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# **THE POPULATION OF GHANA**

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# THE POPULATION OF GHANA

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## CONTENTS

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	Page
CHAPTER I – POPULATION GROWTH . . . . .	3
CHAPTER II – COMPONENTS OF POPULATION GROWTH – Fertility, Mortality and International Migration . . . . .	9
CHAPTER III – POPULATION COMPOSITION . . . . .	31
CHAPTER IV – POPULATION DISTRIBUTION AND INTERNAL MIGRATION . . . . .	56
CHAPTER V – THE LABOUR FORCE. . . . .	76
CHAPTER VI – POPULATION GROWTH AND SOCIO-ECONOMIC IMPLICATIONS . . . . .	100
BIBLIOGRAPHY . . . . .	129
APPENDIX – POPULATION PROJECTIONS . . . . .	134

## CHAPTER I

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# POPULATION GROWTH

**Introduction.** Ghana, with its 92,100 square miles, occupies only 0.8 per cent of the area of Africa and 0.2 per cent of that of the world. It lies almost half way between Dakar in Senegal and Cameroon on the coast of the Gulf of Guinea, and from the southern-most point at latitude  $4^{\circ}44'$  North, it extends for a distance of over 400 miles to latitude  $11^{\circ}10'$  North. The extreme western and eastern points stretch as far as longitudes  $3^{\circ}15'$  West and  $1^{\circ}12'$  East. The sea coast is about 344 miles and international boundaries extend for 1,280 miles. Upper Volta, Togo and Ivory Coast are her northern, eastern and western neighbours respectively.

The major part of Ghana consists mainly of plateaux of varying elevations. Second only to these in area is the Voltain sandstone basin covering about 43,450 sq. miles (Dickson & Benneh 1970: 18). A narrow strip of coastal plain stretches inland for over fifty miles in the east and west and less than ten miles in the centre. Four major regions have been recognized: (i) the humid south-western equatorial rain forest region with a mean annual rainfall of about 75 inches and mean monthly temperature ranging between  $86^{\circ}\text{F}$  and  $79^{\circ}\text{F}$ ; (ii) the wet semi-equatorial forest region exhibiting the same climatic conditions prevalent in the south-western equatorial rain forest except that the dry season is more pronounced in the former than in the latter; (iii) the hot savannah woodland region covering about 65,000 square miles of the northern half of the country; (iv) the hot coastal scrub and grassland which is the driest region and stretches along the coast from Sekondi in the Western Region to Ada in the Volta Region.

In March 1957, Ghana, a former British Colony known as the Gold Coast, achieved political independence. The new name, Ghana, emerged out of a belief that there was an historical connexion between the modern Ghana and a "powerful Negro Kingdom . . . known as Ghana" (Balmer 1929: 26ff). Tradition has it that this powerful state existed for nearly ten centuries before it was destroyed by hostile enemies. It has even been suggested that its history may probably be traced back to 600 B.C. (Balmer 1929). Doubts have been expressed about the existence of historical ties between the two Ghanas; one of the contemporary writers of Ghana's political history has observed that "the connexion between the ancient and the modern Ghana is still largely a matter for

controversy and research" (Kimble 1963: XV). The theories which have been propounded about the origins of the peoples who first inhabited modern Ghana and the directions of the movements of the various ethnic groups across the country to where they now live are yet to be completely substantiated. The Akans are said to have migrated to Ghana from the so-called ancient Ghana; the Ga-Adangbe from Nigeria; and the Ewe from Nigeria and Dahomey. The peoples of Northern Ghana -- i.e. the Northern and Upper Regions -- are supposed to have entered the country from somewhere in the north or north-east of Ghana (Dickson & Benneh 1970: 7). Historical and archaeological evidence indicate that modern Ghana has been inhabited by human beings for very many centuries. However, it is the recent rapid increase in the number of these people which has attracted the attention of demographers and other social scientists since the beginning of the second half of this century.

The recorded demographic history of Ghana dates back to 1891 when the British colonial administration made the first attempt to count the people of the then Gold Coast Colony. This was followed by decennial censuses until the Second World War interrupted the sequence in 1941. However, the 1921 Census was the first to cover the whole area now known as the Republic of Ghana. The last count of the population of pre-independence Ghana took place in 1948, three years after the war had ended.

The quality of the returns of some of these "censuses" is so questionable that they can hardly be used to gauge accurately the past population trends. Although they indicate a continuing population growth, the precise rate of growth since the beginning of the present century cannot be known because the "censuses" were so incomplete and defective that one can have very little confidence in the reliability of some of the results even when all possible adjustments and refinements have been made (Caldwell 1967: 20ff; Gaisie 1964: Chapter 1). However, post-World War II witnessed an improvement in data collection in Ghana. The year 1960 ushered in a considerable improvement in census-taking in Ghana with regard to techniques, objectives and scope. The departure of the colonial government faced the Africans with the task of nation-building and it was at this juncture that the African governments became aware of the need for adequate and reliable statistics as a tool for efficient administration and planning. Africans therefore devoted significant fractions of their meagre national income to the collection of better demographic statistics and in this exercise Ghana did better than her colonial exploiters had done. Ghana spent twelve pesewas per head on her 1960 Census as compared with a tenth of a penny per head in 1931 (Caldwell 1968: 4). In 1970 the cost per head nearly tripled -- thirty five pesewas. The results of the 1960 Census have been published in eight volumes: Vols. I-IV (Vol. IV based on 5 per cent representative sample) contain general demographic and economic characteristics of the Ghana population; Volume V -- General Report -- gives a detailed account of the major aspects of the statistical and administrative operations and Volume VI contains

the Post-Enumeration Sample Survey data on the demographic, social and economic characteristics of the population, including information on fertility, mortality and migration.

Three Special Reports provide information on the following topics:

Report A: Statistics of Large Towns

Report D: List of Localities by Local Authority

Report E: Tribes in Ghana: demographic, economic and social characteristics

Special Reports B and C which deal with "Social-economic Indices of Enumeration Areas" and "Census Data on New Regions" have not yet been published. Maps of enumeration areas and statistical maps showing characteristics of the population in local authorities and regions have also been published.

The second census of the Republic of Ghana was carried out in March 1970 and the results are still being processed. To date, two of the six main volumes which will be issued in connection with the 1970 Population Census have been published: (1) Volume II: Statistics of Localities and Enumeration Areas and (2) Special Report D which contains data on list of localities by local authority classified by population, number of houses and the main source of water supply.

The following volumes and Special Reports are yet to be published, but some of the data can be obtained in mimeographed form from the Census Office:

Volume I: The Gazetteer

Volume III: Detailed Demographic Characteristics

Volume IV: Detailed Economic Characteristics

Volume V: General Report

Volume VI: The 1971 Supplementary Enquiry -- a statistical summary

Special Report A: Statistics of Large Towns

Special Report B: Socio-economic Indices of Enumeration Areas

Special Report C: Census Data for Socio-economic Regions

In addition to the main census, independent Evaluation Checks and Supplementary Enquiry were conducted in May 1970 and August/September respectively. The objective of the former, which covered a five per cent sample of the enumeration areas, was to evaluate the magnitude of the coverage errors. The 1971 Supplementary Enquiry (based on 10 per cent sample of the 1970 Population) covered all the topics included in the Main Census and the 1960 Post-Enumeration Survey and items on age of mother at first live birth and age at marriage for both sexes. On the other hand, very little effort has been

made to collect adequate and reliable vital statistics. The Ordinance Extension Ordinance (Gold Coast Gazette, Supplement 1935: 2007-56), which was passed in 1935, made registration of births and deaths compulsory in certain "towns and townships". The ordinance empowered the Governor to appoint a Principal Registrar of Births, Deaths and Burials. Under the ordinance all births and deaths occurring among 'Non-natives' and Africans in what is now known as Ghana must be registered. The registration areas covered thirty-nine towns in 1935 and in 1942 the number rose to 42. The population of the registration areas was estimated to be 355,780 -- i.e. 9 per cent of the total population of the country in 1940. In 1958 there were thirty-seven compulsory registration areas (including Tema) and by this time forty-nine Local Authorities had issued by-laws for the registration of births and deaths under Local Government Ordinance. The local council clerks who were appointed as Registrars were not under the jurisdiction of the Principal Registrar. In 1958 the registration areas covered about 12 per cent of the conservative estimate of the total population of 4,836,000. The Local Council Authority registration areas covered about 25 per cent of the total population. In 1960 the thirty-eight registration areas accounted for 16 per cent of the total population enumerated in the census. In 1970 only 23 per cent and 18 per cent of the expected births and deaths were registered in 134 out of 140 registration districts although the registration system by that time had been designed to cover about 95 per cent of the population of the country; the corresponding percentages for 1971 were 22 per cent and 20 per cent respectively (Country statement -- Ghana 1973). The registration system, which is now being administered by the Ministry of Economic Planning and being supervised by the Central Bureau of Statistics, operates mainly in the urban areas and it has so far been characterised by its incompleteness and inefficiency. The vital statistics compiled for these areas are defective and highly unreliable (Gaisie 1964: 18ff, Kpedekpo 1970).

However, the results of the 1960 and 1970 Censuses and those of the sample surveys conducted so far, i.e. 1960 Post-Enumeration Survey, 1971 Supplementary Enquiry and 1968-1969 National Demographic Sample Survey (see Gaisie 1973: 6ff), provide a factual basis for determining the population growth in Ghana.

Ghana's population of just over 2 million in 1921 increased to about 6.7 million in 1960 and 8.6 million in 1970; that is, it more than tripled in a short period of nearly forty years (i.e. 1921-1960) and increased more than five-fold within a period of nearly half a century (i.e. 1921-1970). Although data for the early part of the century are not trustworthy, they are indicative of a rapid increase in Ghana's population. Table 1.1 presents the recorded rate of growth for the period between 1921 and 1971. Although these figures may be severely affected by coverage errors, they give a rough indication of the rapid acceleration of Ghana's population growth. In view of the declining mortality and constant fertility, the recorded rate of growth of 2.4 per cent per

annum during the decade 1960-1970 appears to be too low. However, the population of Ghanaian origin increased at a rate of nearly 3.0 per cent per annum during the same period.

TABLE 1.1. – RECORDED RATES OF GROWTH – 1921-1971

Period	Unadjusted Average Annual Rate (%)
1921-1931	3.2
1931-1948	1.6
1921-1960	2.8
1931-1960	2.7
1948-1960	4.2
1960-1970	2.4
1960-1971*	2.7
<i>Source of data:</i> Census Reports	
* Supplementary Enquiry based on 10 per cent sample	

The exclusion of a few persons from the 1960 population as a result of the question on origin and the inclusion of a few persons in the 1970 population for political and other reasons might have inflated the observed rate of growth. However, the number of naturalized Ghanaians could not have been so large as to affect the size of the 1960 population to any significant degree. Furthermore, the 1960 population was reported to have been over-enumerated by between 0.6 per cent and 2.5 per cent (Census Office 1964: 384); the exact magnitude of the overcount cannot be determined in the light of the available evidence and it is therefore hazardous to over-emphasize this factor (Gaisie 1973: 402). On the other hand, the 1970 Census was conducted a few months after the 'aliens' without residence permits had been asked to leave the country and it was therefore not unlikely that a certain proportion of those who remained in Ghana might have reported themselves as Ghanaians. It is equally important, however, to note that some of these persons might have been missed in the census for almost similar reasons. Once again it is difficult to assess the relative impact of each of these two factors on the size of the 1970 census but coverage errors must also be taken into account when interpreting the recorded growth rates. A set of projections prepared by the authors indicate that the population of Ghana has been growing at a rate of 2.72 per cent between 1960 and 1965 and 2.84 per cent between 1965 and 1970; the rate of natural increase is now climbing to 2.98 per cent (Gaisie 1973: 441). These figures were based on the assumption of estimated total fertility ratio of 6.9 children per woman remaining constant during the period under discussion.

The estimated crude birth and death rates of 50.0 and 23.0 for the late 1950's and early 1960's indicate that the rate of natural increase was 2.7 per



cent during the beginning of the last decade (Gaisie 1969: 75). Recent estimates show that the rate of natural increase has risen to the neighbourhood of between 2.9 and 3.0 per cent per annum during the late 1960's and the beginning of the present decade. These rates appear to be consistent with the projected rate of 2.98 per cent and the recorded one of nearly 3.0 per cent. It is important to note that these rates are also consistent with the fertility and mortality conditions prevailing in the country (see Chapter II).

In the light of the available data and the estimates based on different types of information, the population of Ghana is at present growing at a rate of about 3.0 per cent per annum; this rate compares favourably with estimates prepared by the Population Division of the United Nations and Economic Commission for Africa: Between 3.1 and 3.2 and 3.0 per cent respectively (UN 1968: 117; ECA 1970: 15).

## CHAPTER II

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# COMPONENTS OF POPULATION GROWTH

## Fertility, Mortality and International Migration

### FERTILITY

Prolific childbearing is encouraged in traditionally oriented Ghanaian society where the social and political institutions make it not only possible but desirable and praiseworthy for a woman to bear children all through her reproductive years. The fertility performance of the nuclear family is closely watched by such consanguineous groups as the lineage or a clan whose members attach transcendent importance to the perpetuation of the line of descent. Among the Ashanti, for example, women are encouraged to have as many children as possible and a "mother of ten boasts of her achievement and is given a public ceremony of congratulations . . ." (Fortes 1950, pp. 262-3).

By contrast, barren women are given little or no prestige and are regarded with "contempt and malicious pity, and at best commiseration. Childlessness is felt by both men and women as the greatest of all personal tragedies and humiliation" (Fortes 1950: 262). Rattray had the same impression when he was working among the Ashantis (Rattray 1927: p. 66) and Cardinall described Ghana as a country which ". . . does not regard the bachelor or the spinster with favour, and the religion of animism which is so involved with ancestorship practically enforces not only marriage but child-production" (Cardinall 1931: 169). This is a very naive way of explaining high reproduction among Ghanaian tribal societies because, as already mentioned above, social, political, economic and military factors play equally if not more important roles in encouraging high fertility performance (Gaisie 1964: 110ff). A high fertility level is sustained by the ideals and values implicit in the traditional social organizations and also by certain structural features which generate strong motivation to bear many children (see Gaisie 1964: 110ff).

Apart from these inferences from anthropological and sociological findings, previous fertility studies have shown that Ghana's fertility is one of the highest in the world and this phenomenon has been haunting the social and economic planners long before Nkrumah's regime came to an end (Seven-Year Development Plan 1964: 7). That Ghana's high fertility plays a major role in the

country's rapid population growth is reflected quite vividly in the measures which have been taken recently by the government and private organizations to implement a Family Planning Programme which is outlined in the country's population policy document: "Population Planning for National Progress and Prosperity" (Republic of Ghana 1969).

**Data on Fertility and Mortality from Censuses and Surveys** In 1931, a questionnaire was circulated to all medical officers in the country and they were asked to obtain some information on fertility and mortality from a group of 'old women' -- i.e. women who had passed their menopause. There is very little that one can do with the data obtained in this survey. Apart from the fact that it failed to provide information on the fertility of the women in the childbearing ages, the respondents were selected in such a haphazard manner that the computed completed family size of 5.8 cannot be regarded as a plausible estimate of the true figure. Barren women were also excluded from the sample (Cardinall 1931).

In 1948, a sample survey of the fertility of women aged 15 years and over formed an integral part of the year's census operations. The information sought covered age of mother, number of children born alive and number of children alive at the time of the survey (Gold Coast Census 1948). The 1948 Census commissioner observed that very limited information was obtained from the younger women, especially the unmarried and those with no children. In other words, unmarried and childless young women aged 15 years or more were rarely interviewed. While the fertility of the younger women might have been underestimated, the information given by the older women was distorted by memory lapse and other factors (Gaisie 1969: 11). Some information on past and current fertility was collected in Sekondi-Takoradi and three small towns during the 1961 Family Survey which was conducted by R.T. Smith and D. Friedlander (Gaisie 1964).

The results of these surveys, however, indicate a relatively large completed family size. The recorded average number of children born to women aged 50 years and over was about 5.8 in 1931; 6.6 in 1948; 6.2 in 1961 (rural areas) and 5.6 for Sekondi-Takoradi in 1961 (Gaisie 1968: 240). It is important to note that before the 1960 Post-Enumeration Survey results on fertility were released or made available to demographers in the late 1960's, there was virtually no information on current fertility during the period under discussion. The paucity of such important information may be attributed to the lack of a complete and efficient registration system for the provision of reliable data on births and deaths. In addition the results of the censuses conducted by the colonial government were so defective and unreliable that very little use can be made of them. Thus, during the last sixty years the data on the age-sex structures of the population and available vital statistics were so meagre and defective that very

little, if any, progress was made in the determination of fertility levels and trends in Ghana. In spite of the inaccuracy and incompleteness of the vital statistics, it has been possible to utilise the 1960 Census and Survey data to estimate the present levels of fertility and past trends. The nature and the quality of the available material have necessitated the use of various demographic techniques, some of which have been devised specifically for the derivation of plausible estimates of fertility rates from limited data on vital events. Table 2.1 gives estimates on the approximate level of the crude birth rate during the period 1945-1971.

Both the estimated and the recorded crude birth rates are over 40 per thousand, and, although all the estimates were not prepared by a uniform method, they all show that Ghana's fertility is high and that it has remained relatively unchanged during the past quarter of a century. Although the choice of the most plausible values within the ranges presented in Table 2.1 may be a matter of opinion, the analyses undertaken in the various studies indicate that a crude birth rate of 50 per thousand population may be considered the best approximate value of the true one.

TABLE 2.1. – ESTIMATED AND RECORDED CRUDE BIRTH RATES FOR GHANA

Year/Period	Estimated	Recorded
1945-1949 <sup>a</sup>	52	—
1948 <sup>b</sup>	49	—
1950-1954 <sup>c</sup>	51	—
1955-1959 <sup>c</sup>	50	—
1959-1960 <sup>d</sup>	47-55	47
1963-1964 <sup>e</sup>	52-54	—
1968 <sup>f</sup>	49-50	47
1969 <sup>f</sup>	—	—
1971 <sup>g</sup>	49.6	42

*Notes on Sources :*

- a) United Nations Demographic Yearbook, 1963, New York, 1964.
- b) S.K. Gaisie, "Some Aspects of Fertility Studies in Ghana", in J.C. Caldwell and C. Okonjo (eds.), *The Population of Tropical Africa*, London & New York, 1968, p. 239.
- c) United Nations, *op. cit.*
- d) S.K. Gaisie, *Dynamics of Population Growth in Ghana*, Ghana Publishing Corporation, 1969, Table 1, pp. 3 & 19.
- e) J.C. Caldwell, "Population Change" in W. Birmingham, I. Neustadt, E.N. Omaboe (eds.), *A Study of Contemporary Ghana, Some Aspects of Social Structure*, London & Chicago, 1967, p. 89.
- f) S.K. Gaisie, "Determinants of Population Growth in Ghana", Ph.D. Thesis held by Australian National University, Canberra, 1973.
- g) Census Office : 1971 Supplementary Enquiry Based on 10 per cent Sample.

TABLE 2.2. — ESTIMATED AND RECORDED TOTAL FERTILITY RATIOS — GHANA

Year/Period	Estimated	Recorded
1959-1960 <sup>a</sup>	6.5-7.3	6.2
1967-1968 <sup>b</sup>	6.7-7.0	6.6
1968-1969 <sup>b</sup>		6.8-6.9
1970-1971 <sup>c</sup>	6.9	5.8
<i>Notes on Sources :</i> a) S.K. Gaisie, <i>Dynamics of Population Growth . . . op. cit.</i> , p. 19. b) S.K. Gaisie, <i>Determinants of Population Growth in Ghana</i> , Ph. D. Thesis held by Australian National University, Canberra, 1973. c) Based on 1971 Supplementary Enquiry. Figures supplied by the courtesy of Mr. E.O. Tawiah of Census Office, Accra.		

TABLE 2.3. — MEAN NUMBERS OF CHILDREN BORN TO WOMEN AGED 50 YEARS &amp; OVER — GHANA 1948-1971

Year	Age	Children per Woman
1948 <sup>a</sup>	50 and over	6.6
1960 <sup>b</sup>	50 and over	6.2
1968 <sup>c</sup>	50 and over	6.0
1971 <sup>d</sup>	50 and over	6.5
<i>Notes on Sources :</i> a) 1948 Census Report, Table 31, p. 396. b) S.K. Gaisie, <i>Dynamics of Population Growth in Ghana</i> , 1969, Table 7, p. 20. c) S.K. Gaisie, <i>Determinants of Population Growth in Ghana</i> , <i>op. cit.</i> , Table V.12, p. 149. d) Based on 1971 Supplementary Enquiry.		

A more refined measure of the level of current fertility is provided by the total fertility ratio. It will be seen from Table 2.2 that both the recorded and estimated total fertility ratios range from about 6.0 to 7.3; estimates based on different analytical procedures narrow the gap to between 6.5 and 7.3. The recorded total fertility ratios of 6.9 (based on data from the 1968-1969 National Demographic Sample Survey-Registration System) and 6.8 (based on data from the 1968-1969 National Demographic Sample Survey — Second Round Survey) appear to provide a fairly accurate picture of the national fertility; a total fertility ratio of 6.9 appears to be the most plausible estimate within the range of between 6.5 and 7.3. Thus a Ghanaian woman passing through the reproductive period would bear on average, not less than six children.

