37.0	38.3
<b>Annual births and deaths</b>						
Births	644,261	680,209	698,772	752,317	779,483	813,269
Deaths	217,211	223,893	228,560	235,122	240,770	240,781
<b>Population</b>						
Total population	18,912,080	21,134,500	23,458,808	25,950,150	28,511,828	31,311,432
Male population	9,357,382	10,463,684	11,622,126	12,866,258	14,166,650	15,583,953
Female population	9,554,697	10,670,817	11,836,684	13,083,892	14,345,179	15,727,482
per cent aged 0-4 years	15.25	14.35	13.56	13.08	12.27	12.12
per cent aged 5-14 years	24.33	24.70	24.36	23.24	22.51	21.58
per cent aged 15-49 years	47.13	47.56	48.44	49.69	50.68	51.12
per cent aged 15-64 years	55.88	56.33	57.35	58.82	60.15	60.98
per cent aged 65 years and older	4.54	4.62	4.73	4.86	5.07	5.32
per cent females 15-49 years	47.05	47.51	48.4	49.67	50.67	51.12
Sex ratio	97.93	98.06	98.19	98.34	98.76	99.08
Dependency ratio	0.71	0.69	0.66	0.62	0.58	0.55
Median age	20	21	21	22	23	24
<b>Urban population</b>	8,274,270	10,066,559	12,086,201	14,376,346	16,885,578	19,708,262
<b>Rural population</b>	10,637,810	11,067,941	11,372,607	11,573,804	11,626,250	11,603,170
per cent urban	43.75	47.63	51.52	55.4	59.22	62.94
per cent rural	56.25	52.37	48.48	44.6	40.78	37.06

Indicator	C. Low Variant					
	2000	2005	2010	2015	2020	2025
<b>Fertility</b>						
Input TFR	4.7	4.4	3.7	3.1	2.7	2.2
GRR	2.32	2.17	1.82	1.53	1.33	1.08
NRR	1.91	1.83	1.56	1.34	1.18	0.98
Mean Age of Childbearing	29.7	29.7	29.7	29.7	29.7	29.7
Child-woman ratio	0.64	0.60	0.53	0.45	0.39	0.34
<b>Mortality</b>						
Male LE	56.6	58.3	60.0	61.7	63.6	66.5
Female LE	60.3	62.0	63.6	65.2	66.7	68.2
Total LE	58.5	60.2	61.8	63.5	65.2	67.4
IMR	71.2	64.7	58.4	52.2	46.3	38.6
U5MR	112.9	101.4	90.3	79.4	69.2	55.8
<b>Vital Rates</b>						
CBR per 1000	34.1	32.2	27.7	24.2	22.1	18.6
CDR per 1000	11.5	10.6	9.6	8.9	8.4	7.7
RNI per cent	2.25	2.16	1.81	1.54	1.37	1.09
GR per cent	2.25	2.16	1.81	1.54	1.37	1.09
Doubling time	31.1	32.4	38.7	45.5	51.0	64.1
<b>Annual births and deaths</b>						
Births	644,261	680,210	646,364	613,731	601,318	539,258
Deaths	218,165	223,894	224,571	224,760	228,242	224,411
<b>Population</b>						
Total population	18,912,080	21,134,518	23,317,790	25,335,352	27,263,810	28,966,594
Male population	9,357,382	10,463,692	11,551,034	12,556,237	13,535,399	14,396,396
Female Population	9,554,697	10,670,825	11,766,756	12,779,113	13,728,410	14,570,196
per cent aged 0-4 years	15.25	14.35	13.04	11.51	10.47	9.26
per cent aged 5-14 years	24.33	24.69	24.51	23.26	21.32	19.53
per cent aged 15-49 years	47.13	47.56	48.73	50.89	53.00	54.79
per cent aged 15-64 years	55.88	56.33	57.70	60.25	62.91	65.45
per cent aged 65 and older	4.54	4.62	4.75	4.98	5.30	5.76
per cent females 15-49 years	47.05	47.51	48.69	50.86	50.95	54.72
Sex ratio	97.93	98.06	98.17	98.26	98.59	98.81
Dependency ratio	0.71	0.69	0.65	0.58	0.51	0.44
Median age	20	21	21	22	24	26
Urban population	8,274,270	10,072,839	12,021,591	14,047,963	16,163,683	18,257,178
Rural population	10,637,810	11,061,679	11,296,199	11,287,389	11,100,127	10,709,416
per cent urban	43.75	47.66	51.56	55.45	59.29	63.03
per cent rural	56.25	52.34	48.44	44.55	40.71	36.97

## **10.6 Urbanization**

There have been considerable migratory movements in the country since the period of European colonization. The country experienced a great deal of movement of population from one locality to another. The most important movement in recent years reflect the socio-economic changes taking place within the country. The usual four types of internal migratory movements have been identified: rural to rural, rural to urban, urban to urban and urban to rural. Of these, although the rural to rural movements are of the largest volume in most countries, the most significant in its impact is the accelerated migration from rural to urban areas.

Ghana exhibits one of the fastest urban growth in the world. In 1960, nearly one-quarter (23%) of the population lived in urban areas. By 2000, 4 out of 10 Ghanaians (8 million) were urban dwellers and it is expected that 14.4 million persons or 55.4 per cent of the population will be residing in urban areas in the year 2015. Thus, more than three quarters (88%) of all the population growth during 2000-2015 (about 6.6 million) will be in urban areas. By 2025, urban areas will contain 63 per cent of the population in the country.

Migration has been a population response to the changing social and economic conditions in the country. As these conditions changed, so did the type of migrant and the purpose of movement. Urban centres or agglomerations emerged as a destination of the major structural flows of people across the country. Thus, urbanization also becomes part of the response to social change; a response which is an integral part of the socio-economic and political transformations taking place to-date in Ghana. Furthermore, urbanization has led to redistribution of the population in such a way as to effect still more social change. The increasing agglomeration of the population engenders a new configuration of both political and purchasing power which will continue to attract still more people as well as economic activities to these centres. But this process is, among other things, a major factor of political instability and dissipation of economic potentialities.

As a component of the modernization process, urbanization is seen as a hub of the development process to which the political leadership should pay greater attention, if Ghana is to make any significant headway in poverty reduction. The concern should be focused more seriously on the strategy to make cities/towns play a more effective role as a form of social organization for social and economic development. The need to maintain them physically as a healthy environment deserves repeating. The pattern of future development will depend very much on the manner in which the country deals with these changing phenomena of internal migration and increasing urbanization. These observations immediately direct our attention to other related phenomena: size, composition and growth of the rural population, the most neglected people in the country. Despite high urban growth rates, African rural populations continue to grow. The rural population is currently growing at an estimated rate of 0.8 per cent per annum.

## **10.7 Age Structure**

The proportion of 0-14 year-olds is expected to decline from 41.0 per cent in 2000 to between 37 and 39 per cent in 2010. The medium population projections suggest that it will drop slightly to 39 per cent by the year 2010. In 1960, there were 1.1 million persons aged between 15-24 years. In 2000, the size of this population had expanded to 3.5 million, increasing its size by more than three-folds between 1960 and 2000. The growth of the country's youth population (adolescents and young adults) reflects the underlying high annual growth rate of 2.7 per cent. The rapid growth of the adolescent and youth population has increased the pressure to expand

education and health services and employment opportunities. Policy makers must bear in mind that the period of rapid expansion of the adolescent population will be long. For instance, the medium projections indicate that the number of young people (15-24 years) will grow much more rapidly, rising from 3.5 million in 2000 to 4.5 million in 2010 and nearly 5.6 million in 2020.

In addition to absolute numbers, the proportion of young people in the total population raises policy concerns. The proportion increased from 18.7 per cent in 1960 to nearly 19 per cent in 2000 and it is estimated to climb up to 20 per cent in 2020. A situation in which 20 per cent or more of a population is aged 15-24 years has been described as “young bulge”. There is a speculation that this phenomenon may subject a society to potentially disruptive, political and social movements.

In addition to increasing services and facilities to cope with large numbers of young people, the expansion of this segment of the population raises two important policy concerns: first, the adolescents and young adults are about to enter or are already in their prime reproductive years, leading to large numbers of births, even when fertility is low; second, the adolescent and young adults are prone to all types of risk behaviour, including smoking, drinking, drug abuse and high-risk sexual behaviour leading to increase in prevalence of HIV/AIDS. As noted earlier, the projected figures indicate that the youthfulness of the population will persist during the projection period. Thus, the population still has the high potential inherent in the age structure with subsequent rapid expansion of the population into the middle of the 21<sup>st</sup> century.

The population of women aged 15-49 years increased from 1.4 million in 1960 to 4.5 million in 2000 and it is expected to increase further to 5.7 million in 2010. Thus, large number of births and the size of different generations will generate expansion of the population even though fertility will be declining. When fertility declines from high to low levels, populations tend to be characterized (for about 15 to 20 years later) by unusually large proportions of men and women in their reproductive years, leading to large numbers of births even when fertility rates are low. For this very reason, the population continues to grow, a phenomenon described as “population momentum”. For instance, Japan reached replacement level in 1957, but because of population momentum, the Japanese population is projected to keep growing until 2006. Hence, even if Ghana’s fertility reaches replacement level in 2050, the population will continue to grow for a considerable length of time.

The proportion of the 15-64 year-olds will increase from 53 per cent in 2000 to between 54 and 55 per cent in 2005 and then to between 55 and 58 per cent in 2010. This segment of the age structure will increase the pressure on provision of job opportunities. The population is at the same time aging gradually, and it will be a great mistake to dismiss aging as an issue that need not be considered until some time in the future. The population aged 65 years and older increased from 271,639 in 1960 to one million in 2000 and it is estimated to rise to 1.1 million in 2010, 1.4 million in 2015 and 1.7 million in 2025. Policy options for this segment of the population will include enhancement of traditional support systems, greater employment opportunities for the elderly who are still capable to remain in the work force, institutions that support high levels of personal savings and government programmes such as pension schemes and health care systems (population projections by age and sex are presented in Appendix Table A.1 while the rural component is presented in Table A.2).

In conclusion, the implications of these demographic realities are manifold and penetrating. For instance, the obvious related dimensions of the age structure are the labour force potential, high dependency ratios, consumption needs and social and economic requirements for the present and

future generations. It is important to emphasize that population is the only major factor that interacts with all the other variables in the development equation. Unless serious and conscious attempt is made to put population at the core of development, all efforts to improve human well-being and reduce poverty will not be sustained. Stabilization of the population is therefore an essential requirement for sustained economic growth and sustainable social and economic development. Effective management of the population must, therefore, be one of the major concerns of all Ghanaians in the coming decades.