In spite of distortions by errors arising from omission of children, especially those who died in infancy and those who have grown up and/or married

and left the household (Gaisie 1969 : 1), the completed family size (i.e. average parity at a specified age, say, 45 or 50 and over) has never been less than six (Table 2.3). Thus, the high fertility level portrayed by the total fertility ratio is also reflected in an unadjusted index of fertility level (i.e. completed family size). A comparison of Ghana's completed family size with that of other countries shows that the fertility of Ghana is as high as or higher than that of Latin America and Asian countries and is apparently higher than that of some other tropical African countries. It is certainly one of the highest in the world (Gaisie 1973). The estimated gross reproduction rates (the G.R.R. measures the total number of daughters a cohort of women will have) range between 3.2 and 3.5 (Gaisie 1969 : 73 ; 1973 : 297). The net reproduction rate has now been estimated to be between 2 and 2.4 (Gaisie 1973 : 297). Once again, the picture is one of high and constant fertility.

## Fertility Differentials

### *Regional Differentials*

The total fertility ratios presented in Table 2.4 indicate that Ashanti and Brong-Ahafo on one hand and the Upper on the other hand exhibit the highest and the lowest levels of fertility respectively with the remainder of the regions occupying a somewhat middle position between the two extreme cases. These findings which are based on the 1968-1969 National Demographic Sample Survey confirm the observation made earlier in a previous study (Gaisie 1969 : 25 ff) except that the Northern Region now appears to have a higher fertility than previously envisaged.

Furthermore, the consistency between the 1968 and 1971 estimated total fertility ratios for Upper Region suggests that the region's fertility level is not as low as it is portrayed by the recorded ratios of between 4.5 and 5.0 and that the difference between the fertility levels in Northern and Upper Regions may not be significantly large. Accra Capital District exhibits the lowest fertility.

### *Urban-Rural Differentials*

According to the results of the 1960 Census and the Post-Enumeration Survey, rural fertility exceeds that of the urban areas by between 10 per cent and 15 per cent (Gaisie 1969 : 29 ff) ; a narrower range of between 11 per cent and 12 per cent is suggested by the figures presented in Table 2.4. However, analysis of fertility differentials between the populations of the large towns and the areas immediately surrounding them and also between these towns and the regions in which they are located shows that the urban-rural differential (urban and rural defined in terms of all-embracing sociological, economic and

political attributes) may be larger than the one exhibited by the so-called urban and rural populations as defined in censuses. Furthermore, an analysis of intra-city fertility differences reveals that the various residential areas in Kumasi exhibit different fertility levels; the recorded total fertility rates range from 4.3 in the middle and upper socio-economic status residential area to between 6.4 and 7.1 in the low socio-economic status areas respectively. The latter areas may be described as traditionally oriented communities, at least in so far as human reproduction is concerned. On the other hand, the Accra Capital District figures show virtually no fertility differences between the three areas surveyed: 6.1, 5.7 and 6.0 respectively. However, if residential areas in Accra with the same socio-economic status as those surveyed in Kumasi had "fallen" into the sample (1968-69 National Demographic Sample Survey, Gaisie 1973: 147) they might well have repeated the pattern revealed by the Kumasi figures; the results of the analysis of socio-economic and fertility differentials by Caldwell highlighted some of these features (Caldwell 1968: 189 ff). Nevertheless the real size of the urban-rural differential is masked by a plethora of complex factors which are not adequately covered by the available statistics and it appears that a study of urban fertility patterns would provide more insight into this intricate problem.

TABLE 2.4. – SUMMARY OF ESTIMATED TOTAL FERTILITY RATIOS

	Urban-Rural	Urban	Rural
All Regions	6.7-7.0 (6.9)	6.0-6.5 (6.2)	6.7-7.1 (7.1)
Accra C.D.	6.0-6.4 (5.4)	5.7-6.0 (5.3)	6.4-6.9 (6.8)
Eastern	6.8-7.4 (7.1)	5.8-6.0 (7.1)	7.0-7.6 (7.1)
Central	6.5-7.0 (7.3)	5.6-6.0 (5.7)	6.5-7.2 (8.0)
Western	6.6-6.8 (6.7)	5.0-6.0 (6.2)	6.0-7.0 (6.9)
Volta	6.6-7.0 (6.6)	6.0-6.2 (6.6)	6.8-7.0 (6.6)
Ashanti	7.0-7.8 (7.8)	5.9-6.7 (7.0)	7.0-8.0 (8.2)
Brong-Ahafo	7.8-8.0 (7.9)	6.0-7.0 (7.3)	7.5-8.0 (8.0)
Northern	6.0-7.0 (6.4)	5.0-6.0 (6.0)	6.0-7.6 (6.6)
Upper	5.0-6.0 (6.2)	4.0-5.0 (6.9)	5.0-6.0 (6.2)
Figures in brackets estimated from 1971 <i>Supplementary Enquiry</i> data.			

Most of the urban-rural differential has been attributed to a relatively higher age at marriage in the urban areas and the use of contraceptives to a much greater extent by women in the cities than by their rural counterparts. Extended formal education is one of the main factors responsible for the postponement of marriage among educated women. Whilst this factor may have very little, if any, effect on the marriage patterns of the uneducated urban women, economic security and the use of contraceptives may play an important role in the reduction of fertility in the urban areas. These factors are likely to operate more effectively among the educated and the well-to-do urbanites than among

the uneducated and the poor town-dwellers. Thus, fertility differentials are more likely to exist between the various socio-economic classes in the cities and the big towns. And part of the observed urban-rural differential may be explained in terms of fertility differences between the socio-economic strata in the towns. Caldwell's analysis of fertility differentials shows that about half of the rural-urban differential "... can be explained by a fertility difference between rural populations and even poor urban populations, and the other half by a socio-economic fertility differential within the towns themselves". The influence of socio-economic status on fertility can be measured by one of a number of indicators like occupation, income and education etc. Caldwell constructed a socio-economic status index from occupational and educational data and applied it to sub-divisions of Ghana's major towns (Caldwell 1967: 189-213). His analysis revealed the existence of fertility differentials among the socio-economic groups (i.e. quartiles) of the urban population. In a recent study Gaisie (Gaisie 1969: 32 ff) used the level of formal education achieved by the mothers as a measure of socio-economic status. Table 11.4 and 11.5 present the total fertility ratios and completed fertility by education of women. Most of the fertility differences between the illiterates and the women with elementary schooling and those between the secondary and the university educated women can probably be explained in terms of sampling errors. Out of 184,575 women in the sample, (1960 Post-Enumeration Sample Survey) only 1,995 (i.e. 1 %) and 85 (0.1 %) had had secondary/commercial/technical and university education respectively. The average numbers of children ever born to women in the consecutive age groups show clearly the negative relationship between fertility and educational status. The completed fertility (i.e. the number of children ever born per woman aged 45 and over) is also inversely related to educational status; for the four groups in ascending order of status, the figures are 6.2, 5.5, 2.1 and 0.4. In both urban and rural areas fertility is inversely related to educational status. The non-educated women exhibit higher fertility than women with elementary schooling and the latter's completed fertility exceeds that of the secondary-educated women in the urban and rural areas by 51 % and 85 % respectively. It will be seen from Tables 2.5 and 2.6 that the university educated mothers exhibit the lowest fertility.

TABLE 2.5. – FERTILITY BY EDUCATIONAL STATUS OF WOMEN

Educational Status	Total Fertility	Completed Fertility
No Education	6.2	6.2
Elementary	6.4	5.5
Secondary	2.9	2.1
University	4.1	0.4
<i>Source : S.K. Gaisie, Dynamics of Population Growth, op. cit., p. 32.</i>		



TABLE 2.6. – FERTILITY BY EDUCATIONAL STATUS &amp; URBAN-RURAL RESIDENCE

Educational Status	Total Fertility Ratio		Completed Fertility	
	Urban	Rural	Urban	Rural
No Education	5.5	6.4	5.7	6.2
Elementary	5.8	6.9	5.2	5.9
Secondary	2.8	3.4	2.5	1.0
University	4.5	2.5	0.4	–
<i>Source : S.K. Gaisie, Dynamics of Population Growth, op. cit., p. 33.</i>				

Fertility and Religion With the exception of the Moslems, who exhibit the lowest fertility, there are no significant fertility differentials among the major religious groups (Tables 2.7 and 2.8). Within each religious group, rural fertility tends to be higher than urban fertility and there are relatively no significant differences among either urban or rural women with

TABLE 2.7. – FERTILITY BY RELIGION OF WOMEN

Religion	Total Fertility	Completed Fertility
Christian	6.4	6.2
Moslem	5.8	5.3
Traditional	6.1	6.1
No Religion	6.1	6.3
<i>Source : S.K. Gaisie, op. cit., 1969, p. 35.</i>		

TABLE 2.8. – FERTILITY BY RELIGION OF WOMEN AND URBAN-RURAL RESIDENCE

Religion	Total Fertility		Completed Fertility	
	Urban	Rural	Urban	Rural
Christian	5.4	6.8	5.6	6.6
Moslem	5.2	6.1	4.9	5.5
Traditional	5.7	6.2	5.8	6.1
No Religion	5.2	6.4	5.5	6.5
<i>Source : S.K. Gaisie op. cit., 1969, pp. 35 &amp; 36</i>				

different religious affiliations. Although the real size of the fertility differences, if any, among the major religions might have been obscured by the fact that the data were not collected on the basis of the intensity of religious devotion, but instead according to "a person's own declaration or profession of religious faith", it appears that religion, unlike urban-rural residence and socio-economic or educational status, has little or no influence on fertility levels in Ghana.

**Fertility and Ethnic Groups.** In general the ethnic groups may be classified according to three broad fertility categories :

a) high fertility tribes -- Asante and Ahafo, Akyem, Kwahu, Brong, Adangbe, Gurma and Central Togo tribes ;

b) moderately high-fertility -- Fante (including the Agonas), Nzema, Akuapem, Ga, Wasa, Guan, Ewe, Dagaba, Mamprusi, Lobi and Yoruba ;

c) low-fertility tribes -- Grusi, Builsa, Frafra, Kusasi, Mossi, Konkomba and Dagomba.

TABLE 2.9. – FERTILITY BY MAJOR ETHNIC GROUPS

Ethnic Group	Total Fertility	Completed Fertility
Akan	6.6	6.6
Ga-Adangbe	5.8	6.0
Guan	6.3	6.4
Ewe	6.6	5.6
Central Togo tribes	6.4	7.2
Gurma	5.6	6.8
Mole-Dagbani	5.3	5.1
Grusi	5.0	4.6
Lobi	6.2	5.4

There are indications of the existence of fertility differentials between ethnic groups and this may be attributed in part to education, degree of urbanization, physical mobility, differential sex ratios, and in part to malnutrition, diseases and constitutional and aetiological sterility which tend to depress fecundity. Differential reporting of vital events may also account for part of the fertility differentials. The Akans show the highest fertility rates, followed by the remainder of the non-Northern and Upper Region's ethnic groups with moderately high fertility, and the lowest is found among the Northern and Upper Regions' ethnic groups, except the Mamprusi, Gurma and the Dagaba, who exhibit high fertility levels.

TABLE 2.10. – FERTILITY BY TRIBES

Ethnic Group	Total Fertility	Completed Fertility
Akan	6.6	6.6
Asante and Ahafo	7.3	6.9
Fante	6.5	6.4
Nzema	5.2	6.1
Akyem	5.9	6.6
Akuapem	5.2	6.3
Kwahu	7.3	6.6
Wasa	5.3	6.5
Brong (including Banda)	7.2	6.6
Ga-Adangbe	5.8	6.0
Ga	5.6	5.4
Adangbe	5.8	6.6
Guan	6.3	6.4
Ewe	6.6	5.9
Gurma	5.6	6.8
Konkomba	4.4	5.6
Lobi	6.2	5.4
Grusi	5.0	4.6
Central Togo tribes	6.4	7.2
Mole-Dagbani	5.3	5.1
Dagomba	4.8	5.2
Mamprusi	6.3	5.2
Dagaba	6.6	6.1
Builsa	5.1	4.3
Frafra	4.0	4.3
Kusasi	5.2	5.0
Mosi	5.9	4.7
Yoruba	6.1	5.5

*Source : S.K. Gaisie, Dynamics of Population Growth, op. cit., pp. 39 & 40*

## MORTALITY

**Introduction.** Reducing mortality and prolonging the human life span has been one of the major concerns of the governments in tropical Africa and this has been an area of human activity where the goals are rarely in conflict with other national objectives. A survey of the Commonwealth African countries noted that "... governments regard health as a major concern and all unqualifiedly feel that the most rapid reduction possible of death rates is a desirable aim. Most point to the expenditure of a large proportion of the budget on health, the extension of health services, especially into rural areas, mass campaigns against specified diseases, and the securing of assistance from

such international organizations as W.H.O. and U.N.I.C.E.F.” (Caldwell and Okonjo 1968: 370).

It has been estimated that West Africa's public health expenditures average about 10 per cent of the national budgets (Gwatkin 1973). Ghana's current expenditure on health services increased by about 56 per cent within a period of two years (1967-1969) and the capital expenditure during the same period nearly quadrupled (Republic of Ghana 1969: 29-30). Reports on socio-economic development in West Africa almost invariably contain paragraphs describing the various attempts which are being made to control communicable diseases (Caldwell *et al.*, 1973; Mahoney 1970: 2ff, Cummings 1970: 3ff; E.C.A. 1971: 10ff) and all development plans aim at improving the health facilities and standards of living in order to increase life expectancy. In Tanzania, for example, the 1964-1969 health plan aimed at increasing the expectation of life from 35-40 to 50 by 1980 and the 1966-1971 Gabon one was designed to organize the health services in such a way as to make medical facilities available to as many people as practicable (E.C.A. 1971: 11). The fight against infectious diseases is, however, made much more difficult and expensive by the very nature of the hostile physical environment in the tropics which provides a comfortable breeding ground for these diseases and their vectors. Furthermore, lack of funds, skilled manpower, equipment and other facilities militate against the expansion of public health services into the rural areas.

In Ghana the fight against communicable diseases has been waged vigorously by the Epidemiological Division of the Ministry of Health. During 1967, its activities were classified as follows:

- (i) the development of recording systems for communicable diseases ;
- (ii) the small-pox and measles vaccination programmes ;
- (iii) the tuberculosis control programme ;
- (iv) the leprosy control programme ;
- (v) the anti-malarial services ;
- (vi) the onchocerciasis control programme ;
- (vii) the bilharziasis control pilot programme.

In addition to these preventive and environmental health activities, personal health services are provided by doctors (669 in 1971), nurses and health technicians. However, indexes such as the doctor-population ratio (1 per 11,000 in 1971) bed-population ratio (general hospitals: 1 bed per 830; psychiatric hospitals: 1 bed per 11,600; leprosy hospitals: 1 bed per 153,600) (Republic of Ghana 1969: 67) are all indicative of lack of adequate curative and preventive health services. Although there have been slight increases in the doctor and bed-population ratios between 1965 and 1971 (Corsa and Oakley 1971) the majority of the rural people are not provided with medical facilities.

Nevertheless, the mere existence of the Ministry of Health, hospitals, urban and rural health centres and organized public health services, as briefly outlined above, demonstrate the efforts being made to lower mortality. In fact, the scanty mortality statistics indicate that the death rate is declining, perhaps more rapidly than one would have expected, and the result of this is a widening of the gap between the two major determinants of population growth in Ghana, fertility and mortality. However, the precise level of mortality and the extent to which it is declining have not been adequately studied and this has led to the preparation of estimates of the rate of population growth of uncertain reliability.

**Data on Mortality.** As stated in Chapter I, there is virtually no reliable and adequate information on mortality and although various attempts have been made to estimate the general level of mortality from the data on the proportions of surviving children out of the total number of children ever born (Gaisie 1969; Gaisie 1973; 166ff), lack of information on adult mortality has raised some doubts as to the trustworthiness of the estimates of general mortality levels. The determination of mortality levels, trends and differentials is therefore based on the 1968-1969 National Demographic Sample Survey data on both retrospective and current mortality.

The crude death rate in the late 1960's is estimated to be between 19 and 20 per thousand population. The United States Bureau of the Census estimate for 1971 is 18 per thousand population (U.S. Department of Commerce 1973: 6). These overall rates conceal great variations between regions; estimated crude death rates range from between 8-10 per thousand in the Accra Capital District to between 25 and 27 per thousand population in the Upper Region. The rates presented in Table 2.11 indicate the prevalence of high death rates in the Upper, Northern and Central Regions whilst the remainder of the regions exhibit relatively moderately high mortality with Accra Capital District enjoying the lowest death rate. The urban death rate (i.e. 14 per thousand) is about two-thirds of the rural rate. The most plausible estimate of infant mortality rate in the mid 1960's appears to be 133 per thousand live births. The 1971 Supplementary Enquiry data yielded an estimated infant mortality of 122 per thousand live births during the late 1960's. Regional estimates, however, range from 56 in the Accra Capital District to 192 in the Upper Region during the 1960's (Table 2.12). Again the urban rate is lower than the rural rate: 98 as against 161 per thousand live births (Gaisie 1973: 298).

An examination of child death rates by single years has shown that a large proportion of the deaths among children aged 0-4 occur in the second year of life and that deaths in this age group account for the bulk of the deaths within the age group 1-4 years. The observed proportions of deaths at age 1 among all deaths within the 1-4 years age group range between 34 and 43 per cent (Gaisie

1973: 198-199): these figures may be compared with 53 per cent in Senegal between 1962 and 1968 (Cantrelle and Leridon 1971: 570), and with 48 and 47 per cent in Ibadan (Nigeria 1964-1966) and Mauritius (1961) respectively (N'Doye 1970: 7 and Gordon *et. al.*, 1967: 363). Infectious diseases and malnutrition, or a synergistic combination of the two, are the major causes of a large proportion of child deaths in tropical Africa (Gaisie 1973: 200-202).

TABLE 2.11. -- ESTIMATED CRUDE DEATH RATES BY REGIONS AND RESIDENCE -- 1968-1969

Region	Urban-Rural	Urban	Rural
All Regions	19-20	14.0	21.1
Accra C.D.	8-10	7.4	14.5
Eastern	17-20	17.7	20.2
Central	19-20	15.0	21.3
Western	15-17	12.0	22.3
Volta	18-19	16.5	20.4
Ashanti	18-19	12.5	20.0
Brong-Ahafo	19-20	16.3	22.0
Northern	24-25	15.6	29.4
Upper	27	15.1	29.5

Source : S.K. Gaisie 1973: 177 & 179

TABLE 2.12. -- ESTIMATED INFANT MORTALITY RATES BY REGION AND RESIDENCE

Region	Urban-Rural			Urban			Rural		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
All Regions	133 (122)	145	121	98 (94)	107	89	148 (132)	161	135
Accra C.D.	56 ( 63)	61	50	53	58	47	106	115	96
Eastern	124 (100)	135	113	120	130	110	135	147	123
Central	141 (119)	153	128	126	134	118	155	166	143
Western	111 (135)	121	101	87	96	79	118	128	107
Volta	130 (113)	144	125	104	112	95	140	153	127
Ashanti	124 ( 96)	135	113	87	96	79	133	145	121
Brong-Ahafo	142 (145)	154	129	126	134	113	153	165	140
Northern	168 (149)	188	157	129	140	117	207	225	188
Upper	192 (234)	209	174	111	120	101	208	226	189

Source : S.K. Gaisie 1973: 174

Figures in brackets based on the 1971 Supplementary Enquiry data.

Note that these are figures adjusted by Brass' technique and not that derived from a life table on the basis of the estimated child mortality (i.e. probability of surviving from birth to age 2).

**General Mortality.** The life expectancy at birth in the late 1960's is estimated to be 47 years (48.3 for females and 45.6 for males). The 1971 Supplementary Enquiry data however yielded an estimated life expectancy at birth of 47.3 for females and 44.0 for males. Estimated figures for 1975 are 47 years and 50 years for males and females respectively.

**Regional Differentials.** The life expectancies shown in Table 2.13 reflect the inter-regional differences indicated by the crude death rates and infant mortality rates. Northern and Upper Regions experience the highest mortality rates with the Western, Central and Brong-Ahafo on one hand, and the Eastern, Volta and Ashanti Regions on the other hand, exhibiting progressively lower mortality rates. The life expectancies at birth range from between 60 and 65 years in the Accra Capital District; life expectancy may have been over estimated but it is still indicative of the fact the district's mortality rate is the lowest in the country.

**Urban-Rural Differentials.** Mortality is higher in the rural than in the urban areas, the urban life expectancy at birth exceeds that of the rural communities by between 12 and 13 years (Table 2.13). The available figures suggest substantial urban-rural differentials within the various regions and though the magnitude of these differences cannot be precisely determined in the light of the available data, they are indicative of the prevailing better health conditions in the cities and towns where most of the medical and health facilities are concentrated.

**Sex Differentials.** The figures presented in Table 2.13 indicate higher life expectancy for females than for males ; the female life expectancy at birth exceeds that of the males by between 3 and 4 years. This is contrary to what has been observed in some Asian countries where male life expectancy at birth exceeds that of females (El Badry 1971: 863; Ruzicka 1972: 2ff). In other African countries for which data are available, male mortality exceeds female mortality for both infants and children. Since mortality levels in this part of the world, to a large extent, result from high infant and child death rates, the mortality differences between the sexes may be attributed largely to higher male infant and child mortality rates rather than to excess male adult mortality. It is likely therefore that the effect of maternal mortality on the overall mortality index -- i.e. expectation of life at birth -- has been more than offset by high male infant and child mortality and there is the possibility that a rapid and sustained decline in infant and child death rates would reverse the present situation unless adequate measures are also taken to combat high maternal mortality, especially in the rural areas.