**Appendix Table A.1 Population Projection by Different Variants 2000-2025**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2000</b>									
0-4	2,884,653	1,445,741	1,438,912	2,884,653	1,445,741	1,438,912	2,884,653	1,445,741	1,438,912
5-9	2,455,447	1,228,646	1,226,801	2,455,447	1,228,646	1,226,801	2,455,447	1,228,646	1,226,801
10-14	2,145,515	1,072,375	1,073,140	2,145,515	1,072,375	1,073,140	2,145,515	1,072,375	1,073,140
15-19	1,875,902	936,691	939,211	1,875,902	936,691	939,211	1,875,902	936,691	939,211
20-24	1,634,841	814,107	820,734	1,634,841	814,107	820,734	1,634,841	814,107	820,734
25-29	1,419,321	703,687	715,634	1,419,321	703,687	715,634	1,419,321	703,687	715,634
30-34	1,229,285	608,240	621,045	1,229,285	608,240	621,045	1,229,285	608,240	621,045
35-39	1,060,987	524,022	536,965	1,060,987	524,022	536,965	1,060,987	524,022	536,965
40-44	913,513	449,162	464,351	913,513	449,162	464,351	913,513	449,162	464,351
45-49	780,191	382,723	397,468	780,191	382,723	397,468	780,191	382,723	397,468
50-54	659,194	320,964	338,230	659,194	320,964	338,230	659,194	320,964	338,230
55-59	549,544	264,819	284,725	549,544	264,819	284,725	549,544	264,819	284,725
60-64	445,547	212,417	233,130	445,547	212,417	233,130	445,547	212,417	233,130
65-69	343,443	160,951	182,492	343,443	160,951	182,492	343,443	160,951	182,492
70-74	245,079	113,226	131,853	245,079	113,226	131,853	245,079	113,226	131,853
75-79	154,263	70,182	84,081	154,263	70,182	84,081	154,263	70,182	84,081
80+	115,354	49,429	65,925	115,354	49,429	65,925	115,354	49,429	65,925
<b>Total</b>	<b>18,912,080</b>	<b>9,357,382</b>	<b>9,554,697</b>	<b>18,912,080</b>	<b>9,357,382</b>	<b>9,554,697</b>	<b>18,912,080</b>	<b>9,357,382</b>	<b>9,554,697</b>
<b>2005</b>									
0-4	3,032,594	1,526,971	1,505,623	3,032,543	1,526,944	1,505,599	3,032,594	1,526,671	1,505,623
5-9	2,795,738	1,398,921	1,396,817	2,795,783	1,398,945	1,396,838	2,795,738	1,398,921	1,396,817
10-14	2,423,409	1,211,503	1,211,906	2,423,411	1,211,504	1,211,907	2,423,409	1,211,503	1,211,906
15-19	2,115,638	1,055,694	1,059,944	2,115,637	1,055,693	1,059,944	2,115,638	1,055,694	1,059,944
20-24	1,842,712	917,504	925,208	1,842,711	917,504	925,207	1,842,711	917,504	925,207
25-29	1,601,393	795,046	806,347	1,601,392	795,046	806,347	1,601,393	795,046	806,347
30-34	1,387,299	686,031	701,269	1,387,299	686,030	701,268	1,387,299	686,031	701,269
35-39	1,197,949	591,455	606,494	1,197,946	591,453	606,493	1,197,949	591,455	606,494
40-44	1,028,738	506,722	522,016	1,028,740	506,724	522,016	1,028,738	506,722	522,016
45-49	878,849	430,077	448,773	878,849	430,076	448,773	878,849	430,077	448,773
50-54	741,539	361,281	380,258	741,539	361,281	380,258	741,539	361,281	380,258
55-59	614,775	296,665	318,111	614,775	296,665	318,111	614,775	296,665	318,111
60-64	496,638	236,644	259,995	496,638	236,644	259,995	496,638	236,644	259,995
65-69	382,498	179,906	202,592	382,498	179,906	202,592	382,498	179,906	202,592
70-74	272,294	125,573	146,721	272,294	125,573	146,721	272,294	125,573	146,721
75-79	173,363	78,542	84,821	173,363	78,542	94,821	173,363	78,542	94,821
80+	149,091	65,157	83,933	149,091	65,157	83,933	149,091	65,157	83,933
<b>Total</b>	<b>21,134,518</b>	<b>10,463,692</b>	<b>10,670,825</b>	<b>21,134,518</b>	<b>10,463,684</b>	<b>10,670,817</b>	<b>21,134,518</b>	<b>10,463,692</b>	<b>10,670,825</b>



**Table A.1 Contd.**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2010</b>									
0-4	3,369,721	1,698,188	1,671,533	3,181,601	1,603,347	1,578,254	3,040,602	1,532,265	1,508,337
5-9	2,951,330	1,483,847	1,467,484	2,951,326	1,483,845	1,467,481	2,951,330	1,483,847	1,467,484
10-14	2,763,365	1,381,483	1,381,882	2,763,411	1,381,507	1,381,904	2,763,365	1,381,483	1,381,882
15-19	2,392,794	1,194,263	1,198,531	2,392,796	1,194,264	1,198,532	2,392,794	1,194,263	1,198,531
20-24	2,081,356	1,035,747	1,045,609	2,081,354	1,035,746	1,045,608	2,081,356	1,035,747	1,045,609
25-29	1,808,153	897,690	910,463	1,808,151	897,689	910,462	1,808,153	897,690	910,463
30-34	1,568,296	776,650	791,646	1,568,294	776,649	791,645	1,568,296	776,650	791,646
35-39	1,355,389	669,061	686,328	1,355,385	669,058	686,327	1,355,389	669,061	686,328
40-44	1,165,052	574,051	591,000	1,165,051	574,050	591,000	1,165,052	574,051	591,000
45-49	992,369	486,663	505,706	992,370	486,664	505,706	992,369	486,663	505,706
50-54	837,916	407,412	430,504	837,914	407,411	430,503	837,916	407,412	430,504
55-59	694,227	335,352	358,875	694,225	335,351	358,874	694,227	335,352	358,875
60-64	558,332	266,510	291,822	558,329	266,509	291,820	558,332	266,510	291,822
65-69	429,107	201,778	227,329	429,104	201,776	227,328	429,107	201,778	227,329
70-74	305,757	141,582	164,175	305,754	141,581	164,173	305,757	141,582	164,175
75-79	194,572	88,049	106,523	194,571	88,049	106,522	194,572	88,049	106,523
80+	179,176	78,631	100,545	179,176	78,631	100,545	179,175	78,631	100,545
<b>Total</b>	<b>23,646,912</b>	<b>11,716,957</b>	<b>11,929,952</b>	<b>23,458,808</b>	<b>11,622,126</b>	<b>11,836,684</b>	<b>23,317,790</b>	<b>11,551,034</b>	<b>11,766,756</b>
<b>2015</b>									
0-4	3,852,205	1,943,084	1,909,121	3,394,524	1,712,213	1,682,311	2,917,033	1,471,325	1,445,708
5-9	3,291,840	1,656,780	1,635,060	3,108,789	1,564,628	1,544,161	2,971,508	1,495,519	1,475,988
10-14	2,921,426	1,467,562	1,453,864	2,921,424	1,467,561	1,453,862	2,921,426	1,467,562	1,453,864
15-19	2,731,952	1,363,631	1,368,322	2,731,999	1,363,655	1,368,343	2,731,952	1,363,631	1,368,322
20-24	2,357,535	1,173,592	1,183,943	2,357,536	1,173,593	1,183,943	2,357,535	1,173,592	1,183,943
25-29	2,045,824	1,015,255	1,030,569	2,045,822	1,015,255	1,030,568	2,045,824	1,015,255	1,030,569
30-34	1,774,166	878,666	895,500	1,774,164	878,665	895,499	1,774,166	878,666	895,500
35-39	1,535,965	759,544	776,421	1,535,967	759,548	776,419	1,535,965	759,544	776,421
40-44	1,322,070	651,740	670,330	1,322,074	651,744	670,329	1,322,070	651,740	670,330
45-49	1,126,855	552,988	573,866	1,126,853	552,988	573,866	1,126,855	552,988	573,866
50-54	949,035	462,633	486,402	949,035	462,634	486,401	949,035	462,633	486,402
55-59	787,438	379,778	407,660	787,435	379,776	407,659	787,438	379,778	407,660
60-64	633,556	302,855	330,701	633,552	302,853	330,699	633,556	302,855	330,701
65-69	485,464	228,776	256,688	485,460	228,774	256,686	485,464	228,776	256,688
70-74	345,817	160,172	185,646	345,814	160,170	185,644	345,817	160,172	185,646
75-79	220,676	100,346	120,330	220,673	100,345	120,329	220,676	100,346	120,330
80+	209,032	91,856	117,175	209,032	91,856	117,175	209,032	91,856	117,175
<b>Total</b>	<b>26,590,856</b>	<b>13,189,259</b>	<b>13,401,597</b>	<b>25,950,150</b>	<b>12,866,258</b>	<b>13,083,892</b>	<b>25,335,352</b>	<b>12,556,237</b>	<b>12,779,113</b>

**Table A.1 Contd**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2020</b>									
0-4	4,398,806	2,228,519	2,170,287	3,497,927	1,772,182	1,725,745	2,854,414	1,446,159	1,408,255
5-9	3,782,296	1,909,210	1,873,086	3,333,234	1,682,575	1,650,659	2,865,026	1,446,133	1,418,893
10-14	2,265,503	1,643,795	1,621,708	3,083,905	1,552,362	1,531,543	2,947,694	1,483,753	1,463,941
15-19	2,892,593	1,415,584	1,441,008	2,892,595	1,451,595	1,441,000	2,892,593	1,451,584	1,441,008
20-24	2,696,582	1,343,428	1,353,153	2,696,633	1,343,466	1,353,167	2,696,582	1,343,428	1,353,153
25-29	2,322,151	1,153,749	1,168,401	2,322,158	1,153,763	1,168,394	2,322,151	1,153,749	1,168,401
30-34	2,012,011	996,880	1,015,132	2,012,015	996,892	1,015,123	2,012,011	995,880	1,015,132
35-39	1,741,294	861,541	879,753	1,741,295	861,550	879,744	1,741,294	86,541	879,753
40-44	1,501,739	742,018	759,721	1,501,739	742,027	759,712	1,501,739	741,018	759,721
45-49	1,283,011	630,864	652,148	1,283,020	630,879	652,141	1,283,011	630,864	652,148
50-54	1,081,861	528,680	553,181	1,081,866	528,691	553,175	1,081,861	528,680	553,181
55-59	896,146	434,253	461,894	896,152	434,265	461,887	896,146	434,253	461,894
60-64	723,040	345,960	377,080	723,043	345,971	377,072	723,040	345,960	377,080
65-69	555,246	262,870	292,375	555,247	262,881	292,375	555,246	262,870	292,375
70-74	395,251	184,242	211,009	395,252	184,251	211,001	395,251	183,242	211,009
75-79	252,781	115,596	137,185	252,781	115,603	137,178	252,781	115,596	137,185
80+	242,971	107,691	135,280	242,971	107,698	135,272	242,971	107,691	135,280
<b>Total</b>	<b>30,043,278</b>	<b>14,940,879</b>	<b>15,102,400</b>	<b>28,511,828</b>	<b>14,166,650</b>	<b>14,345,179</b>	<b>27,263,810</b>	<b>13,535,399</b>	<b>13,728,410</b>
<b>2025</b>									
0-4	4,960,146	2,513,289	2,446,856	3,794,854	1,922,834	1,872,020	2,683,621	1,359,731	1,323,889
5-9	4,332,516	2,195,943	2,136,573	3,445,314	1,746,323	1,698,992	2,812,002	1,425,331	1,386,671
10-14	3,757,066	1,896,887	1,860,179	3,310,972	1,671,687	1,639,285	2,845,846	1,436,731	1,409,116
15-19	3,236,813	1,627,597	1,609,216	3,056,733	1,537,014	1,519,720	2,921,659	1,469,040	1,452,619
20-24	2,858,675	1,431,842	1,426,833	2,858,678	1,431,854	1,426,824	2,858,675	1,431,842	1,426,833
25-29	2,659,920	1,322,564	1,337,355	2,659,971	1,322,602	1,337,369	2,659,920	1,322,564	1,337,355
30-34	2,287,463	1,134,591	1,152,872	2,287,470	1,134,605	1,152,865	2,287,463	1,134,591	1,152,872
35-39	1,977,629	978,413	999,216	1,977,629	978,421	999,208	1,977,629	978,413	998,216
40-44	1,705,426	842,785	862,641	1,705,431	842,798	862,632	1,705,426	842,785	862,641
45-49	1,460,714	719,933	740,781	1,460,715	719,943	740,772	1,460,714	719,933	740,781
50-54	1,235,092	604,815	630,277	1,235,101	604,832	630,270	1,235,092	604,815	630,277
55-59	1,025,014	497,948	527,066	1,025,019	497,960	527,060	1,025,014	497,948	527,066
60-64	826,457	397,291	429,166	826,464	397,304	429,160	826,457	397,291	429,166
65-69	637,345	301,954	335,391	637,349	301,965	335,384	637,345	301,954	335,391
70-74	455,466	213,220	242,246	455,468	213,229	242,239	455,466	213,220	242,246
75-79	291,627	134,166	157,461	291,628	134,173	157,455	291,627	134,166	157,461
80+	282,638	126,042	156,596	282,637	126,050	156,588	282,638	126,042	156,596
<b>Total</b>	<b>33,990,008</b>	<b>16,939,278</b>	<b>17,050,726</b>	<b>31,311,432</b>	<b>15,583,593</b>	<b>15,727,842</b>	<b>28,966,594</b>	<b>14,396,396</b>	<b>14,570,196</b>