TABLE 2.13. — ESTIMATED LIFE EXPECTANCY AT BIRTH, SEX, REGION AND RESIDENCE — 1968 1969

Region	Urban-Rural		Urban		Rural	
	Male	Female	Male	Female	Male	Female
All Regions	45.6	48.3	54.1	57.7	40.4	44.7
Accra C.D.	63.4	65.7	—	—	—	—
Eastern	45.2	50.3	—	—	—	—
Central	42.3	45.7	—	—	—	—
Western	42.9	46.3	—	—	—	—
Volta	52.4	56.4	—	—	—	—
Ashanti	50.2	53.9	—	—	—	—
Brong-Ahafo	44.6	49.2	—	—	—	—
Northern	35.9	38.7	—	—	—	—
Upper	34.3	38.3	—	—	—	—

Notes: (1) Source: S.K. Gaisie 1973: 207-209

(2) Ashanti and Volta figures appear to have been slightly biased upwards.

**Trends in Mortality.** The estimated values of life expectancies at birth indicate a steady decline in mortality since the early 1940's; the decline in mortality was very slow during World War II and the early part of the 1950's and there appeared to have been a relatively rapid decline just after that period. The estimated life expectancies at birth based on estimated child mortality (i.e. probability of surviving from birth to age 2) imply rates of improvement in life expectancy of from 0.33 years per year during the early part of the period under review to about 0.75 years in the early 1960's. A rate of increase of 0.75 years per year is also indicated by the estimate prepared by Gaisie for 1960 (Gaisie 1969: 82) and the one presented in Table 2.13 for 1968. These figures are subject to omission errors and random variations and they should therefore be regarded as indicators of trends rather than as real values of rates of improvement. For instance, a comparison of Ghana's estimated life expectancy at birth of 38 years for the period between 1940 and 1948 with 32.5 years for India and 37.0 years for Latin America in 1945 (Arriaga and Davis 1969: 232) shows that either the rate of increase in life expectancy has been relatively low since the mid 1940's (i.e. 0.35 years per year) or that the Ghanaian figure has been over-estimated. The estimated life expectancies of 39 years (37 years and 40 years for males and females respectively (Gaisie 1969: 82-3)) and 37 years (W.H.O. 1971: 20) for Ghana during the late 1950's, lend substantial support to the latter explanation. It must also be noted that very few African countries had life expectancies at birth of more than 40 years in the mid-1960's (W.H.O. 1971: 20) and experience from the



developing countries in Asia and Latin America shows that Ghana's life expectancy at birth during the early 1940's was most unlikely to be higher than 33 or 35 years. Assuming a life expectancy of 33 years in the early 1940's, the rate of increase in the following two decades was probably in the neighbourhood of 0.50 years per year (life expectancy at birth in the late 1950's being 39 years (Gaisie 1969: 82) and then rose to 0.75 years during the 1960's. These rates may be compared with 0.52 years (1930-1940), 0.79 years (1940-1950) and 0.90 years (1950-1960) for Latin America (Arriaga and Davis 1969: 232) and 0.50 years (Thailand 1947-48/1959-61), 0.50-0.75 years (Burma 1954-1960/62), 0.75-0.90 years (India 1941-50/1951-60), Cambodia (1914-1961) and 1.0 years for Nepal (1952-54/1961) (Ruzicka 1972: 2ff). A rate of increase in life expectancy at birth of 0.75 years per year in some African countries has been estimated by Van de Walle and Page (Van de Walle and Page 1969: 3-16). Though Ghana may differ from Latin America and Asian countries in terms of economic and/or demographic evolutions, her estimated annual increases in life expectancy since the 1940's apparently did not depart significantly from those experienced in other parts of the developing world.

The rates of improvements varied from region to region; they ranged from about 0.33 years per year in the Upper, Northern and Brong-Ahafo Regions to 0.59 years in the Accra Capital District, Eastern, Volta and Ashanti Regions during the early part of the period -- i.e. 1940-1955 -- and the following decade witnessed a rapid increase in life expectancy at birth of between 0.60 years per year in Ashanti through 0.87 years in the Volta Region to about 1.2 years in the Northern Region. Although these figures are admittedly subject to error and cannot therefore provide an adequate and sound basis for the determination of the actual trends in mortality in the various regions, they are, however, suggestive of a differential decline in mortality in the regions and also of the possibility that the downward trend in mortality may have been accelerating in the less developed regions (as indicated by the Northern Region's rate of increase of 1.2 years per year) during the latter part of the period under discussion. There are also indications of a higher rate of increase in life expectancy at birth in the cities and towns than in the countryside; 0.87 years as against 0.63 years (Table 2:13).

## INTERNATIONAL MIGRATION

The 1970 Population Census of Ghana (The Population Census of Ghana, Vol. II, Census Office, Accra, 1972) showed that there were 562,132 foreign nationals (323,978 males and 238,154 females), or approximately 6.6 per cent of Ghana's total population. The topic of nationality was not one of the topics included in the 1960 Census. Thus, strictly comparable figures from the 1960 Census are not available. However, information was collected in 1960 on country of origin which was defined in patrilineal societies as the country of birth of

one's father's father, and, in matrilineal societies, as the country of birth of one's mother's mother. If we assume that nationality and country of origin are approximately the same, then there was a decrease from the 827,481 (or 12.3 per cent of the 1960 Population) to the 562,132 obtained in the 1970 Census. The decrease was substantial in both absolute and relative terms.

However, neither the concept of nationality nor that of country of origin gives any direct information on international migrants, since foreign nationals could have been born in Ghana and thus cannot be classified as migrants. Therefore, again we have to use birth-place data. Using birth-place statistics as proxy for migration data, we note that many African countries had an appreciable proportion of migrants in the early 1960's. The position has altered somewhat in recent times due to migration policies adopted in a number of these countries, for example, Kenya, Uganda, Zaire and Ghana. In 1960, Ghana recorded that 559,711 persons (or 8.0 per cent of the population) were international migrants; this figure declined to 349,874 (or 4.1 per cent of the population) in 1970. Although coverage errors accounted partly for the low figure of foreign immigrants in 1970, most of the decrease could be attributed to the enforcement of the Aliens Compliance Order of 1969.

Lack of a reliable time-series of international migration data in Ghana makes it difficult to estimate how many migrants were actually affected by the enforcement of the Aliens Compliance Order. It is, however, possible to make very crude estimates. Between 1948 and 1960, it was estimated that net international migration was increasing Ghana's population by 30,000 per annum. This rate may have slowed down somewhat after Ghana's economic problems of the mid-1960's. If it is assumed that the annual stream of foreign migrants slowed down to a maximum of 25,000 per year in the inter-censal period, then the number of international migrants in Ghana at the end of 1969 was about 860,000. This number is not to be confused with the number of aliens (i.e. persons of foreign nationality). The latter category probably comprised more than 1.13 million persons at the end of 1969, using the same crude techniques used to measure the number of foreign migrants. Thus, a very rough estimate would put the number of aliens affected by the Aliens Compliance Order at a maximum of 600,000 of whom about 500,000 were migrants. It should be stressed that the estimates contained in the latter part of this section are rather crude and more refined techniques are being used to estimate the number of foreign migrants who were forced to emigrate from Ghana as a result of the Aliens Compliance Order.

**Demographic Effects of Migration.** It is a well known demographic fact that, all factors remaining constant, a population closed to migration has an age-sex pattern which shows significant differences from one where migration has had a considerable effect on its com-

position. Migrants are generally both sex-selective and age-selective. More males tend to migrate than females, a notable exception being the migration streams into the United States in recent years. In Australia, where whole families have tended to migrate in recent years, the effect on the sex-age structure of the country has been minimal. A usual feature of migration however, is that young persons, in the age-group 15-44, especially age-group 20-24, tend to migrate. This is especially so in Africa where migration tends to be of the labour type, that is a tendency for those in the prime working age-groups to migrate rather than children or the aged.

The effects of migration are also discernible in the sex-ratios of both receiving and sending countries. In Ghana, for 1960, the sex-ratio of the total population was 102.2 as compared to 97.2 for the Ghanaian-born population. By 1970, with the exodus of a large number of aliens, variously estimated to be between 400,000 and 600,000, the sex ratio of the total population had declined to 98.5 while that of the Ghanaian-born population showed only a modest decline to 96.8. This highlights the fact that migrants into Ghana have a sex-ratio for both 1960 and 1970 well in excess of 100. The relevant figures are 170.9 per cent and 151.7 per cent for 1960 and 1970 respectively. This is a typical pattern. Shryock *et. al.* (Shryock and Siegel, *et. al.* 1971) note that "Immigrants to Brazil, the Federal Republic of Germany and Italy in 1961 had sex-ratios of 135, 198 and 135 respectively". Thus, Ghana's high sex-ratios for immigrants in both 1960 and 1970 are not unusual. The effect of migration on the sex-ratio of the countries of origin is usually opposite to that which it has on the countries of destination. Thus, sex-ratios well below 100 are common in countries which have lost considerable populations through migration. The decline of Ghana's total population sex-ratio from 102.2 in 1960 to 98.5 in 1970 could be attributed mainly to the apparent massive "outmigration" between 1960 and 1970.

Distortions in the age composition of the population are also introduced by migration. Thus, for Ghana, the distribution of the total population shows a higher proportion of persons in the dependency age groups 0-14 and 65+ than the corresponding proportion for the foreign-born population. This, as previously explained, is due to the fact that those who migrate are usually in the prime working age groups. Also an examination of the age-standardised activity rates (de Graft-Johnson, K.T., *et. al.*, unpublished) highlights the age-selective nature of rural-urban migration).

It should be noted that most of the comments we have made above in respect of the possible effects of international migration on the sex-age structure of the population refer in like manner to internal migration. Thus, urban centres which are recipients of rural-urban migrants show sex-age structure differences which do not obtain in localities or regions which have not been subjected to mass internal movements of populations. Thus, in some demographic studies, distortions in sex-ratios are taken as constituting possible evidence for migratory

movements, in the absence of any other possible explanation for these discrepancies, e.g. war.

**Social Effects of Migration.** The main social problem posed by migration is that of cultural assimilation. This problem is not limited to international migration but affects internal migrants in almost the same way. Stated simply, the problem is one of assimilating people with different customs and values into another population. Thus, in East Africa, the Asians were never really assimilated into the native population. They considered themselves as a group apart and were treated as such. The same comment can be made in relation to other foreign nationals who were resident in Ghana in the 1960's. This concept of a separate identity in the country of destination usually leads to some form of hostility or contempt towards the migrant group and this sometimes leads to stresses and strains in the areas where these migrants reside.

It is necessary to point out, however, that where the migrants belong to the same ethnic group, the same strains and stresses are not evident. For example, the Togolese who migrate from Togo to the Volta Region of Ghana do not have the same problems as the Nigerians who reside in that region. This is due to the ease with which these Togolese integrate themselves into the existing Ewe tribal structure in the Volta Region. In fact, a number of them conveniently pass themselves off as Ghanaian Ewes. The same phenomena of cultural integration takes place among border tribes who are spread across international boundaries.

The social problems are sometimes exacerbated by the tendency of migrants from one place in their areas of origin to move to the same locality or region in their areas of destination. Thus, if the first migrants from village A move to town B, the tendency is for subsequent migrants from A to move to town B and thus establish a "commune" of natives of village A in town B. This phenomena is aptly exemplified in the case of large towns of Ghana. The Zongo and shanty towns in these large towns are mainly inhabited by migrants and it is easy to find where the preponderance of migrants from, say, the Frafra tribe in the Upper Region reside in Accra.

Such migratory tendencies account in some measure for the overcrowding which takes place in some of these areas. For relatives and "hometown folk" flock to the houses of the initial migrants and, as the resources of such persons are generally meagre, they can only accommodate the later migrants in their own inadequate housing units. Such over-crowding has its own social problems of which squalor, inadequate sanitary facilities and crime are only a few. Although there is a general belief in Ghana that the crime rate among migrants is higher than among non-migrants, there is no detailed study carried out to support this view. However, in our view, this is a plausible hypothesis which should be tested.

What is also evident is that the standard of living of many of the African migrants in Ghana is generally lower than those of the non-migrants. This has social implications which we cannot discuss in detail in a short monograph like this.

It is also hypothesised that, in Ghana, the health hazards which many migrants have to face in view of their economic status and also the environment in which they live have an adverse effect on their health and thus on their death rates. It is further postulated that communicable diseases like tuberculosis are more common among migrant population than among non-migrants. Here again, more detailed studies utilising reliable data collected in Ghana would help to confirm or disprove this view.

**Economic Consequences.** Migration has economic advantages and disadvantages both for the sending and the receiving countries. One benefit of emigration is the role played by emigrants' remittances in the development of migrants' countries of origin. S.G. Triantis (Triantis, S.G.: 1965) has noted that "a benefit of emigration lies in the emigrants' remittances, which can make a substantial contribution to Greece's income, foreign exchange and resources for investment". This is true not only of Greece but of other sending countries. In fact, it was reckoned that Ghana's foreign currency reserves were being drained to the extent of about 28 million US dollars per annum in the early 1960's. Reliable figures for the later 1960's are not available but it is well known that not all such transactions are made through banks. Thus, the actual value of emigrants' remittances may be far in excess of what the banks in Ghana record. This inadequacy of statistics with respect to emigrants' remittances in cash and in kind makes it difficult to focus attention on the dimensions of the problem and the magnitude of the benefits accruing to the countries of origin. However, recent actions by Governments in West, Central and East Africa indicate that the Governments of these countries consider that these remittances have an adverse effect on the receiving countries. Thus, drastic action has been taken to reduce the number of migrants in these countries and, even where some migrants have been allowed to stay, stricter controls over remittances have been instituted. In Ghana, the Foreign Exchange Control Act of 1961 and the Ghanaian Business Promotion Act of 1970 were both steps in the direction of reducing the depletion of Ghana's foreign currency reserves through authorised and unauthorised transfers of immigrants' savings. Italy, Greece, Spain (Parenti, G. 1965) and Lesotho have all benefited considerably from the economic and social development of their countries which these remittances in part have made possible. The recent events in some South African mines involving Lesotho miners also highlight the importance which the Governments of such countries place on this source of foreign exchange.

But it must be noted that migrants also make contributions to the economic development of the receiving countries. Countries like Canada, Australia, the United States, South Africa have all benefited from the increases in Gross Domestic Product which these migrant workers brought about. Here again, no reliable measures are available about what proportion of GDP is due to the efforts of foreign migrant workers. But N.O. Addo has attempted to deal with this question at least in the special area of cocoa farming. The hypothesis that he attempted to test was whether the mass exodus of foreign migrant workers from Ghana as a result of the Aliens Compliance Order of 18 November 1969 had any adverse effect on the economy of Ghana, especially in the agricultural sector (Addo 1971).

Addo's published study was limited to one region of Ghana but some of his conclusions are equally valid for the rest of the country. He estimated that between 18,000 and 30,000 aliens left Brong-Ahafo immediately after the enforcement of the Aliens Compliance Order. The composition of the departing aliens from Brong-Ahafo was as follows: Upper Volta (68.5 per cent), Togo (14.2), Ivory Coast (10.0) and others (7.3). Of the aliens who were employed in Brong-Ahafo at the time of his survey, the composition was as follows: Upper Volta (57.0 per cent), Ivory Coast (18.0), Togo (17.0) and other (8.0).

One finding of the study was that foreign labour had in fact made a significant contribution to the development of agriculture in Ghana. With the mass exodus of aliens, vacancies created in the occupational group *Farm Workers* were partly filled by Ghanaians. But this substitution of Ghanaian labour for alien labour was not enough and vacancies continued to exist in that category of workers. This led to the relaxation of the rules regarding the employment of alien farm labour. Thus there has been an increase in the migration of farm workers from the neighbouring African territories since the first impact of the enforcement of the Aliens Compliance Order was felt.

However, it must be noted that the departure of aliens from other sectors of economic activity created job openings which were quickly filled by Ghanaians. This is especially true of the commerce sector. Of the 95,798 males and 275,333 females who engaged in commerce in 1960, 44,827 males and 42,625 females were persons of foreign origin, that is migrants and children of migrants. The corresponding figures for 1970 (Census Office 1970) show that there were only 29,626 aliens engaged in commerce, a decrease of 57,626 from the 1960 total of 87,252. Another sector in which there was a relatively large decrease in alien employment was mining. The number of aliens working in the mines had dropped from 21,065 in 1960 to 5,789 in 1970. Many of those affected were in the diamond mining industry. With respect to agriculture, the number of alien workers declined from 166,450 in 1960 to 130,839 in 1970 but the share of agriculture in alien employment increased from 44.1 per cent to 52.1 per cent. This relative increase was due to the fact that most of the

other branches of industrial activities registered greater losses in alien manpower. The only sector which increased the absolute size of its manpower was services: an increase from 34,116 in 1960 to 36,214 in 1970.

There is another dimension of the problem which we have to consider. In those areas where the pressure on the land is great and massive underemployment prevalent, this can partly be solved by large-scale emigration. This is true of many of the large-scale internal migrations as well as the large-scale international migrations which have taken place in recent times. The emigration of Indians from India and Italians from Italy is an apt illustration of this point. In Ghana, the Gonja settlement scheme of the early 1950's was an attempt to resettle the Frafras who were overcrowded and largely unemployed or underemployed in their home areas in the Gonja District which had very fertile land but was sparsely populated. This scheme, however, failed but the causes of its failure are outside the scope of this monograph.

It is also worth noting that migration sometimes leads to a redistribution of manpower. Persons working in agriculture in their own places of origin may engage in different types of economic activity in their places of destination. The farmers and farm workers of Lesotho end up as miners in South Africa. Also the farm workers in the rural areas of Ghana migrate to urban centres and change their occupations. This in part is a reflection on their motives for migrating: to maximise their incomes and to escape from the humdrum life of the rural areas.

Then there is the question of unemployment. In most African countries, unemployment rates, where they are available, show that they are higher among migrants than among non-migrants. In a study by de Graft-Johnson (de Graft-Johnson, K.T., 1974), it is postulated that "it is not just that there is a link between the growth of towns and unemployment: urban migrants, who are typically semi-educated, unskilled young persons, mostly primary and middle school leavers, are generally its chief victims. In 1960, of the total unemployment (both sexes) in urban centres, 60 per cent were migrants, (males 66 per cent, females 45 per cent). The corresponding figures in the rural areas were 43 per cent for both sexes (males 45 per cent, females 41 per cent). In the Greater Accra Region, only one-third of the unemployed were non-migrants". Thus there appears to be a definite link between migration and unemployment, at least in Ghana.

### CHAPTER III

## POPULATION COMPOSITION

**Ethnic Groups.** The great bulk of Ghana's population continues to be of indigenous African origin. There are, however, small minority groups of Asians, Europeans, Lebanese and Syrians. The proportion of Africans among the Ghanaian population has never fallen below 99 per cent. Africans made up 99.90 per cent, 99.84 per cent, 99.77 per cent and 99.85 per cent of the country's population in 1921, 1948, 1960 and 1968 respectively.

Although the 1960 Population Census revealed that 12.3 per cent of the total population of Ghana were foreigners, about 96 per cent of the foreign-born immigrants hailed from the neighbouring and nearby African countries of Togo, Upper Volta and Nigeria. The nationals from these countries made up 34.0 per cent, 23.5 per cent and 23.1 per cent of the population of foreign origin respectively. The 1970 Census results show that the foreign component of the population has declined to about 6.6 per cent and this may be attributed to the enforcement of the immigration laws in 1969. It must be noted, however,

TABLE 3.1. – ETHNIC COMPOSITIONS OF GHANAIAI POPULATION  
1960 and 1968

Ethnic Group	1960(a) Percentage of total population	1968(b) Percentage of total population
Akans	44.1	43.3
Ewe	13.0	14.5
Mole-Dagbani	15.9	12.8
Ga-Adangbe	8.3	9.4
Grusi	2.2	4.8
Guan	3.7	2.2
Gurma	3.5	0.7
Central Togo tribes	0.8	0.4
Non-African	0.2	0.2
<i>Notes on Sources</i>		
(a) 1960 Census		
(b) S.K. Gaisie, <i>et. al.</i> , The National Demographic Sample Survey, Vol. 2a, General Characteristics of the Sample Population, 1970.		



that the non-African segment of the foreign population increased from 0.90 per cent in 1921 to 1.6 per cent and 2.3 per cent in 1948 and 1960 respectively. The corresponding figure for 1968 was 1.5 per cent. The number of non-Africans in Ghana increased considerably soon after Ghana obtained her political independence. The situation has been described by Caldwell as follows:

In actuality, the numbers of the British in Ghana have not fallen. They rose between 1948 and 1960 from 4,211 to 7,420. But at the same time the non-British European population increased in size spectacularly. In the former year, they numbered less than a thousand. In the ensuing twelve years they increased almost fivefold to 4,530 (Caldwell 1967a: 24).

The Ghanaian population is also made up of a large number of ethnic groups; among the major ethnic groups are the Akans, Ga-Adangbe, Guans, Ewe, Gurma, Lobi, Grusi, Central Togo tribes and Mole-Dagbani (Table 3.1).

**Age and Sex Composition.** The 1960 Census and the 1968-69 sample survey data are presented in the form of pyramid shown in Figure 3.1. Although both sets of data might have been distorted to some extent by errors arising from age mis-statement and errors in enumeration and in the survey by sampling fluctuations, they reveal clearly the main characteristics of Ghana's population, the most outstanding of which is its extreme youthfulness. The proportion of children under 15 years is more than 45 per cent. The 1968 and 1970 figures indicate that the Ghanaian population is becoming more and more youthful and the projected population also shows that the proportion of children in the population of Ghanaian origin would climb to 47.5 per cent and 48.3 per cent in 1970 and 1975 respectively (Gaisie 1969: 106). In fact the figures in Table 3.4 show that the proportion of children under 16 years has never fallen below 43 per cent since 1921, and, whilst the proportion between ages 15 and 64 years is decreasing gradually, the proportion of persons aged 26 years and over has remained nearly constant over the years (Tables 3.2 and 3.3). On the whole, there have not been any major changes in the age structure, and, if fertility continues to remain constant in the coming years, about 50 per cent of the Ghanaian population will eventually be composed of children. Indeed, the projected populations of Ghanaian origin indicate that the proportion of children under 15 years of age would increase from 45.6 per cent in 1960 to 47.5 per cent and 48.7 per cent in 1970 and 1980 respectively. One of the serious problems arising from the age changes outlined above will be the provision of adequate schools for the rapid increase in the number of children who will be entering primary, middle and secondary schools.