**Appendix Table A.2 Projected Urban Population, 2000-2025**

Age Group	High Variant			Variant Medium			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2000</b>									
0-4	1,033,732	513,281	520,451	1,033,732	513,281	520,451	1,033,732	513,281	520,451
5-9	1,053,432	517,610	535,822	1,053,432	517,610	535,822	1,053,432	517,610	535,822
10-14	963,577	461,218	502,359	963,577	461,218	502,359	963,577	461,218	502,359
15-19	918,094	441,479	476,615	918,094	441,479	476,615	918,094	441,479	476,615
20-24	836,838	407,200	429,638	836,838	407,200	429,638	836,838	407,200	429,638
25-29	747,897	358,913	388,984	747,897	358,913	388,984	747,897	358,913	388,984
30-34	582,893	279,843	303,050	582,893	279,843	303,050	582,893	279,843	303,050
35-39	485,638	231,910	253,728	485,638	231,910	253,728	485,638	231,910	253,728
40-44	403,317	201,666	201,651	403,317	201,666	201,651	403,317	201,666	201,651
45-49	317,875	167,117	150,758	317,875	167,117	150,758	317,875	167,117	150,758
50-54	240,038	120,107	119,931	240,038	120,107	119,931	240,038	120,107	119,931
55-59	191,920	95,407	96,513	191,920	95,407	96,513	191,920	95,407	96,513
60-64	157,139	77,893	79,246	157,139	77,893	79,246	157,139	77,893	79,246
65-69	137,788	68,246	69,542	137,788	68,246	69,542	137,788	68,246	69,542
70-74	101,415	49,546	51,869	101,415	49,546	51,869	101,415	49,546	51,869
75-79	62,414	31,409	31,005	62,414	31,409	31,005	62,414	31,409	31,005
80+	40,263	20,985	19,278	40,263	20,985	19,278	40,263	20,985	19,278
<b>Total</b>	<b>8,274,270</b>	<b>4,043,830</b>	<b>4,230,440</b>	<b>8,274,270</b>	<b>4,043,830</b>	<b>4,230,440</b>	<b>8,274,270</b>	<b>4,043,830</b>	<b>4,230,440</b>
<b>2005</b>									
0-4	1,198,167	597,870	600,298	1,197,274	597,423	599,851	1,198,167	597,870	600,298
5-9	1,307,566	643,093	664,473	1,306,747	642,686	664,061	1,307,566	643,093	664,473
10-14	1,182,615	567,780	614,836	1,181,886	567,418	614,469	1,182,615	567,780	614,836
15-19	1,117,983	538,653	579,329	1,117,346	538,336	579,010	1,117,983	538,653	579,329
20-24	1,014,895	494,557	520,338	1,014,343	496,282	520,061	1,014,895	494,557	520,338
25-29	905,727	436,325	469,401	905,250	436,088	469,162	905,727	436,325	469,401
30-34	712,002	342,304	369,698	711,583	342,098	369,485	712,002	342,304	369,698
35-39	595,030	284,661	310,369	594,667	284,482	310,185	595,030	284,661	310,369
40-44	494,171	247,168	247,003	493,862	247,017	246,845	494,171	247,168	247,003
45-49	319,524	204,421	187,103	391,263	204,292	186,971	319,524	204,421	187,103
50-54	297,437	148,638	148,799	297,222	148,533	148,689	297,437	148,638	148,799
55-59	237,070	117,772	119,298	236,894	117,686	119,208	237,070	117,772	119,298
60-64	193,284	95,521	97,762	193,141	95,453	97,688	193,284	95,521	97,762
65-69	168,040	83,204	84,836	167,926	83,150	84,776	168,040	83,204	84,836
70-74	123,105	59,805	63,300	123,023	59,767	63,256	123,105	59,805	63,300
75-79	76,695	38,197	38,499	76,644	38,173	38,471	76,695	38,197	38,499
80+	57,530	30,170	27,360	57,488	30,150	27,338	57,530	30,170	27,360
<b>Total</b>	<b>10,072,839</b>	<b>4,930,137</b>	<b>5,142,702</b>	<b>10,066,559</b>	<b>4,927,032</b>	<b>5,139,527</b>	<b>10,072,839</b>	<b>4,930,137</b>	<b>5,142,702</b>

**Table A.2 Contd**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2010</b>									
0-4	1,459,133	728,880	730,253	1,375,167	686,913	688,254	1,313,987	656,339	657,648
5-9	1,495,546	739,800	755,746	1,492,926	738,493	754,433	1,492,507	738,287	754,221
10-14	1,456,445	701,195	755,250	1,453,948	699,975	753,973	1,453,473	699,758	753,715
15-19	1,357,129	655,695	701,434	1,354,832	654,568	700,263	1,354,336	654,339	699,997
20-24	1,226,212	598,079	628,133	1,224,159	597,066	627,093	1,223,677	596,835	626,842
25-29	1,091,394	526,971	564,423	1,089,582	526,083	563,499	1,089,131	525,872	563,259
30-34	865,935	417,718	448,217	864,455	416,996	447,460	864,158	416,856	447,302
35-39	726,169	348,060	378,109	724,916	347,451	377,465	724,685	347,345	377,340
40-44	605,216	302,356	302,860	604,163	301,829	302,334	603,983	301,733	302,249
45-49	480,626	250,262	230,364	479,775	249,824	229,951	479,653	249,748	229,905
50-54	367,974	183,169	184,805	367,305	182,836	184,469	367,237	182,798	184,439
55-59	293,838	145,814	148,024	293,299	145,547	147,752	293,251	145,520	147,732
60-64	238,370	117,702	120,668	237,933	117,487	120,446	237,893	117,464	120,429
65-69	205,144	101,165	103,980	204,778	100,986	103,793	204,730	100,958	103,772
70-74	150,154	72,941	77,213	149,888	72,813	77,075	149,850	72,791	77,059
75-79	93,584	46,248	47,337	93,418	46,167	47,251	93,395	46,153	47,242
80+	75,795	39,466	36,330	75,658	39,396	36,261	75,644	39,385	36,259
<b>Total</b>	<b>12,188,661</b>	<b>5,975,518</b>	<b>6,213,144</b>	<b>12,086,201</b>	<b>5,924,430</b>	<b>6,161,771</b>	<b>12,021,591</b>	<b>5,892,181</b>	<b>6,129,411</b>
<b>2015</b>									
0-4	1818,706	909,407	909,299	1,597,927	798,951	798,976	1,370,583	685,223	685,360
5-9	1,797,929	891,014	906,916	1,693,029	838,956	854,073	1,615,005	800,243	814,762
10-14	1,654,020	802,376	851,644	1,649,241	799,996	849,245	1,645,855	798,330	847,525
15-19	1,654,529	801,314	853,215	1,649,806	798,967	850,839	1,646,264	797,224	849,041
20-24	1,478,147	722,156	755,991	1,473,915	720,035	753,880	1,470,714	718,438	752,276
25-29	1,311,267	634,169	677,098	1,307,520	632,309	675,211	1,304,648	630,896	673,752
30-34	1,048,464	506,682	541,782	1,045,446	505,186	540,260	1,043,251	504,104	539,147
35-39	882,940	424,794	458,146	880,394	423,539	456,855	878,571	422,644	455,927
40-44	738,796	368,674	370,122	736,660	367,586	369,073	735,155	366,805	368,350
45-49	590,167	306,000	284,168	588,449	305,093	283,356	587,285	304,454	282,831
50-54	453,991	226,081	227,910	452,662	225,406	227,256	451,808	224,961	226,847
55-59	363,925	179,904	184,021	362,856	1789,365	183,491	362,184	179,017	183,167
60-64	295,194	145,564	149,630	294,326	145,128	149,198	293,780	144,845	148,935
65-69	251,263	123,672	127,591	250,529	123,304	127,225	250,040	123,049	126,991
70-74	182,475	88,782	94,693	182,940	88,518	94,422	182,579	88,333	94,245
75-79	114,847	56,619	58,228	114,512	56,451	58,061	114,287	56,332	57,955
80+	96,417	49,705	46,712	96,134	49,558	46,576	95,954	49,455	46,499
<b>Total</b>	<b>14,734,076</b>	<b>7,236,914</b>	<b>7,497,163</b>	<b>14,376,346</b>	<b>7,058,348</b>	<b>7,317,998</b>	<b>14,047,963</b>	<b>6,894,352</b>	<b>7,153,612</b>