Table 3.5 represents age structures in the nine regions. Although some of the differences in the age compositions in the regions may be explained in terms of differential age reporting and the type of migration occurring in each re-

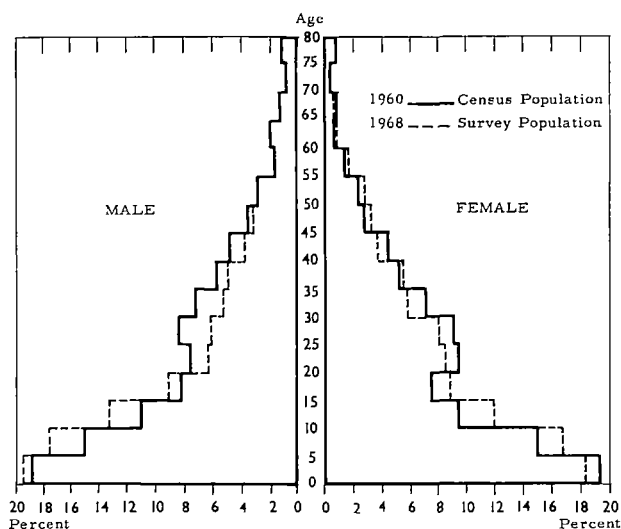


Figure 3.1. — Population pyramid by five year age groups, 1960 and 1968  
(Percentages)

TABLE 3.2. — AGE STRUCTURE 1960, 1968 AND 1970  
(Percentage Distribution by Five Year Groups)

Age Group	Both Sexes			Males			Females		
	1960(a)	1968(b)	1970(c)	1960(a)	1968(b)	1970(c)	1960(a)	1968(b)	1970(c)
0-4	19.2	18.9	18.3	18.8	19.5	18.3	19.6	18.4	18.2
5-9	15.2	17.3	17.0	15.1	17.7	17.1	15.2	16.9	16.7
10-14	10.1	12.7	11.7	10.5	13.3	12.1	9.8	12.0	11.3
15-19	8.0	9.0	9.1	8.1	9.1	9.4	7.9	8.8	8.9
20-24	8.7	7.3	8.0	7.9	6.2	7.2	9.6	8.5	8.7
25-29	8.8	7.2	7.4	8.3	6.1	6.8	9.2	8.1	7.9
30-34	7.3	5.6	6.6	7.1	5.3	6.2	7.4	5.9	6.9
35-39	5.5	5.2	5.1	5.8	5.1	5.2	5.3	5.4	5.0
40-44	4.6	3.9	4.1	4.9	3.9	4.1	4.4	3.9	4.1
45-49	3.3	3.5	3.2	3.6	3.5	3.4	2.9	3.4	3.0
50-54	2.7	3.0	2.7	2.9	3.0	2.8	2.5	3.0	2.7
55-59	1.6	1.7	1.7	1.8	1.9	1.8	1.5	1.6	1.5
60-64	1.8	1.7	1.7	1.9	1.9	1.8	1.7	1.6	1.7
65 +	3.2	3.0	3.4	3.3	3.4	3.8	3.0	2.5	3.4

Notes on Sources :

(a) 1960 Census — Vol. III

(b) S.K. Gaisie 1973: 34

(c) 1970 Census — Vol. II

gion, the high fertility regions, i.e. Ashanti and Brong-Ahafo, inevitably have younger populations. In 1960, about 47 per cent and 46 per cent of the populations in Ashanti and Brong-Ahafo respectively were composed of children under 15 years of age. The corresponding proportions for the combined Northern and Upper Regions, Eastern Region and the combined Western and Central Regions were 43 per cent, 45.5 per cent and 44.5 per cent respectively. The differences in the age structure might have been greater if migration had not "worked towards lessening the differences". The 1968 sample survey and 1970 Census data reveal approximately the same pattern of age differences between the regions.

TABLE 3.3. — AGE STRUCTURE, 1960 AND 1970  
(Percentage Distribution in Broad Age Groups)

Age Group	Both Sexes			Males			Females		
	1960	1968	1970	1960	1968	1970	1960	1968	1970
Under 15	44.5	48.9	46.9	44.4	50.4	47.6	44.6	47.3	46.3
15-44	43.1	38.2	40.2	42.1	35.7	38.9	43.9	40.6	41.4
45-64	9.3	9.9	9.3	10.2	10.4	9.8	8.5	9.6	8.7
65 +	3.2	3.0	3.6	3.3	3.4	3.7	3.0	2.5	3.6

Source : Computed from Table 3.2.

TABLE 3.4. — AGE STRUCTURE 1921-1968  
(Percentage Distribution in Broad Age Groups)

Age Group	1921 (a)	1948 (a)	1960(a)	1968(b)
Under 16	44.1	43.0	46.3	50.9
16-45	42.3	43.2	42.1	37.3
46 +	13.6	13.8	11.8	11.8

Notes on Sources :

(a) Caldwell, *op. cit.*, Table 1: 10, p. 41.

(b) Gaisie, *et. al.*, Vol. 2a, 1970.

The distortions in the age structure of Ghana's population as shown in Figures 3.1 and 3.2 are mainly caused by age mis-statements and wrong estimation of ages by the enumerators. Some effects of age errors are most readily apparent if statistics by single years of age are examined and others can best be observed in group data, preferably in the conventional group of five-year age interval. Figure 3.2 shows quite clearly that unusually large numbers of individuals are reported at ages ending in 0 or 5, and relatively small numbers at other ages. Deficiencies in reported numbers are greatest at ages with final digits 1 or 9, and the major factor responsible for this is the strong attraction exerted by

even numbers and numbers in multiples of 0 or 5; one of such cases is the proportion at age 30 as compared with that at age 31 (Fig. 3.2). It will be seen from Figure 3.2 that the forces of attraction of preferred final digits (or disliked digits) are generally more marked in the case of females than males and this is borne out by the wide fluctuations in the figures for females (Table 3.2).

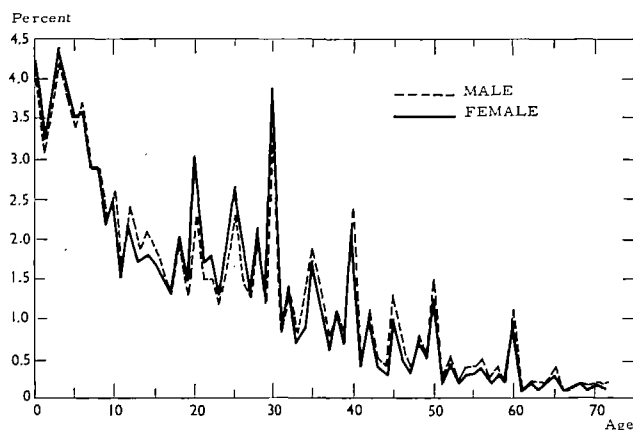


Figure 3.2. — Distribution of the male and female population by single years of age, 1960 (Percentages)

The sex ratios in Ghana for the total population of the country, for different age groups and for native and foreign-born persons are given in Table 3.6. The sex ratio for the total country was stable from 1948 to 1960 but the 1968 and 1970 figures -- 94.3 and 98.5 respectively -- are indicative of a subsequent decline. However, since the slight excess of males in 1960 was explained mainly by immigration, the recent exodus of "aliens" from Ghana may well have depressed the sex ratio as shown by the 1970 foreign-born ratio of 139.9; a decrease of about 18 per cent since 1960. The sex ratios of the native-born population, as revealed by the 1960 and 1970 Censuses and 1968 sample survey, were 97.7, 91.5 and 98.0 respectively and there appears to have been virtually no change in the sex ratio of the Ghana-born population since the past decade. The excess of females over males probably may be explained in terms of higher male mortality. The sex ratios at birth in 1960, 1968 and 1970 appear to show an excess of female births over male births. This is the opposite of what is experienced in other parts of the world. In a number of specific populations, the sex ratio at birth has varied from 113.2 in Greece to 101.1 in Cuba (coloured) (Lawrence 1941: 35-79). The average sex ratio at birth throughout the world has been estimated to centre around 105 male births per 100 female births. Overstatement of boys' ages, heavy male infant mortality and under-enumeration of infant boys may be cited as some of the explanations for the Ghanaian findings; but since there is no evidence to show that only the ages of boys were over-stated and that only boys were under-enumerated, the imba-

lance between the sexes at birth may perhaps be attributed partly to comparatively heavy male infant mortality. On the other hand, a lack of a male excess of births may be a characteristic of African populations.

Table 3.7 shows quite clearly that, according to stated ages, females outnumber males in the central age group -- i.e. 15-44 -- and that males assume supremacy beyond age 45. The latter phenomenon may be explained in terms

TABLE 3.5. — PERCENTAGE DISTRIBUTION BY AGE AND REGION, 1960, 1968 & 1970

Region	Year	Under 15	15-44	45-64	65 +
Accra C.D.	1960	39.2	49.7	8.3	2.8
	1968	47.3	41.3	9.0	2.4
	1970	42.0	48.6	7.3	2.1
Eastern	1960	45.5	41.3	9.8	3.4
	1968	48.9	35.4	10.7	5.0
	1970	47.8	38.0	9.9	4.3
Central	1960	—	—	—	—
	1968	48.9	37.4	10.4	3.3
	1970	47.6	37.6	10.4	4.4
Western	1960 (a)	44.5	42.4	9.8	3.3
	1968	46.1	39.9	10.9	3.1
	1970	45.5	42.1	9.4	3.0
Volta	1960	45.6	40.0	10.1	4.3
	1968	49.7	35.7	11.2	3.2
	1970	47.6	37.2	10.5	4.7
Ashanti	1960	46.5	42.6	8.2	2.5
	1968	52.1	38.1	7.6	2.2
	1970	49.2	39.6	8.2	3.0
Brong-Ahafo	1960	46.1	43.5	7.9	2.5
	1968	51.3	35.9	9.5	3.3
	1970	48.7	39.9	8.0	3.4
Northern	1960 (b)	42.8	44.2	9.8	2.2
	1968	47.5	40.2	9.4	2.9
	1970	47.2	40.9	8.6	3.3
Upper	1960	—	—	—	—
	1968	45.1	42.5	10.6	2.0
	1970	44.6	40.1	11.2	4.1

*Notes on Sources :*

(a) Figures for Western and Central Regions

(b) Figures for Northern and Upper Regions

TABLE 3.6. – SEX RATIOS, 1960, 1968 AND 1970

Age Group	1960(a)	1968(b)	1970(c)
0	95.6	94.5	98.6
0- 4	97.7	102.0	98.5
5- 9	101.5	99.0	99.1
10-14	110.1	104.0	100.8
15-19	105.0	97.3	105.3
20-24	84.2	68.8	105.2
25-29	91.0	71.2	81.3
30-34	98.3	86.3	84.9
35-39	110.6	89.0	88.8
40-44	114.9	93.1	102.1
45-49	129.7	98.3	99.3
50-54	118.0	95.3	112.4
55-59	122.7	109.1	107.0
60-64	115.1	113.6	115.7
65 +	114.0	123.8	102.2
All Ages	102.2	94.3	98.5
Native-Born	97.7	91.5	98.0
Foreign-Born	170.6	115.0	139.9

*Notes on Sources :*  
 (a) Caldwell, *op. cit.*, 1967a, p. 43.  
 (b) Gaisie, *et. al.*, *op. cit.*, Vol. 2a, 1970.  
 (c) 1970 Census

TABLE 3.7. – SEX RATIOS IN BROAD AGE GROUPS, 1948, 1960, 1968 AND 1970  
(Males per 100 Females)

Age Group	1948(d)	1960(e)	1968(f)	1970(g)
Under 15	109.6(a)	102.4	100.2	101.0
15-44	98.9(b)	97.5	82.6	93.0
45-64	104.6(c)	122.1	101.0	110.0
65+	—	112.6	124.6	102.1

*Notes :*  
 (a) Age Group 1-15 years  
 (b) Age Group 16-44  
 (c) Age Group 45 and Over

*Notes on Sources :*  
 (d) Caldwell, *op. cit.*, 1967a, Table 1:12, p. 44.  
 (e) Computed from Table 3.5  
 (f) Computed from Table 3.5  
 (g) Computed from Table 3.5

of age mis-statement (males over-stating their ages and females perhaps understating theirs) and immigration. It must be noted that the picture portrayed in Table 3.7 has been found to be characteristic of other African populations (Joseph 1973). However, a decline in the sex ratio beyond age 45 from 122 in 1960 to 110 in 1970 may partly be explained in terms of emigration of 'aliens' which took place immediately before the 1970 Census. The regional figures are also indecisive of substantial declines in the regional sex ratios. Table 3.8 confirms that the immigrant regions exhibit the highest sex ratios.

TABLE 3.8. — SEX RATIOS BY REGION, 1960 AND 1970  
(Males per 100 Females)

Region	1960	1970
Accra Capital District	113.6	105.7
Eastern	101.9	97.9
Western & Central	101.6	104.7(1) 93.7(2)
Volta	95.2	92.4
Ashanti	104.9	99.1
Brong-Ahafo	111.2	104.5
Northern & Upper	97.2	102.0(3) 90.2(4)
<i>Source:</i> 1960 Census (1) Western (2) Central (3) Northern (4) Upper		

**Educational Status.** In 1948 only 4 per cent of the Ghanaian population had received some kind of education. By 1960, however, the percentage had increased to 21 per cent and 27 per cent of the population aged 6 years and over had attended or were attending school. The corresponding proportions in 1968 were 31 per cent and 40 per cent respectively and 50 per cent of the males and 32 per cent of the females aged 6 years and over had been to school at some time. By 1970, the proportion of Ghanaians who have had some form of formal education had increased ten-fold within a period of about two decades (i.e. 1948-1970). The proportions of males and females had increased from about 37 per cent and 17.0 per cent in 1960 to 53 per cent and 34 per cent in 1971 respectively. It is important to note that the female figure doubled during the past decade.

Between 1960 and 1968, the proportions of the urban and rural populations aged 6 years and over who had ever been to school increased from 43 per

cent to 55 per cent and from 26 per cent to 34 per cent respectively. A little over a quarter of the females in the rural areas and less than a half of their urban counterparts had ever been to school at some time ; and among the males nearly three-quarters of the urban dwellers and half of their rural brothers had received some kind of education. Although there is still a large number of Ghanaians who have never had any form of schooling, the proportions of children and adults who have ever been to school have continued rising since 1960. The proportion of boys in the age ranges 6-14 and 15-19 years who have received some form of education increased from 47 per cent and 60 per cent in 1960 to 66 per cent and 73 per cent in 1968 respectively; the female percentages also increased from 40 per cent and 37 per cent in 1960 to 57 per cent and 48 per cent in 1968 (Table 3.9). The corresponding figures in 1970 for 6-14 year olds were 66.5 per cent for boys and 59.4 per cent for females. Despite the rapid increase in the proportion of Ghanaians going to school, the educational system has not expanded rapidly enough to provide at least elementary schooling for every boy and girl in the country. More than half of the females aged 15-19 years had never attended school and over 40 per cent of their younger sisters aged between 6-14 years were illiterates in 1968 (Table 3.9). In the same year, about 40 per cent of both the 6-14 year olds and 15-19 year olds had never attended school and 66 per cent of the rural population and 45 per cent of the urbanites had not received any formal education.

TABLE 3.9. — SCHOOL ATTENDANCE BY SEX AND AGE, 1960 AND 1968  
(Percentages of Each Age-Sex Group)

Age Groups		Ever at School				Never at School			
1960	1968	Males		Females		Males		Females	
		1960	1968	1960	1968	1960	1968	1960	1968
6-14	6-14	46.8	65.5	39.9	56.9	53.2	34.5	60.1	43.1
15-19	15-19	60.3	73.3	36.6	47.7	39.7	26.7	63.4	52.3
20-24		35.0		22.0		65.0		78.0	
	20-29		54.6		24.1		45.4		75.9
25-34		29.0		8.0		71.0		92.0	
	30-39		33.9		10.4		66.1		89.6
35-44		18.0		5.0		82.0		95.0	
	40-49		21.3		6.1		78.7		93.9
45-54		17.0		5.0		83.0		95.0	
	50-59		19.0		4.9		81.0		95.1
55-64		15.0		4.0		85.0		96.0	
	60 +		15.7		5.0		84.3		95.0
65 +		9.0		3.0		91.0		97.0	

Source: 1960 Census and Gaisie, *et. al.*, *op. cit.*, Vol. 2a, 1970



It must also be noted that education has not spread evenly among the different sections of the Ghanaian community. It will be seen from the figures presented in Tables 3.9, 3.10 and 3.11 that, in almost every age group, the proportions of males with some kind of schooling are higher than those of the females. In 1968, whilst almost half of the males had attended or were attending school, only one-third of the females had ever been to school (34 per cent in 1970). Whilst in 1960, "well over twice as many males as females have ever been to school", the 1968 and 1970 figures show that the ratio has decreased to nearly one-and-a-half times. That "this state of affairs is passing" (Caldwell 1967a: 52) is borne out by the fact that, whilst in 1960 "in the younger years of primary school at the present time the males outnumbered the females by only one-and-a-half times" (Caldwell 1967a: 53-55), "the proportion of males and females aged 6 years and over who had or were receiving primary schooling in 1968 were 82.4 per cent and 48.9 per cent respectively". Among the urban populations, more than three-fifths of both the 6-14 year olds and 15-19 year olds have ever been to school at some time, while only one-half of their rural counterparts have had the same opportunity (Table 3.10). In 1968, 66 per cent of the rural people and 45 per cent of the urban dwellers had never attended school. It is interesting to note that in 1968 more urban girls aged 6-14 years (69 per cent) were receiving some education than were rural boys in the same age range (60 per cent) (Table 3.10). This partly reflects the concentration of educational facilities in the urban areas.

TABLE 3.10.—SCHOOL ATTENDANCE BY SEX, AGE AND RESIDENCE, 1968  
(Per cent who had Ever Attended or were Attending School)

Age	Urban			Rural		
	Both Sexes	Male	Female	Both sexes	Male	Female
6-14	73.5	78.5	68.9	55.8	60.1	51.2
15-19	70.7	82.8	60.1	55.3	69.1	41.6
20-29	53.7	71.6	40.8	28.2	45.9	16.1
30-39	36.2	52.9	21.6	14.9	25.6	5.5
40-49	29.5	44.1	16.4	7.8	13.4	2.3
50-59	26.5	42.2	12.8	7.0	11.8	2.0
60 +	23.3	35.3	11.1	7.1	10.3	3.0

*Source: Gaisie et. al., op. cit., Vol. 2a, 1970.*

An analysis of types of school attended and grades completed is one of the effective ways of examining in greater detail the educational status of the community. Table 3.11 presents the proportions attending different types of schools. It must be noted that although the number of Ghanaians going to school has increased very rapidly over the years, only a small proportion of them

Table 3.11. – SCHOOL ATTENDANCE BY TYPE OF SCHOOL AND GRADE  
(Percentage of all Enjoying Full-time Education in 1960;  
1968 Figures in Brackets)

Age of School & Grade	Both Sexes	Males	Females
Primary	69.4 (54.3)	66.5 (48.9)	75.3 (62.4)
1-3 years	43.3	40.6	48.6
4-6 years	26.1	25.9	26.7
Middle	24.9 (38.6)	26.7 (42.6)	21.2 (32.6)
1-2 years	14.2	14.8	12.9
3-4 years	10.7	11.9	8.3
Secondary	2.7 (6.5)(a)	3.3 (7.7)(a)	1.5 (4.7)(a)
1-3 years	1.8	2.2	1.0
4-5 years	0.8	0.9	0.4
6 years	0.1	0.2	0.1
University	0.2 (0.5)	0.3 (0.6)	0.4 (0.2)
1-5 years			
<i>Note:</i> (a) For Secondary/Teacher Training/Commercial/Technical Schools. <i>Source:</i> 1960 Census and Gaisie <i>et. al.</i> , <i>op. cit.</i> , Vol. 2a, 1970.			

actually go beyond middle school (a four-year post primary school which can be wholly or partly missed by students passing from primary to secondary schools). In 1960, for example, less than 8 per cent of past school attenders had received either a secondary or university education, and by 1968 there had been little or no increase in the proportion receiving higher education. In absolute terms it appears that more and more Ghanaians are going to school, but only a small proportion of them go on to or complete secondary and university training (Table 3.11). In 1960, only 4.5 per cent of those who had received some kind of education attended secondary school and only 1.8 per cent had reached the fifth form. One per cent had spent six years in the secondary school, 0.2 per cent four years in technical institutions, and about one per cent three or more years in a university. Of those currently experiencing full-time education in 1960, 0.2 per cent, 0.4 per cent and 3 per cent were in a university, technical institution or secondary school respectively.

The regions have maintained their positions on the educational scale as revealed by the 1960 Census figures, and the more urbanized and the richer regions, possessing more educational facilities, still have a higher proportion of their peoples in schools (Table 3.12). Among the 6-14 year olds in Accra Capital District, Eastern, Ashanti and Central Regions, more than seven out of every ten children had ever been to school in 1970; this figure may be compared with about two in every ten in the Northern and Upper Regions.