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2020</b>									
0-4	2,251,274	1,130,915	1,120,359	1,782,884	895,391	887,493	1,451,728	728,887	722,841
5-9	2,213,827	1,101,343	1,112,484	1,942,943	966,318	976,625	1,666,087	828,351	837,735
10-14	1,975,043	962,676	1,102,367	1,857,517	905,108	952,409	1,771,206	862,819	908,387
15-19	1,860,037	907,974	952,063	1,852,335	903,948	948,387	1,847,696	904,459	946,238
20-24	1,789,651	876,225	916,425	1,782,255	872,347	909,908	1,777,664	869,866	907,798
25-29	1,572,070	762,806	809,264	1,565,544	759,415	806,129	1,561,485	757,249	804,236
30-34	1,265,514	612,929	652,585	1,260,286	610,217	650,068	1,257,177	608,551	684,626
35-39	1,067,986	515,128	552,858	1,063,580	512,852	550,728	1,061,003	511,475	549,528
40-44	897,647	448,301	449,346	893,941	446,319	447,621	891,802	445,113	446,689
45-49	722,532	373,551	348,982	719,557	371,907	347,650	717,884	370,908	346,976
50-54	560,507	279,236	281,271	558,215	278,014	280,201	556,992	277,315	279,677
55-59	449,714	222,852	226,862	447,881	221,880	226,000	446,918	221,330	225,588
60-64	365,553	179,945	185,608	364,061	179,160	184,901	363,276	178,712	184,564
65-69	309,365	152,358	157,007	308,096	151,691	156,405	307,390	151,286	156,104
70-74	225,307	109,263	116,044	224,382	108,785	115,597	223,862	108,490	115,372
75-79	141,542	69,677	71,865	140,961	69,372	71,588	140,636	69,181	71,455
80+	121,640	62,474	59,165	121,142	62,202	58,939	120,877	62,035	58,843
<b>Total</b>	<b>17,789,208</b>	<b>8,767,653</b>	<b>9,021,555</b>	<b>16,885,578</b>	<b>8,314,926</b>	<b>8,570,652</b>	<b>16,163,683</b>	<b>7,953,028</b>	<b>8,210,655</b>
<b>2025</b>									
0-4	2,734,588	1,374,329	1,360,259	2,084,894	1,047,155	1,037,739	1,470,155	737,887	732,268
5-9	2,700,806	1,350,461	1,350,345	2,140,089	1,069,460	1,070,629	1,741,242	869,589	871,653
10-14	2,412,719	1,182,720	1,229,999	2,118,641	1,037,933	1,080,708	1,815,226	888,658	926,569
15-19	2,197,275	1,077,320	1,119,955	2,067,507	1,013,038	1,054,468	1,969,600	964,418	1,005,182
20-24	1,996,626	984,240	1,012,386	1,989,328	980,030	1,009,298	1,982,589	976,065	1,006,523
25-29	1,891,367	920,317	971,050	1,884,470	916,388	968,083	1,877,982	912,634	965,348
30-34	1,522,205	739,398	782,807	1,516,726	736,275	780,451	1,511,780	733,389	778,391
35-39	1,286,356	621,662	664,695	1,281,753	619,048	662,704	1,277,651	616,661	660,989
40-44	1,083,708	540,568	543,140	1,079,833	538,295	541,538	1,076,410	536,204	540,206
45-49	879,052	453,402	425,650	875,927	451,501	424,426	873,234	449,768	423,466
50-54	688,648	343,119	345,528	686,262	341,716	344,546	684,277	340,477	343,800
55-59	554,973	275,112	279,862	553,064	273,991	279,073	551,499	273,014	278,485
60-64	450,568	222,232	228,336	449,018	221,327	227,691	447,741	220,530	227,211
65-69	379,834	186,498	193,336	378,501	185,724	192,777	377,357	185,015	192,342
70-74	277,194	134,471	142,723	267,219	133,911	142,307	275,373	133,393	141,981
75-79	174,599	85,874	88,725	173,984	85,516	88,469	173,455	85,181	88,275
80+	152,577	77,913	74,664	152,048	77,592	74,456	151,610	77,293	74,317
<b>Total</b>	<b>21,383,094</b>	<b>10,569,636</b>	<b>10,813,458</b>	<b>19,708,262</b>	<b>9,728,900</b>	<b>9,979,362</b>	<b>18,257,178</b>	<b>9,000,175</b>	<b>9,257,003</b>