TABLE 3.12.— SCHOOL ATTENDANCE BY REGION,  
1960, 1968 AND 1970  
(Percentage of Population Aged 6 Years and Over Ever at School)

Region	1960	1968	1970(*)	
			6-14	15-24
Accra Capital District	47	63	77	76
Eastern	35	51	74	74
Ashanti	33	48	76	66
Volta	34	48	65	70
Central	28(a)	42	66	61
Western		40	71	64
Brong-Ahafo	20	36	62	54
Northern	6(a)	21	19	16
Upper		11	24	22
<p><i>Note:</i> (a) Central and Western Regions combined and Northern and Upper Regions combined.</p> <p><i>Source:</i> 1960 Census and Gaisie <i>et. al.</i>, <i>op. cit.</i>, Vol. 2a, 1970</p> <p>(*) 1960 Census 6-14 and 15-24 year olds</p>				

**Marital Status.** In 1960, 65 per cent of the males and 91 per cent of the females aged 15 years and over had ever been married. The corresponding proportions in 1968 were 62 per cent and 87 per cent. These figures show that most Ghanaians, especially the females, do marry. An analysis of marital status by age reveals some interesting features. Whilst five-sixths of males, 15-24, were classified as bachelors, only one-quarter of the females were reported as spinsters. The proportions never married continued to dwindle along the age ladder to such an extent that only 0.4 per cent of the females aged 50 years and over had never married although nearly 3 per cent of the males in the same age group claimed to be bachelors. The proportions currently married increased with age and the highest points were reached in the age groups 45-49 for males and 35-44 for females (Table 3.13). The corresponding age groups in 1968 were 40-49 and 30-39. It appears, therefore, that, on average, men marry girls who are between 5 and 10 years younger than themselves. The percentages of the married males and females fall to 81 per cent and 41 per cent in the age group 50 years and over (Table 3.13). On the other hand, the proportions widowed and divorced increase with age without declining at any point on the age ladder. The increases are steeper after age 44, especially among the females whose remarriage problem at this age is much more acute than that of the males. Thus, whilst about 44 per cent of the females aged 50 years and over are widowed, only 6.6 per cent of the males have this marital

TABLE 3.13. — PERCENTAGE DISTRIBUTION OF THE POPULATION  
AGED 15 YEARS AND OVER BY AGE AND MARITAL STATUS, 1960

MALES				
Age Group	Never Married	Married	Divorced	Widowed
Total 15 & over	34.4	58.6	5.1	1.9
15-24	84.1	14.8	1.0	0.1
25-34	28.0	68.3	4.6	0.6
35-44	8.4	83.0	7.0	1.6
45-49	4.2	85.0	8.0	2.8
50 +	2.8	81.0	9.6	6.6
FEMALES				
Total 15 & over	9.0	74.7	7.2	9.1
15-24	25.8	70.2	3.6	0.4
25-34	1.9	91.0	5.5	1.6
35-44	0.6	85.5	8.0	5.0
45-49	0.5	72.3	12.0	15.2
50+	0.4	41.0	15.2	43.4
Source: D.J. Owusu, "Marriage Patterns and their Effects on Fertility in Ghana", in the <i>Proceedings of the International Union for the Scientific Study of Population</i> , London, 1969; Liege, 1971.				

status. The proportions widowed, therefore, appear to be dependent upon the rate of remarriage and mortality differentials among the sexes and the extent to which polygamy is practised. The proportion divorced is higher among females than among males. In 1968, 5 and 9 per cent of the males and females respectively were divorcees at the time of the sample enquiry (Table 3.14). The 1960 Post-Enumeration Survey data recorded 5 and 7 per cent respectively. It must be noted, however, that it is the comparatively high rates of remarriages among men that accounts for the low percentage of male divorcees. Furthermore, a polygynist does not become a divorcee by losing one of his wives.

It is interesting to note that the marriage pattern revealed by the 1960 Census is, to a great extent, repeated in the 1968 figures (Table 3.14). But a feature revealed by the 1968 figures is that out of 122 children aged between 12 and 14 years who were classified as married, 107 or 88 per cent hail from the Upper Region where very young betrothals are said to be common.

Three important points to note about the marriage patterns described above are: (i) females marry at younger ages than males and on the average, the former tend to be between 5 and 10 years younger than their husbands;

TABLE 3.14. — PERCENTAGE DISTRIBUTION OF THE POPULATION AGED 12 YEARS AND OVER BY AGE AND MARITAL STATUS, 1968

MALES					
Age Group	Never Married	Married	Divorced Separated	Widowed	Not Reported
Total 12 years and over	46.1	48.4	3.8	1.2	0.5
12-14	99.7	0.3	—	—	—
15-19	99.0	2.0	—	—	—
20-29	57.4	40.0	2.0	0.1	0.5
30-39	14.7	78.6	5.3	0.8	0.6
40-49	6.9	85.0	6.4	1.1	0.6
50-59	4.3	83.6	8.2	3.0	0.9
60 & over	9.8	73.0	9.7	6.4	1.1
FEMALES					
Total 12 years and over	21.5	62.4	8.0	8.0	0.1
12-14	96.7	3.2	0.1	—	—
15-19	58.5	37.5	3.8	0.2	—
20-29	9.0	83.1	7.1	0.7	0.1
30-39	1.0	86.9	8.8	3.2	0.1
40-49	0.6	78.2	11.2	9.8	0.2
50-59	0.7	57.7	15.5	25.8	0.3
60 & over	2.2	26.8	15.6	54.6	0.8
<i>Source: Gaisie, et. al., op. cit., Vol.2a, 1970</i>					

TABLE 3.15. — PROPORTION EVER MARRIED

1960		
Age Group	Males	Females
35-44	91.6	99.4
45-49	95.3	99.5
50+	97.2	99.6
1968		
30-39	85.3	90.0
40-49	93.1	99.4
50+	92.7	98.5
<i>Source : Computed from Owusu, op. cit., Table 1</i>		
<i>Gaisie, et. al., op. cit., Vol. 2a, 1970</i>		

TABLE 3.16. – PERCENTAGE DISTRIBUTION OF THE POPULATION AGED 15 YEARS AND OVER BY AGE SEX, MARITAL STATUS AND URBAN-RURAL DIFFERENTIALS, 1960

MALES								
Age Group	Urban				Rural			
	Never Married	Married	Divorced	Widowed	Never Married	Married	Divorced	Widowed
Total 15 & over	41.9	52.9	4.0	1.2	31.6	60.7	5.6	2.1
15-24	86.8	12.5	0.6	0.1	82.8	15.9	1.2	0.1
25-34	31.6	64.6	3.5	0.3	26.4	67.8	5.1	0.7
35-44	8.1	84.4	6.6	0.9	8.6	82.5	7.1	1.8
45-49	5.0	85.4	7.5	2.1	2.7	85.8	9.4	2.1
50+	4.0	79.6	9.6	6.8	2.5	81.3	9.6	6.6
FEMALES								
Total 15 & over	13.3	70.7	7.8	8.2	7.7	75.9	7.0	9.4
15-24	32.8	63.6	3.3	0.3	23.1	72.6	3.8	0.5
25-34	2.9	89.0	6.9	1.2	1.6	91.6	5.0	1.8
35-44	0.9	83.4	10.5	5.2	0.6	86.0	7.3	6.1
45-49	1.1	68.1	15.4	15.4	0.5	73.4	11.0	15.1
50+	0.7	36.7	16.4	46.2	0.3	42.1	14.8	42.8
Source : D.J. Owusu, <i>op. cit.</i> , Table 2								

(ii) males remarry more rapidly than females, especially after age 45 years; (iii) most Ghanaians get married at some stage in their lives (see Van de Walle in Brass *et. al.*, 1968) (Table 3.15). The urban-rural differentials in marriage patterns also show certain marital characteristics. The proportions of both spinsters and bachelors are lower in the rural areas than in the towns and the cities. On the other hand, the proportions currently married in each age group are higher in the countryside than in the urban centres. Whilst almost 0.5 per cent of rural females aged 12-14 years are married, none of the urban girls in the same age group are married. The level of divorce is almost as high among rural females as among their urban counterparts. Yet the urban male marriages appear to be more stable than the rural ones (Tables 3.16 and 3.17). It is clear from Tables 3.16 and 3.17 that both rural males and females marry at younger ages than their urban brothers and sisters. And although age at marriage may be determined by certain socio-economic, cultural and legal elements within a particular society, urban-rural residence has become an important variable determining female marriage patterns by age.



**Age at Marriage.** One much-documented conclusion in socio-demographic studies is that age at marriage, especially for females, is low in Ghana. As Fortes recorded, "a Tallensi woman is married as soon as she is nubile and very few fertile women reach the age of 20 without having had at least one pregnancy" (Fortes 1950: 278). "Ashanti girls marry between 16 and 18 years of age, youths between 20 and 25". Busia observed that "on average, the age of first marriage for girls in the rural towns seemed to be about 18, but just over 21 for girls in the urban towns" (Busia, 1954: 348). It has also been reported that 74 and 63 per cent of the girls in Salt Town and Yeji respectively were first married before they were 19 years old (Tetteh 1967: 202). A survey conducted by Friedlander and Smith (Gaisie 1964) in 1961 revealed that 61 per cent of the women in four rural towns in Ghana married between the ages of 16 and 18 and about 81 per cent married under 20. The corresponding figures for Sekondi-Takoradi were 54 and 70 per cent respectively. Even 65 per cent of the women interviewed in Caldwell's sample survey of the urban elite were under 23 years of age when first married (Caldwell 1967a: 14). According to the Post-Enumeration Survey, 91 per cent of all females aged 15 and over were either married, divorced or widowed. It was also noted that about 84 per cent of 15-24 year old females had been married at least once. A singulate mean age at marriage for females (based on the Post-Enumeration Survey data) has been estimated to be 17.7 years (Aryee, University of Ghana). The singulate mean age at marriage for females is about 5 per cent higher in the urban areas (18.7 years) than in the rural areas.

**Form of Marriage.** The principal form of marriage in Ghana is the customary marriage, which is contracted in accordance with the provisions of the customary law. The customary marriage is celebrated by the giving of marriage payments and by the performance of a series of ceremonies, each of which is regarded as a necessary step towards the establishment of a legal union. Such a union is endowed with certain "legal sanctions" which are recognized by the members of the community. The elaborateness of the ceremonies and the kinds of payments made vary from one part of the country to another. For example, among the Akans, payment of *tiri nsa* which consists of drink and money validates the marriage. The *tiri nsa* varies according to the "socio-economic" status of the girl. On the other hand, it is the ceremony of the powdering of the bride -- *togbagba* -- which validates marriage among the Anlo Ewes and not the marriage payments as such (Nukunya 1969: 63ff).

Another form of marriage which one comes across in Ghana, especially among the educated Ghanaians, is the marriage contracted under the "Marriage Ordinance" (*Cap. 127 of the Laws of Ghana*). Unlike the customary marriage, it is monogamous and can only be dissolved in a court of law. This form of marriage is regarded as a prestige symbol and the educated women prefer it to



other forms of marriage because "it gives them and their children security with regard to inheritance of the husband's personal property" (Busia, 1950: 45). Two-thirds of the husband's personal property goes to the wife and the children if he dies intestate. The wife, however, gets only one-third of the property if the man is not survived by a child.

Islamic marriage is similar to the Christian church marriage in many respects. In both cases, the local minister of religion records the marriage and he is supposed to be consulted in case of divorce. The Islamic marriage is, however, celebrated in accordance with the provisions of the *Marriage of the Mohammedans* (Cap. 129 of the *Laws of Ghana*) and one of the provisions is that the men can marry as many as four wives and no more. It must be noted that in Ghana a marriage can take more than one of the forms described above and in most of these cases the customary marriage forms an integral part of the other types of marriage (Table 3.18).

TABLE 3.18. — MARRIED MALES BY FORM OF MARRIAGE ; TOTAL COUNTRY AND URBAN-RURAL, 1960  
(Percentages)

Form of Marriage	Total Country	Urban	Rural
Customary	86.1	80.3	88.0
Ordinance (with Customary and Church as well)	2.9	5.9	1.9
Customary and Church	1.5	1.5	1.5
Moslem with or without Customary	5.4	9.3	4.2
Mutual Consent	4.0	2.9	4.4
Other (by Ordinance only, Hindu, etc.)	0.1	0.1	0.0

TABLE 3.19. — MARRIED FEMALES BY FORM OF MARRIAGE ; TOTAL COUNTRY AND URBAN-RURAL, 1968  
(Percentages)

Form of Marriage	Total Country	Urban	Rural
Customary only	81.7	76.3	8.0
Ordinance only	0.3	0.8	0.1
Ordinance/Church/Moslem	5.8	12.8	3.0
Mutual Consent	11.0	9.0	11.8
Other (Hindu or Buddhist custom etc.)	0.1	0.1	—
Not reported	1.1	1.0	1.1
Source : Gaisie, et. al., op. cit., Vol. 2a, 1970			

There is another type of union which is usually referred to as "mutual consent". It has no legal status. It is a *de facto* union which is characterized by the continuous cohabitation of the partners.

The 1960 Post-Enumeration Survey data show that, at the time of the enquiry, 86 per cent of the ever-contracted marriages of the males were customary marriages (Table 3.18). The regional proportions ranged from 78 per cent in Brong-Ahafo to 92 per cent in the Northern and Upper Regions. In 1968, 80 per cent of the currently married women were married under the customary law. About 96 per cent of the women in the Upper Region and 68 per cent of their Ashanti counterparts had been so married (Table 3.19). The figures in Tables 3.18 and 3.19 show that the proportion of customary marriages in the rural areas is higher than in the urban centres. In 1960, the marriages contracted under the Marriage Ordinance accounted for only 2.9 per cent (including both those with and without church blessing) of the ever-contracted marriages; the Accra Capital District had the highest proportion of such marriages (7.9 per cent). A greater proportion of the urban dwellers than rural people go in for this type of marriage (Tables 3.18 and 3.19). In spite of the fact that the number of legal marriages is increasing, they still form only a comparatively small proportion of the total marriages contracted in the country.

Among the currently married females, only 0.3 per cent of their marriages were registered and only a very small number of the marriages classified under "Church" falls into the category of ordinance marriage (Table 3.19).

Islamic marriages are also more common in the towns than in the countryside; the Ashanti and Brong-Ahafo Regions top the list with about 8 per cent and 10 per cent respectively of the marriages contracted by males. These figures indicate that Islamic marriage is more important in the south than in the northern part of the country. The 1968 figures, however, show that about 42 per cent of the currently married female marriages in the Northern Region were classified as "Church" and about 90 per cent of these marriages were Moslem marriages. It is interesting to note that about 96 per cent of the Upper Region marriages were classified as customary, and 2.4 per cent of the marriages were reported as "Church" marriages. Thus Islamic marriages are more commonly found in the Northern Region than in the Upper Region where more than four-fifths of the female extant marriages were contracted under customary law.

The Christian church marriages accounted for only 1.5 per cent of all the ever-contracted male marriages in 1960. Whilst about 4 per cent of the male ever-contracted marriages were classified as mutual consent in 1960, 12 per cent of the currently married women were living in such a union in 1968. A large number of such unions were reported in Ashanti, Brong-Ahafo, Volta and Eastern Regions. A distribution of mutual consent unions by age indicates that the union represents a transitional stage in conjugal status.

According to the figures provided by the Post-Enumeration Sample Survey, about 28 per cent of married men were polygynists, and, amongst these, 76 per cent had 2 wives and 5.8 per cent had 4 wives or more. Table 3.20 also shows that polygyny is practised more extensively in the rural areas than in the towns and the cities and that Volta and Northern Regions exhibit the highest incidence of polygyny followed by the Ashanti and Brong-Ahafo Regions. The proportion of polygynous marriages ranges from 20 per cent in Accra Capital District to 33 per cent in the Northern Region.

TABLE 3.20. — MARRIED MALES BY NUMBER OF WIVES; TOTAL COUNTRY, URBAN AND RURAL, 1960 (Percentages)

Number of Wives	Total Country	Urban	Rural
1	73.8	78.6	72.2
2	20.0	16.8	21.0
3	4.6	3.4	5.0
4	1.1	0.8	1.3
5 or more	0.5	0.4	0.5
<i>Source : D.J. Owusu, op. cit., Table 4</i>			

**Household Size and Composition.** A Ghanaian household may contain both related and unrelated persons and the former group may also constitute one or more conjugal family nuclei consisting of married children and also the Head's and/or spouse's sisters and brothers and their children, including grandchildren and in-laws. According to the 1968 Sample Survey and the 1960 Post-Enumeration Survey, about 1.6 per cent and 2.8 per cent respectively of the persons enumerated were not related to the heads of the households of which they were members. The corresponding proportions of one per cent and 2.9 per cent, and 3 per cent and 4.7 per cent for the rural and the urban areas respectively indicate that households containing unrelated persons are more a feature of the urban areas than the rural areas where kinship ties are stronger and a network of family relationships are such that relatively few households are instituted with unrelated persons. Thus, a Ghanaian household consists mainly of related persons and household formation may generally reflect tendencies towards family formation. In what follows, therefore, an attempt is made to identify different types of families which reflect some of the basic characteristics of the Ghanaian social system.

**Household Types.** The 1968 sample population of 114,211 persons lived in 23,000 households of which 46 per cent and 20 per cent were husband and wife and one-spouse households respectively. In addition,

there were 2,116 (or 9 per cent) multi-wife households and 139 (or 0.6 per cent) households which were composed entirely of unrelated persons. Table 3.21 describes the major household types and also shows their percentage distribution. The general picture given by the 1968 data is one of a predominance of husband-wife households followed by one-spouse and one-person households. This pattern is somewhat reflected in the 1960 Post-Enumeration Survey figures of 17.9 per cent, 26.6 per cent and 55.5 per cent (1) for the one-person, one-parent and husband-wife households respectively. Nearly one-half of the rural households were of the husband-wife type and the corresponding percentage for the urban section was 40 per cent. As would be expected, the multi-wife households were more than twice as many in the villages as in the towns and cities and 22 per cent of the rural population as against 13 per cent of the urban population lived in this type of household. On the other hand, the one-person and one-parent households tend to be a more common form of living arrangement in the urban than in the rural areas (Table 3.21); 1.7 per cent and 18 per cent of the rural female population as compared with the urban 3.0 per cent and 30 per cent lived in these types of households respectively. The proportion of urban males living alone was nearly twice that of their rural counterparts and for every one rural male living in a non-related persons' household there were three male urbanites. Thus, the proportions of one-person and non-related persons' households increase as one moves from the village to the town and the city; these household patterns are indicative of different socio-economic conditions existing in the urban and the rural sectors of the community. The loose kinship ties and social and economic constraints prevalent in the urban environment make people enter into certain

TABLE 3.21. - HOUSEHOLD TYPES, 1968

Household Type	Total Country		Urban		Rural	
	Number	Per cent	Number	Per cent	Number	Per cent
All Households	23,090	100.0	7,184	100.0	15,906	100.0
One-person	4,149	18.0	1,633	22.7	2,516	15.8
Husband-wife	10,560	45.7	2,850	39.7	7,710	48.5
Multi-wife	2,116	9.2	343	4.8	1,773	11.1
One-spouse	4,587	19.8	1,771	24.7	2,816	17.7
Related persons other than Head and wife/wives	1,539	6.7	508	7.1	1,031	6.5
Non-related persons	139	0.6	70	1.0	60	0.4

(1) This figure includes households formed by related persons other than the Head and wife/wives and also those of non-related persons. Note that the comparable figure for 1968 is 53.0 per cent.

living arrangements which would not be necessary under the traditional social system. It is also interesting to note that the probability that the death of the head would disintegrate the household is higher in the rural areas (Table 3.21) where the social system makes it less difficult for the members to be absorbed into other existing households.

The sex differentials in respect of household patterns reveal some interesting features. The one-spouse households contained proportionately more females than males especially in the towns and the cities where 30 per cent of the females as against 22 per cent of the males lived in one-spouse households (Table 3.22); a phenomenon which is partly indicative of higher male mortality (see Chapter II). The relatively low percentage of rural females as compared with the urban females who were heads of one-spouse households is also indicative of the greater tendency among rural households to disappear after the death of the male head. As stated above, this is due mainly to the restructuring of the living arrangements which is made easier by the existing traditional social system. The higher proportion of males than females living alone -- i.e. one-person households -- is suggestive of the tendency among unmarried, divorced and widowed females to stay with relatives rather than to set up their own households. For example, whilst 60 per cent of male divorcees had established one-person households, only 20 per cent of their female counterparts preferred that form of living arrangements and the corresponding proportions for widowers and widows were 37 per cent and 20 per cent respectively (Gil, *et. al.*, 1971: 20, Table A).

TABLE 3.22. — SAMPLE POPULATION BY SEX, URBAN-RURAL AND HOUSEHOLD TYPE, 1968 (Percentage Distribution)

[illegible]

Household Composition. Forty-four per cent of the households consisted of nuclear families(1) with an average family size of 4.6; the corresponding figures based on the 1960 Post-Enumeration Survey were 41.6 per cent and 4.3 per cent respectively (Table 3.23). The next largest group of families is the extended family type which formed between 38 per cent (1968 Survey) and 41 per cent (1960 Post-Enumeration Survey) of the total households, indicating the extent to which Ghanaian society is permeated by the extended family system with its relatively large average family size of between 6.0 (1960 Post-Enumeration Survey) and 7.0 (1968 Survey). The 1968 Survey also showed that about 6.7 per cent of the families were made up of related persons other than head and wife or wives and non-relatives and this is probably an indication of families being formed or maintained by grown-up children with their brothers and sisters and their children after the death of both parents.