**Table A.3: Projected Rural Population by Variant**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2000</b>									
0-4	1,850,921	932,460	918,461	1,850,921	932,460	918,461	1,850,921	932,460	918,461
5-9	1,402,015	711,036	690,976	1,402,015	711,036	690,976	1,402,015	711,036	690,976
10-14	1,181,938	611,157	570,781	1,181,938	611,157	570,781	1,181,938	611,157	570,781
15-19	957,808	495,212	462,596	957,808	495,212	462,596	957,808	495,212	462,596
20-24	798,003	406,907	391,096	798,003	406,907	391,096	798,003	406,907	391,096
25-29	671,424	344,774	326,650	671,424	344,774	326,650	671,424	344,774	326,650
30-34	646,392	328,397	317,995	646,392	328,397	317,995	646,392	328,397	317,995
35-39	575,349	292,112	283,237	575,349	292,112	283,237	575,349	292,112	283,237
40-44	510,196	247,496	262,700	510,196	247,496	262,700	510,196	247,496	262,700
45-49	462,316	215,606	246,710	462,316	215,606	246,710	462,316	215,606	246,710
50-54	419,156	200,857	218,299	419,156	200,857	218,299	419,156	200,857	218,299
55-59	357,624	169,412	188,212	357,624	169,412	188,212	357,624	169,412	188,212
60-64	288,408	134,524	153,884	288,408	134,524	153,884	288,408	134,524	153,884
65-69	205,655	92,705	112,950	205,655	92,705	112,950	205,655	92,705	112,950
70-74	143,664	63,680	79,984	143,664	63,680	79,984	143,664	63,680	79,984
75-79	91,849	38,773	53,076	91,849	38,773	53,076	91,849	38,773	53,076
80+	75,091	28,444	46,647	75,091	28,444	46,647	75,091	28,444	46,647
<b>Total</b>	<b>10,637,809</b>	<b>5,313,552</b>	<b>5,324,257</b>	<b>10,637,809</b>	<b>5,313,552</b>	<b>5,324,257</b>	<b>10,637,809</b>	<b>5,313,552</b>	<b>5,324,257</b>
<b>2005</b>									
0-4	1,834,427	929,102	905,326	1,834,427	929,102	905,326	1,834,427	929,102	905,326
5-9	1,488,173	755,829	732,344	1,488,173	755,829	732,344	1,488,173	755,829	732,344
10-14	1,240,794	643,723	597,070	1,240,794	643,723	597,070	1,240,794	643,723	597,070
15-19	997,655	517,040	480,614	997,655	517,040	480,614	997,655	517,040	480,614
20-24	827,817	422,947	404,870	827,817	422,947	404,870	827,817	422,947	404,870
25-29	695,666	358,721	336,946	695,666	358,721	336,946	695,666	358,721	336,946
30-34	675,298	343,727	331,571	675,298	343,727	331,571	675,298	343,727	331,571
35-39	602,919	306,795	296,124	602,919	306,795	296,124	602,919	306,795	296,124
40-44	534,567	259,554	275,013	534,567	259,554	275,013	534,567	259,554	275,013
45-49	487,325	225,656	261,669	487,325	225,656	261,669	487,325	225,656	261,669
50-54	444,102	212,643	231,459	444,102	212,643	231,459	444,102	212,643	231,459
55-59	377,705	178,893	198,812	377,705	178,893	198,812	377,705	178,893	198,812
60-64	303,354	141,122	162,232	303,354	141,122	162,232	303,354	141,122	162,232
65-69	214,458	96,702	117,756	214,458	96,702	117,756	214,458	96,702	117,756
70-74	149,188	65,768	83,420	149,188	65,768	83,420	149,188	65,768	83,420
75-79	96,667	40,346	56,322	96,667	40,346	56,322	96,667	40,346	56,322
80+	91,561	34,988	56,573	91,561	34,988	56,573	91,561	34,988	56,573
<b>Total</b>	<b>11,061,678</b>	<b>5,533,555</b>	<b>5,528,123</b>	<b>11,061,678</b>	<b>5,533,555</b>	<b>5,528,123</b>	<b>11,061,678</b>	<b>5,533,555</b>	<b>5,528,123</b>

**Table A.3: Contd.**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2010</b>									
0-4	1,910,589	969,309	941,280	1,806,434	916,434	890,000	1,726,615	875,926	850,688
5-9	1,455,785	744,047	711,737	1,458,401	745,353	713,048	1,458,823	745,560	713,263
10-14	1,306,920	680,288	626,632	1,309,463	681,532	627,931	1,309,892	681,725	628,167
15-19	1,035,666	538,569	497,097	1,037,964	539,696	498,268	1,038,458,	539,924	498,534
20-24	855,144	437,668	417,476	857,194	438,679	418,515	857,679	438,912	418,767
25-29	716,759	370,720	346,040	718,569	371,606	346,963	719,023	371,818	347,204
30-34	702,361	358,932	343,430	703,839	359,653	344,186	704,138	359,793	344,344
35-39	629,220	321,001	308,220	630,469	321,607	308,863	630,705	321,716	308,989
40-44	559,836	271,696	288,140	560,888	272,221	288,667	561,069	272,318	288,751
45-49	511,743	236,401	275,342	521,594	236,840	275,755	512,716	236,915	275,801
50-54	469,942	224,243	245,699	470,609	224,574	246,035	470,679	224,614	246,066
55-59	400,390	189,539	210,851	400,926	189,804	211,122	400,976	189,833	211,143
60-64	319,962	148,808	171,154	320,396	149,022	171,374	320,438	149,046	171,392
65-69	223,963	100,613	123,349	224,326	100,791	123,535	224,377	100,820	123,557
70-74	155,602	68,641	86,961	155,866	68,768	87,098	155,906	68,791	87,116
75-79	100,988	41,802	59,186	101,153	41,882	59,271	101,177	41,897	59,281
80+	103,380	39,165	64,215	103,518	39,235	64,283	103,532	39,246	64,286
<b>Total</b>	<b>11,458,248</b>	<b>5,741,440</b>	<b>5,716,809</b>	<b>11,372,609</b>	<b>5,697,696</b>	<b>5,674,913</b>	<b>11,296,199</b>	<b>5,658,854</b>	<b>5,637,346</b>
<b>2015</b>									
0-4	2,033,500	1,033,677	999,822	1,796,597	913,262	883,335	1,546,450	786,102	760,348
5-9	1,493,911	765,766	728,145	1,415,760	725,672	690,088	1,356,503	695,276	661,226
10-14	1,267,406	665,186	602,220	1,272,183	667,565	604,618	1,275,571	669,233	606,338
15-19	1,077,423	562,316	515,107	1,082,193	564,689	517,504	1,085,688	566,407	519,281
20-24	879,398	451,437	427,952	883,621	453,558	430,063	886,821	455,154	431,667
25-29	734,557	381,086	353,471	738,302	382,945	355,356	741,176	384,359	356,817
30-34	725,702	371,983	353,718	728,718	373,479	355,239	730,915	374,562	356,354
35-39	653,025	334,750	318,275	655,573	336,009	319,563	657,394	336,900	320,493
40-44	583,274	283,066	300,209	585,414	284,158	301,256	586,916	284,936	301,980
45-49	536,687	246,989	289,699	538,405	247,895	290,510	539,570	248,535	291,035
50-54	495,044	236,552	258,492	496,373	237,229	259,145	497,227	237,672	259,554
55-59	423,513	199,873	223,640	424,579	200,412	224,168	425,253	200,761	224,493
60-64	338,362	157,291	181,072	339,226	157,725	181,501	339,776	158,010	181,766
65-69	234,201	105,104	129,097	234,931	105,470	129,460	235,424	105,726	129,698
70-74	162,343	71,390	90,953	162,874	71,652	91,222	163,239	71,838	91,400
75-79	105,829	43,727	62,102	106,162	43,894	62,268	106,389	44,014	62,375
80+	112,614	42,151	70,464	112,897	42,298	70,599	113,078	42,401	70,677
<b>Total</b>	<b>11,856,780</b>	<b>5,952,345</b>	<b>5,904,435</b>	<b>11,573,804</b>	<b>5,807,910</b>	<b>5,765,894</b>	<b>11,287,387</b>	<b>5,661,886</b>	<b>5,625,502</b>

**Table A.3 Contd.**

Age Group	High Variant			Medium Variant			Low Variant		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>2020</b>									
0-4	2,147,532	1,097,604	1,049,928	1,715,043	876,791	838,252	1,402,686	717,272	685,414
5-9	1,568,469	807,867	760,602	1,390,291	716,257	674,034	1,198,940	617,718	581,158
10-14	1,290,460	681,119	609,341	1,226,388	647,254	579,134	1,176,488	620,934	555,554
15-19	1,032,555	543,610	488,945	1,040,260	547,647	492,613	1,044,896	550,125	494,771
20-24	906,931	467,203	439,728	914,378	471,119	443,259	918,918	473,562	445,356
25-29	750,080	390,943	359,137	756,614	394,349	362,265	760,665	396,500	364,165
30-34	746,497	383,950	362,547	751,729	386,674	365,055	754,834	388,329	366,505
35-39	673,309	346,413	326,896	677,714	348,698	329,016	680,292	350,066	330,225
40-44	604,092	293,717	310,375	607,798	295,708	312,090	609,937	296,905	313,032
45-49	560,479	257,313	303,166	563,463	258,973	304,490	565,127	259,955	305,172
50-54	521,354	249,444	271,910	523,651	250,677	272,974	524,869	251,365	273,504
55-59	446,432	211,400	235,031	448,272	212,385	235,887	449,229	212,923	236,306
60-64	357,488	166,015	191,473	358,982	166,811	192,171	359,764	167,248	192,516
65-69	245,880	110,512	135,368	247,151	111,190	135,961	247,855	111,584	136,271
70-74	169,944	74,979	94,965	170,869	75,466	95,403	171,389	75,752	95,637
75-79	111,239	45,919	65,320	111,820	46,231	65,590	112,145	46,414	65,731
80+	121,331	45,217	76,114	121,829	45,496	76,333	122,094	45,656	76,437
<b>Total</b>	<b>12,254,071</b>	<b>6,173,226</b>	<b>6,080,845</b>	<b>11,626,252</b>	<b>5,851,725</b>	<b>5,774,527</b>	<b>11,100,126</b>	<b>5,582,371</b>	<b>5,517,755</b>
<b>2025</b>									
0-4	2,225,557	1,138,960	1,086,597	1,709,960	875,679	834,281	1,213,466	621,845	591,621
5-9	1,631,711	845,482	786,229	1,305,226	676,862	628,363	1,070,760	555,741	515,019
10-14	1,344,347	714,167	630,180	1,192,331	633,754	558,577	1,030,620	548,073	482,547
15-19	1,039,538	550,277	489,261	989,227	523,975	465,251	952,059	504,622	447,437
20-24	862,049	447,602	414,447	869,350	451,824	417,526	876,087	455,777	420,310
25-29	768,552	402,247	366,305	775,500	406,214	369,286	781,937	409,931	372,007
30-34	765,258	395,193	370,065	770,744	398,330	372,414	775,683	401,201	374,481
35-39	691,273	356,751	334,522	695,876	359,373	336,503	699,979	361,751	338,227
40-44	621,718	302,217	319,501	625,597	304,503	321,094	629,016	306,581	322,435
45-49	581,662	266,531	315,131	584,788	268,441	316,347	587,480	270,165	317,315
50-54	546,444	261,696	284,748	548,839	263,116	285,723	550,815	264,338	286,477
55-59	470,041	222,837	247,204	471,956	223,969	247,987	473,515	224,934	248,581
60-64	375,890	175,059	200,830	377,446	175,977	201,469	378,716	176,761	201,955
65-69	257,511	115,456	142,005	258,848	116,241	142,607	259,988	116,939	143,049
70-74	178,271	78,748	99,523	179,249	79,317	99,932	180,092	79,827	100,266
75-79	117,029	48,292	68,736	117,644	48,657	68,986	118,172	48,985	69,187
80+	130,060	48,129	81,932	130,589	48,458	82,132	131,028	48,749	82,279
<b>Total</b>	<b>12,606,910</b>	<b>6,369,642</b>	<b>6,237,268</b>	<b>11,603,173</b>	<b>5,854,693</b>	<b>5,748,480</b>	<b>10,709,414</b>	<b>5,396,221</b>	<b>5,313,193</b>



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