TABLE 3.23. – HOUSEHOLD COMPOSITION AND HOUSEHOLD SIZE, 1960 AND 1968 (Percentages)

Family-Household Type	Urban and Rural Percentages		Average Number of Persons per Household	
	1960(a)	1968	1960(a)	1968
All households	100.0	100.0	4.3	4.9
(i) One person only	17.9	18.0	1.0	1.1
(ii) Nuclear family :				
a) Husband-wife and children	32.6	28.3	4.3	4.6
b) Husband-wives and children (1)	—	4.6	—	8.1
(iii) One-spouse family	9.0	11.5	3.3	3.6
(iv) Other families (2)				
a) Other than head-wife or wives and non-related persons	40.5	37.6 (6.7)	6.1	7.0 (3.8)
b) Extended families		(30.9)		(7.7)
Notes : (a) Gil. <i>et. al.</i> , 1971: 79, Table A.30				
(1) The Post-Enumeration Survey did not classify this group separately but it is assumed that it was included in (ii) (a).				
(2) Categories (iv) (a) and (b) were probably lumped together in the Post-Enumeration Survey classification.				

The same household patterns prevail in both the urban and the rural areas except that nuclear and extended families are more commonly found in the vil-

(1) They include multi-wife families with children only.

larges than in the urban areas (Table 3.24). On the other hand, one-person family households and one-parent family households are notable features of the urban household structure (Table 3.24).

TABLE 3.24a. – PERCENTAGE DISTRIBUTION OF HOUSEHOLD SIZE,  
1960 AND 1968

Number of Household Members	Urban/Rural		Urban		Rural	
	1960(1)	1968	1960	1968	1960	1968
All household members	100.0	100.0	100.0	100.0	100.0	100.0
1	20.4	18.0	28.5	22.8	17.1	15.8
2-3	28.5	22.9	31.1	24.6	26.5	22.3
4-6	21.7	33.0	27.1	30.4	33.4	34.2
7-9	12.2	16.6	8.9	14.6	13.6	17.5
10 +	7.2	9.5	4.4	8.2	8.4	10.2
Average size	4.3	4.9	3.6	4.8	4.6	5.0
<i>Source:</i> Gil, <i>et. al.</i> 1971: 5, Table A.2						

TABLE 3.24b: – AVERAGE SIZE OF HOUSEHOLD BY REGION AND RESIDENCE  
1960(1) AND 1968

Region	Urban/Rural		Urban		Rural	
	1960	1968	1960	1968	1960	1968
All Regions	4.3	4.9	3.6	4.8	4.6	5.0
Accra Capital District	3.4	4.2	3.3	4.3	4.2	5.0
Eastern	4.6	4.8	3.8	3.9	4.9	4.9
Central/Western	3.8	4.5(2)	3.5	4.2(4)	4.0	4.6(6)
Volta	4.5	5.0	4.0	5.1	4.7	4.8
Ashanti	3.9	4.9	3.5	5.3	4.0	4.8
Brong-Ahafo	3.8	5.4	3.5	5.2	3.8	5.5
Northern/Upper	6.7	6.6(3)	5.1	6.0(5)	6.8	6.8(7)
<i>Source:</i> (1) Gil, <i>et. al.</i> , 1971: 3-4, Table A.1 (2) 1968 Survey – Central 4.4; Western 4.6 (3) 1968 Survey – Northern 6.4; Upper 6.7 (4) 1968 Survey – Central 4.0; Western 5.6 (5) 1968 Survey – Northern 6.0; Upper 6.0 (6) 1968 Survey – Central 4.8; Western 4.4 (7) 1968 Survey – Northern 6.5; Upper 6.9						

Household Size. The average household size ranges from 4.3 (1960 Post-Enumeration Survey) to 4.9 (1968 Survey) with the rural average size exceeding that of the urban areas by 4 per cent (1968 Survey). The

1960 figures, however, suggest a greater urban-rural differential (Table 3.24a) but whilst it is likely that the 1968 urban figure might have been inflated by sampling fluctuations and/or other types of errors, the extent to which the 1960 urban or rural figures are affected by similar types of errors or by the adjustment exercise (see Gil, *et. al.*, 1971: xxx-xxxii)(1) cannot be determined on the basis of available data. A comparison between the 1960 and 1968 regional average household sizes (Table 3.24b) indicated that, whilst there is an excellent agreement between the rural figures (except Ashanti and Brong-Ahafo Regions), the 1968 urban figures appear to be slightly high. On the other hand, the 1960 figures for the Ashanti and Brong-Ahafo Regions seem comparatively too low and on the basis of the prevalent fertility and mortality levels in these regions and the social systems of the indigenous peoples, the 1968 figures seem more plausible than those based on the 1960 data. Though it may be surmised that the household size has been increasing since 1960, the difference between the two sets of figures cannot be attributed wholly to an increase in the household size, if indeed there was any at all.

Table 3.24a shows that 59 percent of the households contained four or more persons and that more than 20 per cent of the population lived in households with seven or more members. It will be seen from Table 3.24a that one conspicuous feature of the rural household structure is the predominance of large sized households (i.e. households with four or more members).

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(1) See also the discussion on the Post-Enumeration Survey in Appendix III: I (Gaisie 1973).



## CHAPTER IV

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# POPULATION DISTRIBUTION AND INTERNAL MIGRATION

**Introduction.** In the preceding chapters, we have discussed two of the components of population growth — fertility and mortality. In this chapter, we shall consider the third component, migration. Migration is the term generally applied to the movement of people from one place to settle permanently or, for long periods, in another place. When the movement is within the territorial limits of a country, this is referred to as internal migration but when the movements take place across international boundaries they are referred to as international migratory movements. The reasons for migratory movements may in general be political, social or economic but in Ghana most of the internal migratory movements are due to socio-economic factors. Migration, both internal and international, accounts mainly for the differential rates of population growth in different parts of the country. Thus, migration is a principal factor in determining the spatial distribution of the population. In this chapter, therefore, we shall discuss the spatial distribution of Ghana's population. We shall also consider the size and direction of migratory movements in Ghana, as far as available statistics will make such analysis possible. It should be noted also that both internal and international migration have demographic, social and economic effects on the places of origin as well as on the places of destination (de Graft-Johnson, 1975). In this chapter, some of these consequences will be considered. The effect of migration on the age-sex composition of the population and on the size, growth and characteristics of the labour force will be briefly discussed. The social problems posed by immigrants in relation to the receiving countries will be studied. Finally, some of the contributions both positive and negative which migrants make to the economy of Ghana will be considered briefly.

**Spatial Distribution.** In Table 4.1, the population, number of localities, area and population density per sq. km. of the regions are shown. The regional differences in per cent increase of the population between 1960 and 1970 are due more to migratory movements than to any pronounced regional differentials in fertility and mortality. Thus, while the recorded rate of

increase of the total population is 2.4 per cent per annum, the rate for Greater Accra region is 5.6 per annum. This rapid rate of population growth for the Accra region is reflected also in its population density. The 1970 population density per sq. km. for Greater Accra region was 329. It should be noted that this region contains the twin cities of Accra and Tema. Accra is not only the capital of Ghana but also about 90 per cent of the large industrial establishments in Ghana are sited in the Accra-Tema metropolitan area. The concentration of almost all the headquarters of government departments and ministries, and also of most industries has led to a very rapid increase in population and has also resulted in high population densities. Although Northern region recorded the second highest growth rate, its population density remained very low. This is mainly due to the fact that large areas of the Northern region are either completely uninhabited or very sparsely populated. A detailed look at Table 2 of Volume I of the 1970 Census Report (Government of Ghana 1970) shows that most of the local authorities in that region have very large areas and populations which are very low. As expected, there is generally an inverse relationship between the areas of the local authorities and their population densities.

TABLE 4.1. – 1970 POPULATION, LOCALITIES,  
AREA AND DENSITY BY REGION

Region	Population	Localities	Area in sq. km.	Population Density (per- sons/sq. km.)	Population increase from 1960 to 1970 (per cent)
All regions	8,559,313	47,769	214,612	40	27.2
Western	770,087	5,157	23,921	32	23.0
Central	890,135	4,570	9,826	91	18.5
Greater Accra	851,614	710	2,592	329	73.2
Eastern	1,261,661	5,273	19,976	63	15.3
Volta	947,268	5,655	20,570	46	21.9
Ashanti	1,481,698	11,451	24,389	61	33.6
Brong-Ahafo	766,509	9,393	39,557	19	30.4
Northern	727,618	3,150	70,384	10	36.9
Upper	862,723	2,410	27,318	32	13.9

The distribution of population in Ghana therefore follows the following general pattern:

(a) The very densely populated Accra-Takoradi-Kumasi triangle.

(b) The relatively densely populated areas of the Greater Accra, Central, Eastern and Ashanti regions which fall outside the Accra-Takoradi-Kumasi triangle. The exceptions are the following local councils : Afram (in Eastern region), Sekyere and Nsuta-Kwamang-Bepawso (in Ashanti). Afram Local Council whose area of jurisdiction covers the Afram Plains has a very low density of about 6 per sq. km.

(c) The area of moderate populations which cover the Volta region (except Kete Krachi) and parts of Western and Upper regions.

(d) The sparsely populated and almost empty areas in the Northern (except Tamale Urban Council area) and the following local council areas: Amenfi, Aowin and Juabeso-Bia (in Western Region), Kete Krachi (in the Volta region), Sekyere and Nsuta-Kwamang-Kepawso (in Ashanti), Wenchi, Nkoranza, Attebubu, Kwame Danso (in Brong-Ahafo) and Nadawli-Funsi and Tumu (in Upper region).

The pattern presented above is a rather generalised one. For example, in the moderately populated areas of the Upper region, there are densely populated areas around Lawra, Navrongo, Bolgatanga and Bawku. Writing in 1966, T.E. Hilton states: "In two areas densities exceed 512 per square mile, one on the Kulubiliga-Kuldaga watershed, into which already crowded area population moved from the riverine districts, the other around Bolgatanga and Zuarungu. Otherwise densities are highest on the west, reaching 420 per square mile in western Bongo, facing the over-crowded area of Kassena Nankanni". (Hilton 1968: 284-285).

**Internal Migration.** Like most countries in Africa, Ghana experiences a great deal of movement of population from one locality to another. In fact, the usual four types of internal migratory movements are identifiable in Ghana: rural to rural, rural to urban, urban to urban and urban to rural. Of these, although the rural to rural movements are the most numerous, the most significant is the rural to urban movement which will be discussed in greater detail in the next section. The 1960 Ghana's Population Census (Census Office 1961) showed that of all those enumerated, only 58 % were born in the locality of enumeration. Of the rest 22 % were born in other localities but in the same region, 12 % were born in another region and 8 % were born abroad. By the time of the 1970 census, only 57.1 % of the population (males 57.5 %, females 56.7 %) were enumerated in the locality of birth and 20.9 % (males 18.0 %, females 23.8 %) were enumerated in a locality other than their place of birth but in the same region. (Census Office 1972). In addition, 17.9 % (males 19.6 %, females 16.3 %) were enumerated in a region other than their region of birth, while 8.1 % (males 4.9 %, females 3.2 %) were born outside Ghana. One obvious fact discernible from the 1960 and 1970 censuses was the great drop in the population born outside Ghana. This trend will be examined in some detail in section 4.5. From the facts presented above, however, it is clear that there is considerable intra-regional as well as inter-regional movement. Unfortunately, the data on inter-regional movements can sometimes be deceptive because a movement between two localities in the same region (an intra-regional movement) could cover a longer distance than an inter-regional movement which took place between two localities on the borders of two contiguous regions; but





TABLE 4.4. — POPULATION IN 1970 BY REGION OF ENUMERATION AND REGION OF BIRTH — PERCENTAGES

Region of Enumeration	Sex	Region of Birth								
		Western	Central	Greater Accra	Eastern	Volta	Ashanti	Brong-Ahafo	Northern	Upper
All regions	M	100	100	100	100	100	100	100	100	100
	F	100	100	100	100	100	100	100	100	100
Western	M	85.2	8.4	2.3	2.9	1.9	3.2	1.8	1.2	2.6
	F	86.5	7.3	1.7	2.0	1.5	2.2	1.2	0.7	1.3
Central	M	3.5	74.2	2.2	2.7	1.5	1.9	0.5	0.4	1.0
	F	3.4	77.2	1.8	2.3	1.2	1.4	0.4	0.3	0.4
Greater Accra	M	4.1	6.7	82.2	10.0	7.8	3.4	1.1	1.3	2.0
	F	3.4	5.8	84.4	9.5	6.8	2.3	0.7	1.0	1.0
Eastern	M	1.7	4.2	6.9	75.6	7.2	2.1	0.9	1.0	1.7
	F	1.5	3.9	6.4	78.2	6.3	1.7	0.7	0.6	0.8
Volta	M	0.6	0.4	1.8	1.8	75.3	0.6	0.4	2.4	0.4
	F	0.5	0.3	1.7	1.7	79.3	0.5	0.3	2.6	0.3
Ashanti	M	3.2	4.3	2.5	4.7	2.6	82.3	5.4	4.4	8.4
	F	3.2	4.2	2.2	4.4	2.0	86.1	5.2	3.4	4.5
Brong-Ahafo	M	0.7	1.1	0.9	1.6	1.8	4.7	88.4	4.1	5.5
	F	0.7	0.9	0.8	1.4	1.4	4.2	90.1	3.2	2.7
Northern	M	0.4	0.4	0.7	0.5	1.5	0.9	0.9	84.4	2.5
	F	0.3	0.3	0.6	0.4	1.2	0.7	0.7	87.2	2.3
Upper	M	0.7	0.2	0.6	0.3	0.3	1.1	0.7	0.8	75.8
	F	0.6	0.2	0.5	0.2	0.2	0.9	0.6	1.1	86.6

whatever interpretation is placed on the place of birth statistics which we are using as proxy for migration data, it is quite clear that there is considerable mobility in the population of Ghana. Although the data obtained from the census do not permit an analysis of seasonal inter-regional migration, it is possible to make broad conclusions based on the matrices of birthplace by place of enumeration which are presented in Tables 4.2 and 4.3. It is also possible to rank the regions from the least to the greatest according to the proportion of migrants to the region with the least proportion, the figures in brackets being percentages. The following rank is obtained:

Greater Accra	(46.0)
Western	(48.3)
Eastern	(51.4)
Brong Ahafo	(53.0)
Ashanti	(54.4)
Volta	(63.1)
Northern	(64.2)
Central	(65.4)
Upper	(70.8)

As previously explained, birthplace statistics can be used as proxy for migration data. From the usual census question 'where were you born', replies can be obtained which would show movements which have occurred from place of birth to place of enumeration. However, no time element (i.e. duration of movement) can be implied in any analysis of such data. This is a serious limitation in view of the fact that a *de facto* rather than a *de jure* approach was used in recent censuses in Ghana. In spite of these limitations, it is possible from data collected in two successive censuses to obtain indirect measures of life-time in-migrants and outmigrants by region.

TABLE 4.5. — ESTIMATE OF NET MIGRATION FROM BIRTHPLACE DATA,  
REGIONS IN GHANA, MALES, 1960-1970

Region (1)	Life time in-migrants		Life time out-migrants		Net intercensal migration 1960-1970		
	1960 (2)	1970 (3)	1960 (4)	1970 (5)	Among out-born (6)	Among in-born (7)	Total (8)
Western	82,140	129,031	73,518	118,090	+ 60,033	- 56,335	+ 3,698
Greater Accra	82,165	190,871	30,711	45,353	+ 121,852	- 19,556	+ 102,296
Eastern	85,570	109,276	92,441	157,833	+ 37,397	- 80,183	- 42,786
Volta	22,051	35,864	73,825	127,864	+ 17,341	- 65,851	- 48,510
Ashanti	115,633	155,417	60,507	115,968	+ 58,285	- 65,142	- 6,857
Brong-Ahafo	63,721	103,683	12,966	34,525	+ 50,157	- 23,634	+ 26,523
Northern	18,016	40,963	125,328	165,472	+ 25,830	- 60,196	- 34,366

Survival ratio 0.84

Tables 4.2 and 4.3 show the distribution of population by place of birth and sex in 1960 and 1970 respectively. From these two tables, it is possible to get a rough picture of inter-regional migration in the intercensal period 1960-1970. It is necessary to state that the 1970 regions differ somewhat from the 1960 ones. The 1970 Western and Central regions made up in 1960 the Western region, and the present Northern and Upper regions similarly constituted the Northern region. For purposes of comparison, therefore, it has been necessary to rearrange the 1970 data to conform to the 1960 regions. Using a uniform survivorship ratio of 0.84 between 1960 and 1970, it is possible, as in Table 4.5,

TABLE 4.6a MALES. — OVERALL SURVIVAL RATIOS OF MALES  
BY REGION OF BIRTH, GHANA, 1960-1970

Region of Birth (1)	Males born in the region and enumerated anywhere in Ghana 1960 (2)	Males 10 years old and over born in the region and enumerated anywhere in Ghana 1970 (3)	Ten year survival ratio 1960-1970 (4) = (3)/(2)
Western	627,872	502,415	0.8001
Greater Accra	160,318	140,431	0.8759
Eastern	499,143	425,517	0.8524
Volta	389,454	344,975	0.8857
Ashanti	445,777	388,485	0.8714
Brong-Ahafo	219,809	167,557	0.7622
Northern	704,828	578,577	0.8208
All regions	3,047,201	2,547,957	0.8361

TABLE 4.6b FEMALES. — OVER-ALL SURVIVAL RATIOS OF FEMALES  
BY REGION OF BIRTH, GHANA, 1960-1970

Region of Birth (1)	Females born in the region and enumerated anywhere in Ghana 1960 (2)	Females 10 years old and over born in the region and enumerated anywhere in Ghana 1970 (3)	Ten-year survival ratio 1960-1970 (4) = (3)/(2)
Western	663,643	552,276	0.8321
Greater Accra	165,829	151,443	0.9132
Eastern	519,358	451,070	0.8685
Volta	407,263	366,734	0.9004
Ashanti	468,961	417,319	0.8898
Brong-Ahafo	227,389	180,291	0.7928
Northern	667,460	566,069	0.8480
All regions	3,119,903	2,685,202	0.8606



to estimate net migration among males in the intercensal period 1960-70. The same procedure can be adopted for females. On this very rough basis, it is assumed that most of the regions lost populations through migration to Greater Accra and Brong-Ahafo regions. More refined estimates of migration among males and females can be made from the information contained in Tables 4.6(a) and 4.6(b)(1). On this basis, it is possible to find the estimated net migration to

TABLE 4.7a. – ESTIMATED NET MIGRATION TO WESTERN REGION BY GEOGRAPHIC REGION OF BIRTH, MALES 1960-1970

Region of Birth (1)	Males enumerated in Western Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	554,354	443,539	408,091	– 35,448
Greater Accra	7,848	6,874	7,762	+ 888
Eastern	22,068	18,811	28,450	+ 9,639
Volta	12,291	10,886	15,227	+ 4,341
Ashanti	15,698	13,679	25,408	+ 11,729
Brong-Ahafo	1,259	960	4,872	+ 3,912
Northern	22,976	18,859	22,964	+ 4,105
Total	636,494	513,608	512,774	– 834

TABLE 4.7b. – ESTIMATED NET MIGRATION TO GREATER ACCRA REGION BY GEOGRAPHIC REGION OF BIRTH, MALES, 1960-1970

Region of Birth (1)	Males enumerated in Greater Accra Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	18,534	14,829	37,403	+ 22,574
Greater Accra	129,607	113,523	111,028	– 2,495
Eastern	30,188	25,732	55,760	+ 30,028
Volta	16,682	14,775	34,334	+ 19,559
Ashanti	7,518	6,551	18,267	+ 11,716
Brong-Ahafo	803	612	2,793	+ 2,181
Northern	8,440	6,928	14,046	+ 7,118
Total	211,772	182,950	273,631	+ 90,681

(1) The authors are grateful to Mr. J.A. Ackah of ISSER for some of the calculations in this section.

TABLE 4.7c. – ESTIMATED NET MIGRATION TO EASTERN REGION  
BY GEOGRAPHIC REGION OF BIRTH, MALES 1960-1970

Region of Birth (1)	Males enumerated in Eastern Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	21,404	17,125	19,954	+ 2,829
Greater Accra	12,899	11,298	11,735	+ 437
Eastern	406,702	346,673	296,290	– 50,383
Volta	27,233	24,120	31,273	+ 7,153
Ashanti	9,139	7,964	10,723	+ 2,759
Brong-Ahafo	909	693	1,911	+ 1,218
Northern	13,986	11,480	11,280	– 200
Total	492,272	419,353	383,166	– 36,187

TABLE 4.7d. – ESTIMATED NET MIGRATION TO VOLTA REGION  
BY GEOGRAPHIC REGION OF BIRTH, MALES 1960-1970

Region of Birth (1)	Males enumerated in Volta Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	1,825	1,460	2,262	+ 802
Greater Accra	2,279	1,996	2,173	+ 177
Eastern	7,117	6,067	8,559	+ 2,492
Volta	315,629	279,553	237,797	– 41,756
Ashanti	1,848	1,610	2,430	+ 820
Brong-Ahafo	380	290	688	+ 398
Northern	8,602	7,061	9,639	+ 2,578
Total	337,680	298,037	263,548	– 34,489

TABLE 4.7e. – ESTIMATED NET MIGRATION TO ASHANTI REGION  
BY GEOGRAPHIC REGION OF BIRTH, MALES 1960-1970

Region of Birth (1)	Males enumerated in Ashanti Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	23,792	19,036	24,652	+ 5,616
Greater Accra	4,363	3,822	4,210	+ 388
Eastern	23,986	20,446	24,488	+ 4,042
Volta	9,138	8,094	11,874	+ 3,780
Ashanti	385,270	335,724	302,563	– 33,161
Brong-Ahafo	8,202	6,252	11,436	+ 5,184
Northern	46,152	37,882	54,873	+ 16,991
Total	500,903	431,256	434,096	+ 2,840

TABLE 4.7f. — ESTIMATED NET MIGRATION TO BRONG-AHAFO REGION  
BY GEOGRAPHIC REGION OF BIRTH, MALES 1960-1970

Region of Birth (1)	Males enumerated in Brong-Ahafo Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	5,325	4,261	6,046	+ 1,785
Greater Accra	1,677	1,469	1,577	+ 108
Eastern	6,798	5,795	8,268	+ 2,473
Volta	3,753	3,324	7,165	+ 3,841
Ashanti	20,996	18,296	22,083	+ 3,787
Brong-Ahafo	206,843	157,656	143,032	- 14,624
Northern	25,172	20,661	39,260	+ 18,599
Total	270,564	211,462	227,431	+ 15,969

TABLE 4.7g. — ESTIMATED NET MIGRATION TO NORTHERN REGION  
BY GEOGRAPHIC REGION OF BIRTH, MALES 1960-1970

Region of Birth (1)	Males enumerated in Northern Region in 1960 (2)	Males 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	2,638	2,111	4,007	+ 1,896
Greater Accra	1,645	1,441	1,946	+ 505
Eastern	2,284	1,947	3,702	+ 1,755
Volta	4,728	4,188	7,305	+ 3,117
Ashanti	5,308	4,625	7,011	+ 2,386
Brong-Ahafo	1,413	1,077	2,822	+ 1,745
Northern	579,500	475,654	426,515	- 49,139
Total	597,516	491,043	453,308	- 37,735

the regions by males and females separately for the period 1960-70. These are contained in Tables 4.7(a) to 4.7(f) for males and 4.8(a) to 4.8(g) for females. The tables are self-explanatory and show that for males, using the differential survivorship ratios, the Western region lost 834 persons through migration between 1960-70, Greater Accra gained 90,681, Western region lost 36,187, Volta lost 34,489, Ashanti gained 2,840, Brong-Ahafo gained 15,969 and Northern lost 37,735. It should be stated quite clearly that these are very crude, indirect estimates and that they do not take into account migration among persons who were born within the intercensal period. But the general picture is clear that Greater Accra, Ashanti region and Brong-Ahafo are the only three

TABLE 4.8a. – ESTIMATED NET MIGRATION OF FEMALES TO WESTERN  
REGION BY GEOGRAPHIC REGION OF BIRTH, 1960-1970

Region of Birth (1)	Females enumerated in Western Region in 1960 (2)	Females over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	596,873	496,658	467,016	– 29,642
Greater Accra	6,131	5,599	5,581	– 18
Eastern	17,570	15,260	21,697	+ 6,437
Volta	9,691	8,726	11,778	+ 3,052
Ashanti	11,713	10,422	16,867	+ 6,445
Brong-Ahafo	828	656	2,972	+ 2,316
Northern	10,649	9,030	10,183	+ 1,153
Total	653,455	546,351	536,094	– 10,257

TABLE 4.8b. – ESTIMATED NET MIGRATION OF FEMALES TO GREATER ACCRA  
REGION BY GEOGRAPHIC REGION OF BIRTH, 1960-1970

Region of Birth (1)	Females enumerated in Greater Accra Region in 1960 (2)	Females 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	14,229	11,840	31,855	+ 20,015
Greater Accra	137,624	125,678	126,172	+ 494
Eastern	28,614	24,851	52,717	+ 27,866
Volta	14,243	12,824	30,724	+ 17,900
Ashanti	4,713	4,194	11,963	+ 7,769
Brong-Ahafo	375	297	1,592	+ 1,295
Northern	4,686	3,974	6,971	+ 2,997
Total	204,484	183,658	261,994	+ 78,336

TABLE 4.8c. – ESTIMATED NET MIGRATION TO EASTERN REGION  
BY GEOGRAPHIC REGION OF BIRTH, FEMALES 1960-1970

Region of Birth (1)	Females enumerated in Eastern Region in 1960 (2)	Females 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	20,401	16,976	18,650	+ 1,674
Greater Accra	13,151	12,009	11,015	– 994
Eastern	435,706	378,411	334,753	– 43,658
Volta	24,530	22,087	27,451	+ 5,364
Ashanti	7,159	6,370	8,135	+ 1,765
Brong-Ahafo	600	476	1,341	+ 865
Northern	6,163	5,226	5,091	– 135
Total	507,710	441,555	406,436	– 35,119

TABLE 4.8d. – ESTIMATED NET MIGRATION TO VOLTA REGION BY  
GEOGRAPHIC REGION OF BIRTH, FEMALES 1960-1970

Region of Birth (1)	Females enumerated in Volta Region in 1960 (2)	Females 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	1,669	1,389	2,027	+ 638
Greater Accra	2,090	1,909	2,089	+ 180
Eastern	6,935	6,023	8,366	+ 2,343
Volta	344,593	310,272	276,381	– 33,891
Ashanti	1,598	1,422	2,072	+ 650
Brong-Ahafo	361	286	586	+ 300
Northern	7,339	6,223	9,069	+ 2,846
Total	364,585	327,524	300,590	– 26,934

TABLE 4.8e. – ESTIMATED NET MIGRATION TO ASHANTI REGION  
BY GEOGRAPHIC REGION OF BIRTH, FEMALES 1960-1970

Region of Birth (1)	Females enumerated in Ashanti Region in 1960 (2)	Females 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	24,124	20,074	24,854	+ 4,780
Greater Accra	3,977	3,632	3,689	+ 57
Eastern	23,166	20,120	23,682	+ 3,562
Volta	7,360	6,627	9,155	+ 2,528
Ashanti	420,965	374,575	352,822	– 21,753
Brong-Ahafo	8,013	6,353	11,066	+ 4,713
Northern	22,793	19,326	29,212	+ 9,884
Total	510,398	450,709	454,480	+ 3,771

TABLE 4.8f. – ESTIMATED NET MIGRATION TO BRONG-AHAFO REGION BY  
GEOGRAPHIC REGION OF BIRTH, FEMALES 1960-1970

Region of Birth (1)	Females enumerated in Brong-Ahafo Region in 1960 (2)	Females 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	4,393	3,655	4,877	+ 1,222
Greater Accra	1,490	1,361	1,383	+ 22
Eastern	5,597	4,861	6,964	+ 2,103
Volta	3,142	2,829	5,537	+ 2,708
Ashanti	18,755	16,688	20,001	+ 3,313
Brong-Ahafo	215,974	171,224	160,291	– 10,933
Northern	12,202	10,193	20,561	+ 10,368
Total	261,553	210,811	219,614	+ 8,803

TABLE 4.8g. – ESTIMATED NET MIGRATION TO NORTHERN REGION  
BY GEOGRAPHIC REGION OF BIRTH, FEMALES 1960-1970

Region of Birth (1)	Females enumerated in Northern Region in 1960 (2)	Females 10 years old and over in 1970		Net change due to migration 1960-1970 (5)
		Expected (3)	Enumerated (4)	
Western	1,954	1,626	2,997	+ 1,371
Greater Accra	1,366	1,247	1,514	+ 267
Eastern	1,770	1,537	2,891	+ 1,354
Volta	3,704	3,335	5,708	+ 2,373
Ashanti	4,058	3,611	5,559	+ 1,948
Brong-Ahafo	1,238	981	2,443	+ 1,462
Northern	603,628	511,877	484,982	– 26,895
Total	617,718	524,214	506,094	– 18,120

regions which gained population through migration. This is clearly understandable since, as already stated, migration in Ghana tends to be of the labour type and Greater Accra with its concentration of government ministries and industrial establishments tends to attract large population. The Ashanti region and Brong-Ahafo also, due to the cocoa farms, tend to attract migrant farm workers. Tables 4.9(a-g) and 4.10(a-g) show the migrants by broad age groups and tend to confirm the view that the age group 15-24 is the most critical for migration.

Urbanisation. In the preceding section, we referred to the four types of internal migratory movements. Data from the 1960 Post-enumeration Survey (Census Office 1971) show that if we consider only migrants who had stayed for more than five years in their places of enumeration, the following numbers and rates are obtained. The rates which are given in parenthesis have as denominators the base population, i.e. the rural to urban rates will be calculated as a proportion of the urban population. The following is the relevant information :

Rural to rural : (22.9 %)  
 Rural to urban : (15.0 %)  
 Urban to urban : (8.9 %)  
 Urban to rural : (3.3 %)

In Ghana, any locality with population of 5,000 or more is described as a town or an urban centre. In 1948, 12.3 per cent of Ghana's population lived in urban settlements. As shown in Table 4.11, by 1960 this population had reached 23.1 and by 1970, 28.9 per cent. This rapid rate of urbanisation is common not

TABLE 4.9a. – NET CHANGES DUE TO THE MIGRATION OF GHANAIAI MALES  
BY AGE AND REGION OF BIRTH, FOR WESTERN REGION, 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	– 6,135	614	2,005	609	2,048	599	241	– 19
15-24	– 15,071	520	3,613	1,557	4,904	1,258	3,967	748
25-34	– 5,031	– 51	2,449	1,526	2,480	982	1,103	3,458
35-64	– 8,762	– 154	1,347	512	2,163	952	– 2,720	– 6,662
65 <sup>+</sup>	– 290	– 47	121	– 148	112	97	– 214	– 369
10 <sup>+</sup>	– 35,289	882	9,535	4,056	11,707	3,888	2,377	– 2,844

TABLE 4.9b. – NET CHANGES DUE TO THE MIGRATION OF GHANAIAI MALES BY  
AGE AND REGION OF BIRTH, FOR GREATER ACCRA, 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	2,585	– 2,313	2,422	1,327	1,220	226	324	5,792
15-24	9,593	– 965	14,318	8,343	5,052	800	3,417	40,558
25-34	8,150	– 2,051	9,938	8,210	4,329	897	2,591	32,063
35-64	1,964	660	2,594	2,505	923	214	– 57	8,803
65 <sup>+</sup>	– 37	– 6	78	114	36	8	– 31	162
10 <sup>+</sup>	22,255	4,675	29,350	20,499	11,560	2,145	6,244	87,378

TABLE 4.9c. – NET CHANGES DUE TO THE MIGRATION OF GHANAIAI MALES BY  
AGE AND REGION OF BIRTH, FOR EASTERN REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	929	775	– 7,222	1,654	867	277	116	– 2,604
15-24	1,261	261	– 21,446	2,980	2,061	508	1,328	– 13,047
25-34	734	– 241	– 15,482	1,647	238	230	109	– 12,765
35-64	– 292	– 193	– 4,986	762	– 255	154	– 2,407	7,217
65 <sup>+</sup>	116	22	– 339	54	– 106	31	– 198	– 420
10 <sup>+</sup>	2,748	624	– 49,475	7,097	2,805	1,200	– 1,052	– 36,053

TABLE 4.9d. – NET CHANGES DUE TO THE MIGRATION OF GHANAIAI MALES BY AGE AND REGION OF BIRTH, FOR VOLTA REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	262	283	749	- 5,493	299	115	462	- 3,329
15-24	242	- 29	628	- 16,321	172	77	775	- 14,456
25-34	200	- 11	590	- 14,933	266	133	321	- 13,434
35-64	81	- 63	488	- 1,965	94	69	415	- 881
65 <sup>+</sup>	5	- 19	1	- 2,499	- 11	7	200	- 2,316
10 <sup>+</sup>	790	161	2,456	- 41,211	820	401	2,173	- 34,410

TABLE 4.9e. – NET CHANGES DUE TO THE MIGRATION OF GHANAIAI MALES BY AGE AND REGION OF BIRTH, FOR ASHANTI REGION, 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	1,249	269	1,197	597	- 6,217	1,038	1,243	- 624
15-24	2,932	165	1,742	1,427	- 14,359	2,300	10,814	5,021
25-34	1,570	119	800	1,213	- 9,546	914	2,384	- 2,546
35-64	- 443	- 171	172	368	- 2,807	728	- 2,320	- 4,473
65 <sup>+</sup>	162	12	52	100	- 204	91	150	363
10 <sup>+</sup>	5,470	394	3,963	3,705	- 33,133	5,071	12,271	- 2,259

TABLE 4.9f. – NET CHANGES DUE TO THE MIGRATION OF GHANAIAI MALES BY AGE AND REGION OF BIRTH, FOR BRONG-AHAFO REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	436	83	433	605	847	- 2,647	1,310	1,067
15-24	439	- 42	595	958	1,503	- 5,575	8,349	6,227
25-34	752	66	1,074	717	1,476	- 3,555	4,316	4,846
35-64	99	- 17	281	906	- 22	- 2,381	1,777	643
65 <sup>+</sup>	43	35	82	145	149	- 275	481	660
10 <sup>+</sup>	1,769	125	2,465	3,331	3,953	- 14,433	16,233	13,443



TABLE 4.9g. — NET CHANGES DUE TO THE MIGRATION OF GHANAIA MALES BY AGE AND REGION OF BIRTH, FOR NORTHERN REGION, 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	614	292	424	708	938	392	- 3,688	- 320
15-24	607	91	561	1,056	680	575	- 28,641	- 25,071
25-34	592	170	548	1,121	499	300	- 16,197	- 12,977
35-64	- 225	- 59	104	180	- 47	244	- 5,746	- 5,549
65+	4	4	6	76	25	43	- 601	- 443
10+	1,592	498	1,633	3,141	2,095	1,554	- 54,873	- 44,360

TABLE 4.10a. — NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALES BY AGE AND REGION OF BIRTH, FOR WESTERN REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	- 2,807	465	1,787	839	1,915	520	416	3,135
15-24	- 10,988	46	2,393	1,250	2,226	785	1,714	- 2,574
25-34	- 5,458	- 153	1,673	912	1,338	651	- 1,003	- 2,040
35-64	- 1,380	- 457	355	- 146	786	318	- 823	- 1,347
65+	- 184	- 25	35	15	82	32	- 103	- 148
10+	- 20,817	- 124	6,243	2,870	6,347	2,306	201	- 2,974

TABLE 4.10b. — NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALES BY AGE AND REGION OF BIRTH, FOR GREATER ACCRA 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	5,496	- 1,862	5,577	3,181	2,092	351	573	15,408
15-24	8,053	40	12,980	7,880	3,520	603	1,884	34,960
25-34	4,303	538	6,245	4,550	1,543	261	97	17,537
35-64	1,770	1,789	2,308	1,661	446	71	- 67	7,978
65+	63	123	137	131	36	0	- 3,793	- 3,303
10+	19,685	628	27,247	17,403	7,637	1,286	- 1,306	72,580

TABLE 4.10c. – NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALE  
BY AGE AND REGION OF BIRTH, FOR EASTERN REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	1,474	529	- 56,380	1,700	1,090	355	230	- 51,002
15-24	346	- 120	- 19,034	2,179	624	274	661	- 15,070
25-34	82	- 360	- 9,883	1,028	21	113	556	- 8,443
35-64	- 355	- 853	- 3,024	- 18	37	87	- 677	- 4,803
65 <sup>+</sup>	59	100	- 171	122	52	85	- 122	125
10 <sup>+</sup>	1,606	- 704	- 88,492	5,011	1,824	914	648	- 79,193

TABLE 4.10d. – NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALE  
BY AGE AND REGION OF BIRTH, FOR VOLTA REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	355	253	719	- 7,265	240	138	495	- 5,065
15-24	140	- 6	596	- 14,603	234	79	878	- 12,682
25-34	112	18	609	- 8,527	149	80	123	- 7,436
35-64	10	- 107	356	- 2,541	- 2	11	678	- 1,595
65 <sup>+</sup>	10	- 10	0	- 366	13	- 10	194	- 169
10 <sup>+</sup>	627	148	2,280	- 33,302	634	298	2,368	- 26,947

TABLE 4.10e. – NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALE  
BY AGE AND REGION OF BIRTH, FOR ASHANTI REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	2,560	351	1,508	635	- 6,969	1,658	1,391	1,134
15-24	1,736	8	1,683	1,212	- 8,251	1,722	7,404	5,514
25-34	284	137	354	555	- 5,496	618	- 1,052	- 4,600
35-64	- 54	- 210	- 223	- 113	- 1,414	520	- 319	- 1,813
65 <sup>+</sup>	32	13	- 8	34	3,880	80	37	4,068
10 <sup>+</sup>	4,558	299	3,314	2,323	- 18,250	4,598	7,461	4,303

TABLE 4.10f. – NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALE BY AGE AND REGION OF BIRTH, FOR BRONG-AHAFO REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	535	73	403	444	897	– 3,346	998	4
15-24	297	– 6	771	979	854	– 4,045	6,016	4,866
25-34	373	42	695	860	1,104	– 2,094	1,244	2,224
35-64	– 23	– 103	159	334	224	– 1,129	794	256
65+	18	2	14	34	149	– 140	172	249
10+	1,200	8	2,042	2,651	3,228	– 10,754	9,224	7,599

TABLE 4.10g. – NET CHANGES DUE TO THE MIGRATION OF GHANAIA FEMALE BY AGE AND REGION OF BIRTH, FOR NORTHERN REGION 1960-1970

Age in 1970	Region of Birth							
	Western	Greater Accra	Eastern	Volta	Ashanti	Brong Ahafo	Northern	Net Balance
10-14	596	192	316	482	745	328	– 4,081	– 1,422
15-24	413	40	551	1,104	800	589	– 8,555	– 5,058
25-34	309	54	310	628	386	370	1,211	3,268
35-64	32	– 56	83	84	– 67	128	333	537
65+	3	– 2	– 5	37	15	33	– 147	– 66
10+	1,353	228	1,255	2,335	1,879	1,448	– 11,239	– 2,741

only to Ghana, but to most of the countries in Africa at the present time. The rate of growth of the urban population implied in Table 4.11 is 4.8 per cent per annum. It should, however, be mentioned that this rate also takes into account localities which in 1960 were not urban centres but which by 1970 had become towns. Thus in 1948 there were only 39 urban centres, by 1960 the figure had reached 98 and by 1970 the figure was 135. Some places which were towns in 1948 had ceased to be urban centres in 1960 and similarly a few towns in 1960 had ceased to be urban settlements in 1970 owing to decreases in their populations. In spite of these limitations, it is safe to conclude that the rapid increase in the population of urban centres was due, to a considerable extent, to rural-urban migration. The rate of 4.8 per cent per annum is an unadjusted rate. When it is adjusted for probable under-enumeration in 1970, the rate is likely to be around 5.8 per cent per annum which is a very high rate indeed.

Rural/urban differentials with respect to the demographic variables of sex and age have already been discussed in the preceding chapters. It is also

well known that in most African countries there are marked disparities in respect of social amenities between rural localities and towns. For example, there is a wide gap between urban and rural areas with respect to the level of educational facilities. Various theories have been put forward to explain the reasons why there is a continuous drift from the rural areas to the urban centres. In this monograph we shall not discuss all the theories but only mention that the social and economic conditions prevailing in the rural areas act as push factors, while the perception of their economic opportunities at the place of destination by the prospective migrants act as pull factors. The Ghana Government, like other governments in Africa, has tried various schemes to stem the flow of migrants from rural areas to urban centres. So far none of the schemes tried out has made an appreciable impact on size and direction of migration from rural areas to urban centres.

TABLE 4.11. – TOTAL AND URBAN POPULATION BY REGION, 1960 and 1970

Region	Total Population		Urban Population		% of Total	
	1960	1970	1960	1970	1960	1970
All regions	6,726,815	8,559,313	1,551,174	2,472,456	23.1	28.9
Western	626,155	770,087	154,612	207,343	24.7	26.9
Central	751,392	890,135	210,411	258,636	28.0	29.1
Greater Accra	491,817	851,614	393,383	726,553	80.0	85.3
Eastern	1,094,196	1,261,661	220,765	310,073	20.2	24.6
Volta	777,285	947,268	102,101	151,096	13.1	16.0
Ashanti	1,109,133	1,481,698	276,772	440,526	25.0	29.7
Brong-Ahafo	587,920	766,509	91,491	169,072	15.6	22.1
Northern	531,573	727,618	69,063	148,320	13.0	20.4
Upper	757,344	862,723	32,576	60,837	4.3	7.1

## CHAPTER V

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# THE LABOUR FORCE

**Introduction.** The labour force of a country is made up of the employed and unemployed population. In Ghana, only those aged 15 years and over who worked for pay or profit, or who had jobs but did not work, during the specified reference period are classified as employed.<sup>(1)</sup> The other component of the labour force, the unemployed, is made up of all those who were not employed during the reference period but who, during the three months preceding the reference night, were actively seeking a job. A discouraged worker, that is, a person who was not actively looking for a job because he had despaired of finding any, is also included among the unemployed population.

In line with the concepts used in the 1960 and 1970 Population Census of Ghana, this definition of the labour force restricts this category to only those aged 15 years and over. It is well known that in some countries, like Peru, persons aged 6-9 years can be considered as part of the labour force. For example, Peru, in 1961, recorded 0.5 per cent of its male urban population aged 6-9 years to be in the labour force while the corresponding figure for the rural area was 0.6 per cent. Corresponding figures for the age-group 10-14 years were 5.2 per cent and 7.4 per cent respectively. In Ghana, the 1970 Population Census shows that of those aged 10-14 years, those stated to be in the labour force was, for both sexes, 11.5 per cent (12.1 for males, and 10.8 for females). Information on those aged less than 10 years who were in the labour force is not available since the questions on economic activity were restricted, in the 1970 census, to persons aged 10 years and over. Most of the tabulations, however, are for 15 years and over, the age when a person is deemed to have qualified for entry into the labour force. The choice of 15 years as the starting age for entry into the labour force is due primarily to the fact that there are specific laws prohibiting the employment of children in certain sectors of industry, excluding agriculture.

The Labour Decree of 1967 (NLC Decree No. 157) makes it quite clear that it was the purpose of government legislation that no person below the age of 15 years should be employed in any part of the modern sector of the

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(1) Vol. IV of 1970 Population Census Report Economic Characteristics. Unpublished.

economy. Section 44 of this decree states that "no person shall employ a child except where the employment is with the child's own family and involves light work of an agricultural or domestic character only". Section 45 of the same decree states "No employer shall employ a young person (a) in any industrial undertaking on night work, or (b) in any mine or underground work". In this context, a child is defined as "any person under the apparent age of 15 years" and a young person as a "person under the apparent age of 18 years". The Act also made it illegal for any person "who, in the opinion of the Chief Labour Officer or a Labour Officer, is under the age of 16 years" to enter a contract for employment as a clerk.

This Act merely updated the provision of earlier laws passed since Ghana became independent in 1957. The fact that the provisions of the 1967 Decree were not extended to the agricultural sector or to domestic services was due mainly to the fact that such an act was hardly enforceable in the two sectors. But it is quite clear that the general purpose of this piece of government legislation was to ensure that children aged — 6-14 years attend school.

This view is reinforced by the Education Act (No 871 of 1961). Section 2 of this Act states :

"(1) Every child who has attained the school-going age determined by the Minister shall attend a course of instruction as laid down by the Minister in a school recognised for that purpose by the Minister.

(2) Any parent who fails to comply with the provisions of the preceding subsection commits an offence and shall be liable to summary conviction, to a fine not exceeding ten pounds and in the case of a continuing offence, to a fine not exceeding two pounds in respect of each and every day during which the offence continues".

The school-going age group was subsequently determined to be 6-14 years. Thus, it could be assumed that it was the Ghana Government's intention that all persons aged 6 to 14 years should be attending some approved form of school. The government backed up this Act with firm action, resulting in the following enrolment figures for public primary schools, class 1, for the period just before the passing of the Act to the period just after the Act became operative: (Ghana: Education Statistics 1968/69)

Year	Enrolment in Class 1		
	Total	Boys	Girls
1960-61	106,928	63,487	43,441
1961-62	231,784	131,659	100,125
1962-63	264,560	145,976	118,584
1963-64	253,693	138,130	115,563
1964-65	274,500	146,328	128,172

Due to the high cost of financing the universal primary education scheme, the Education Act was "suspended" after the Military Coup of 1966. This led to a gradual decline in enrolment figures for Primary Class 1 which by the 1968/9 school year had declined to 189,263 (107,748 boys, 81,515 girls). The temporary suspension of the Act was a move by the Ghana Government to conform to the exigencies of the time and should not be construed as a total abandonment of its social goal. Recently, however, there has been a petition from the chiefs in the Upper Region asking the Government to enforce the provisions of the 1961 Act. Thus, the conclusion which one could draw from the original Act and the discussions which followed its suspension is that persons between the ages of 6-14 years should attend school. This is why, in both the 1960 and 1970 Population Census, persons in that age group were excluded from the labour force.

In this chapter, a description of the demographic, social and economic characteristics of the labour force is given. The age-sex structure, the size and growth of the labour force, with appropriate measures of its relative size, are considered. In addition, some social characteristics of the economically-active population, such as education, and the occupational and industrial structure of the labour force in 1970 are studied. Some comparisons are made with relevant data obtained in the 1960 Population Census.

**Size and Growth of the Labour Force.** As disclosed by the 1970 Population Census, Ghana had a labour force of 3,331,618 in 1970 (1,859,395 males and 1,472,223 females). These figures discount all persons aged less than 15 years who were either working or actively seeking work. The corresponding figures for 1960 were (1,677,058 males and 1,045,968 females). This implies that Ghana's labour force increased by 22.35 per cent as against the 27.24 per cent increase recorded by the total population. Thus, it is significant to note that Ghana's labour force grew at a slightly slower rate than the total population. The recorded rate of growth of the total population is 2.4 per cent per annum. However, if this rate of growth is adjusted for possible over-enumeration in 1960, estimated to be between 0.6 and 2.5 per cent, (Gil and de Graft-Johnson, 1964) and probable under-enumeration in 1970, the average growth rate will be much higher. The growth of the total population is now estimated at 2.9 per cent. Thus, the adjusted rate of the labour force will be around 2.5 per cent per annum. This is a high rate of growth and has implications for employment, unemployment and under-employment which will be considered in the last chapter of this monograph.

It is necessary to stress, however, that although a high population growth rate need not necessarily lead to a high labour force growth rate, it usually does. The explanation for this can be found by examining the breakdown of the economically inactive population for the 1970 Census. As shown in

Table 5.1, homemakers account for 625,430 (or 13.8 per cent) out of the total population aged 15 years or more of 4,543,348. Students account for 8.6 per cent. Thus, theoretically, an increase in the population aged 15 years and over could be absorbed into the economically-inactive population if, for example, the upper age limit for compulsory education is raised by legislation. In practical terms, however, the general effect of rapid population increase has been also to generate a faster rate of growth of the labour force.

TABLE 5.1. — ECONOMICALLY-INACTIVE POPULATION OF GHANA (1970)  
BY SEX AND MAJOR CATEGORY OF INACTIVITY

Type of inactivity	Numbers			Per cent		
	Total	Male	Female	Total	Male	Female
All types of inactivity	1,211,670	367,605	844,065	100.0	100.0	100.0
Homemakers	625,430	21,512	603,918	51.6	5.9	71.5
Students	392,006	264,997	127,009	32.3	72.1	15.0
Vocational trainees	4,590	1,584	3,006	0.4	0.4	0.4
Disabled (incl. the aged)	166,250	61,984	104,266	13.7	16.9	12.4
Living on income	8,108	6,437	1,671	0.7	1.7	0.2
Voluntarily unemployed	9,134	4,977	4,157	0.8	1.3	0.5
Others	6,152	6,114	38	0.5	1.7	0.0

Sex-age Structure of the Labour Force. Table 5.2 shows the sex-age structure of the labour force. As is to be expected, all the age-specific sex ratios exceed 100. This is a natural phenomenon since traditionally males have been the bread-winners. What is, however, striking is that the sex-ratios all lie within the range 109.4 to 235.9, suggesting a rather high female participation in the labour force.

The age distribution of the labour force is the usual pattern expected in countries which have reached the stage of development of Ghana. Since education has an inhibiting effect on participation rates and since the age-group 15-19 years covers middle, secondary, commercial and technical school attendants, the relative number of persons of either sex in this age-group who are in the labour force is small. Of some significance is the surprisingly large number of persons in the labour force in the age-group 65 and over. A number of reasons account for this, the main one being the need for persons in this age group to receive an



income on which to live. Although a social security scheme was introduced in Ghana about ten years ago, the scheme does not cover self-employed persons and agricultural workers. Thus, for this category of workers, there is no insurance against old age except in the traditional family system. The more this system proves incapable of ensuring an adequate source of income for the aged, the more many of them will continue to work, even when they are past the age when one would not normally expect them to do so. It should, however, be mentioned that of the number stated to be aged 85 years and over and still in the labour force, some of them may have had wrong ages recorded for them. The question of age mis-statements in censuses in Africa is a well-known problem and needs no further elaboration in this section.

TABLE 5.2. – LABOUR FORCE BY SEX AND AGE (ABSOLUTE NUMBERS AND PERCENTAGES) AND SEX-RATIOS

Age (1)	Absolute numbers			Percentage			Sex ratio
	Total (2)	Male (3)	Female (4)	Total (5)	Male (6)	Female (7)	
Total	3,331,618	1,859,395	1,472,223	100.0	100.0	100	126.3
15-19	317,554	168,829	148,725	9.5	9.1	10.1	113.5
20-24	483,057	252,416	230,641	14.5	13.6	15.6	109.4
25-29	498,838	276,983	221,855	15.1	15.0	15.1	124.8
30-34	469,261	257,051	212,210	14.1	13.8	14.4	121.1
35-39	377,161	216,902	160,259	11.3	11.7	10.9	135.3
40-44	307,438	170,629	136,809	9.2	9.2	9.3	124.7
45-49	240,251	140,440	99,811	7.2	7.6	6.8	140.7
50-54	203,902	115,559	88,343	6.1	6.2	6.0	130.8
55-59	122,658	72,824	49,834	3.7	3.9	3.4	146.1
60-64	119,507	68,985	50,522	3.6	3.7	3.4	136.5
65-69	70,320	41,243	29,077	2.1	2.2	2.0	141.8
70-74	56,308	34,255	22,053	1.7	1.8	1.5	155.3
75-79	25,387	16,276	9,111	0.7	0.8	0.6	178.6
80-84	20,813	13,545	7,268	0.6	0.7	0.5	186.4
85 and over	19,163	13,458	5,705	0.6	0.7	0.4	235.9

The relationship between the age structure of the labour force and that of the total population aged 15 years or more is brought out more clearly in Table 5.3 which shows the labour force participation rates for each specified age group. This table is examined more closely in section 5.6 below.

**Crude Activity Rates.** Several measures of the absolute and relative size of the labour force are generally applied to describe certain aspects of the demographic dimension of the labour force. In the preceding paragraph, the absolute size of the labour force was discussed. In what follows,

the discussion will focus mainly on four measures of the labour force — the crude activity rate, the refined activity rate, the age-specific activity rate and the age-standardised activity rate.

The crude activity rate is defined as the percentage of the population classified in the census as being in the labour force. In the U.N. Manual on Methods of Analysing Census Data on Economic Activities of the Population (U.N. 1968), it is stated that “the crude activity rate has an obvious economic significance : the higher this rate, the higher is the level of income per head that can be achieved under given conditions of productivity and extent of employment of the labour force”. But the Manual goes on to add that “the apparent advantage of a high crude activity rate is partly illusory if it is achieved by many women being engaged in paid employment instead of unpaid work in the home”, that is, the crude activity rate ignores the fact that homemakers are also producers of goods and services.

Whatever its advantages or disadvantages as a measure of the well-being of a nation, the crude activity rate is one of the accepted measures of the relative size of the labour force. Table 5.3 shows the crude activity rates for 1960 and 1970 by regions.(1) It shows that for the total country and for both sexes together, the crude activity rate decreased from 40.5 in 1960 to 38.9 in 1970. This decline is due to the fact that the rate of increase of the labour force lagged behind that of the total population. As explained above, the rate of increase of the labour force is about 86 per cent of that of the total population. Thus, if present trends continue, the crude activity rate for both sexes will continue to decline in the future.

It is relevant to mention that the reduction in the crude activity rate is accounted for mainly by a substantial reduction in the male crude activity rate, from 49.3 in 1960 to 43.8 in 1970. The female crude activity rate, however, showed a slight increase from 31.4 per cent to 34.1 reflecting the fact that more women are leaving their unpaid jobs in the home for paid jobs outside.

There is an interesting feature of the crude activity rates for 1960 and 1970, which is worth noting. While in 1960 the female crude activity rate was substantially lower than the male crude activity rate in all regions, in 1970, two regions, the Central and Volta Regions, recorded female crude activity rates higher than the male crude activity rates. The relevant figures are :

	Male	Female
Central	40.2	43.0
Volta	39.5	40.1

(1) Table 3 is reproduced from de Graft-Johnson, K.T. Ewusi, K. Appiah, R.: The Determinants of Labour force Participation rates in Ghana. An unpublished study.

TABLE 5.3. - TOTAL POPULATION, POPULATION AGED 15 YEARS AND OVER, LABOUR FORCE,  
CRUDE AND REFINED ACTIVITY RATES BY SEX AND REGIONS, 1960 AND 1970

Regions	Sex	Total Population		Total Aged 15 years		Labour Force		Crude Activity Rate		Refined Activity Rate	
		1970	1960	1970	1960	1970	1960	1970	1960	1970	1960
All Regions	T	8,559,313	6,726,815	4,543,348	3,730,309	3,331,618	2,723,026	38.9	40.5	73.3	73.0
	M	4,247,809	3,400,270	2,227,000	1,884,552	1,859,395	1,677,058	43.8	49.3	83.5	89.0
	F	4,311,504	3,326,545	2,316,348	1,845,757	1,472,223	1,045,968	34.1	31.4	63.6	56.7
Western Region	T	770,087	636,155	419,427	363,605	331,123	285,909	43.0	44.9	78.9	78.6
	M	393,902	338,248	219,494	197,413	187,646	179,478	47.6	53.1	85.5	90.9
	F	376,185	297,907	199,933	166,192	143,477	106,431	38.1	35.7	71.8	64.0
Central Region	T	890,135	741,392	466,214	401,723	370,638	324,318	41.6	43.7	79.5	80.7
	M	430,720	356,040	215,618	188,736	172,984	164,137	40.2	46.1	80.2	87.0
	F	459,415	385,352	250,596	212,987	197,654	160,181	43.0	41.6	78.9	75.2
Greater Accra Region	T	851,614	491,817	494,360	298,290	366,488	225,285	43.0	45.8	74.1	75.5
	M	437,790	261,547	267,163	167,813	225,642	144,654	51.5	55.3	84.5	86.2
	F	413,824	230,270	227,197	130,396	140,846	80,631	34.0	35.0	62.0	61.8
Eastern Region	T	1,261,661	1,094,196	658,579	598,037	502,180	469,483	39.8	42.9	76.3	78.5
	M	624,258	552,448	321,357	301,960	258,625	266,474	41.4	48.2	80.5	88.2
	F	637,403	541,748	337,222	294,077	243,555	203,009	38.2	37.5	72.2	69.0
Volta Region	T	947,268	777,285	496,455	422,537	367,907	322,442	38.8	41.5	74.1	76.3
	M	455,095	379,093	229,252	200,696	179,773	170,936	39.5	45.1	78.4	85.2
	F	492,173	398,192	267,203	221,841	197,134	151,506	40.1	38.0	73.8	68.3
Ashanti Region	T	1,481,698	1,109,133	752,537	597,496	584,367	475,964	39.4	42.9	77.7	79.9
	M	737,570	567,958	376,449	311,297	314,552	281,646	42.6	49.6	83.6	90.5
	F	744,128	541,175	376,091	284,199	269,815	194,318	36.3	35.9	71.7	68.4
Brong-Ahafo Region	T	766,509	587,920	393,551	316,871	314,138	232,123	41.0	39.5	79.8	73.3
	M	391,757	309,544	205,104	172,906	176,710	159,496	45.1	51.5	86.2	92.2
	F	374,752	278,376	188,447	143,965	137,428	72,627	36.7	26.1	72.9	50.4
Northern Region	T	727,618	531,573	384,613	293,942	226,126	156,441	31.1	29.4	58.8	53.2
	M	367,533	270,964	187,059	146,287	166,337	132,976	45.3	49.1	88.9	90.9
	F	360,085	260,609	197,554	147,655	59,789	23,465	16.6	9.0	30.3	15.9
Upper Region	T	862,723	757,344	477,612	441,889	259,651	231,065	30.1	30.5	54.4	52.3
	M	409,184	364,428	205,507	197,444	177,126	177,261	43.3	48.6	86.2	89.8
	F	453,539	392,916	272,105	244,445	82,525	53,804	18.2	13.7	30.3	22.0

In both regions, the sex ratio for the total population was less than 100. The unusual feature of female crude activity rates being greater than those for males could be explained by an excess of males over females in age group 0-14 years. The relevant figures are for Central region, 215,102 males as against 208,811 and for Volta Region 225,843 males as against 224,970 females in age groups 0-14.

**Refined Activity Rate.** The second measure of the relative size of the labour force is the refined activity rate which is defined as the proportion of the potential labour force which is actually in the labour force. This definition, in terms of Ghana's definitions and concepts, becomes: the proportion of persons aged 15 years and over who are either employed (i.e. worked or had job but did not work, during the reference period) or unemployed (i.e. did not work and had no job but were actively seeking for one or did not try to find a job because they had despaired of finding any). The refined activity rate is usually preferred to the crude activity rate because it is a "true rate" and is usually "free from the distortion produced by the presence, in varying proportions, in the population of children too young to be classified as economically active". (U.N. 1960 and 1968) This is clearly illustrated in the examples of Central and Volta Regions described above. The refined activity rate for Ghana as a whole was, in 1970, 73.3 per cent for both sexes (83.5 for males and 63.6 for females). This figure shows a slight increase over the 1960 proportion of 73.0 for both sexes but for the adult males, the 1960 figure was higher (89.0) while the female figure was significantly lower (56.7). The tendency for housewives to seek paid jobs out of the home is a phenomenon which usually accompanies development. Thus the trend observed in the increase of the proportion of women in the labour force between 1960 and 1970 conforms to this pattern.

In what follows, we will mention briefly certain features of the refined activity rates by regions which are of interest. The refined activity rates for females are high, except in the Northern and Upper Regions. In the Northern Region, the refined activity rates increased from 15.9 to 30.3, both rates being less than half of the national average for the two Census years. For the Upper Region also, the rate increased from as low as 22.0 to a relatively low figure of 30.3. There have been suggestions that the relatively low rates recorded for the Northern and Upper Regions may be due to the fact that both the 1960 and 1970 censuses were conducted in March, which is the off-season for farmers in the Northern. Thus, housewives who are also farmers or farm workers during the farming season were classified as homemakers since this was the principal economic activity during the four weeks preceding Census Night. But this view is only partly supported by the results of the 1960 Post-enumeration Sample Survey (Census office 1964) which was held two and half months after the 1960

Census, between June and July, 1960. The Report on this survey showed that for the present Northern and Upper Regions combined, the female refined activity rate was 32.7 as compared to the 1960 Census figure of 19.7. Although the change in enumeration period led to the refined activity rate nearly doubling itself, the rate, however, remained low in comparison with the rates for the other regions of Ghana. This leads us to conclude that female participation in the labour force is, up to date, relatively low in the Northern and Upper Regions.

**Age-specific Activity Rates.** The next measure to consider is the age-specific activity rate. The age-specific activity rate, by measuring the proportion of the potential labour force in each age-group which is actually in the labour force, makes it possible for a more detailed demographic analysis of the labour force. Tables 5.4 (a) and 5.4 (b) show the age-specific activity rates by sex and region for 1970. Corresponding rates for 1960 for the quinquennial groups 15-19 years up to 60-64 and 65 years and over can be computed from Table 1 of Vol IV of the 1960 Census Report. From these computations it is noted that for both sexes in 1960, the labour force participation rates reached their peak in the age group 50-54. For males, the peak was reached much earlier in age group 35-39, while for females the peak was reached later in the group 55-59. There are slight regional variations. There are sociological factors which tend to explain these phenomena. Women complete their reproductive cycle by age 49. By 50-54 years of age, therefore, they are ready for the labour market, since they would no longer be detained in their homes through either child-bearing or child-caring. Another factor accounting for the peak in activity rates for women at age 50-54 is the marital status of women. The 1960 PES for Ghana showed that of every 100 women above the age of 15, 8.5 were never married, 75.1 were married, 7.2 per cent were divorced and 9.2 widowed. The results also show that there is a steep rise in proportion of widows and divorcees from age groups 45-49 to age group 50-54. For age group 45-49, widows constitute 15.2 per cent of the population and divorcees 11.9, resulting in a combined total of 27.1 for both widows and divorcees. For age group 50-54, the combined total is 37.9 per cent (23.0 per cent for widows and 14.9 per cent for the divorced). It would seem, therefore, that there is some justification in assuming that when women become divorced or widowed, there is a tendency for those of them who were housewives to join the labour market and that this occurs more in age-group 50-54 than in the preceding age-groups.

The 1970 data vary slightly from the 1960 pattern. The peak for both sexes is reached in age-group 45-49, for males in age group 35-39 and for females 50-54. Thus the trend from 1960 to 1970 seems to suggest that the rate is peaking out in each case much earlier in 1970 than in 1960 and this peaking out is occurring in the preceding quinquennial age-group. It should, however, be

pointed out that the corresponding rate for age-group 50-54 for both sexes is 88.1. Since there is considerable age mis-statement in censuses and surveys in Africa, too much emphasis cannot be placed on the difference between the two rates of 88.3 and 88.1. The difference in the age-group in which the peak occurs in 1960 and 1970 could very well be due to erroneous reporting of age and not to any economic or social factors.

For the 1970 data, the lowest participation rate among males of 42.3 per cent occurs in the age group 15-19 where school attendance usually exercises an inhibiting effect on labour force participation rates. The corresponding figures for urban and rural areas are 36.7 and 44.9. The next lowest participation rate occurs in age-group 85 and over, where the rate of 51.1 (urban 39.7 and rural 53.2) can be regarded as rather high. The absence of old age insurance and other superannuation schemes among large sections of the labour force and age mis-reporting may account for these relatively high rates.

For the female population, the lowest activity rates occur among age groups 85 and over and 80-84, (the figures for the former being 21.9 (urban 16.8 and rural 23.5) and for the latter, 35.5 (urban 28.0 and rural 37.7). The age-group (15-19) is the third in the ranking from the lowest to the highest: 39.2 (urban 35.8 and rural 41.0).

The slight difference in the ranking of males and females could be attributed mainly to the fact that the men who survive to an old age usually retain their position as head of household and are, of necessity, forced to engage in some form of economic activity even though their efforts and the returns from this activity may be minimal.

It is also worth noting that the assumption usually made by social scientists that nearly all males in the age group 25-54 are in the labour force is supported by the data in Table 5.4 (a), the activity rate for this age-group being in excess of 95.5.

**Age-Standardised Activity Rates.** Table 6 of de Graft-Johnson *et al.* shows the age-standardised activity rates for males and females separately. They represent the weighted averages of the relevant age-specific activity rates, using as weights the proportionate shares in the total population age 15 years and over of the specified age-groups. This is the so-called "Direct" standardisation Method. (Shryock *et al.* 1971). It has been observed that "differences between age-standardised and unstandardised (crude or refined) activity rates represent the effects of variations of population age-composition, subject to reservations as regards the interdependence and interaction of factors". [U.N. 1968].

In that study, [de Graft-Johnson *et al.*] it is observed "that the rural age-standardised activity rate for males, exceeds the urban rate by 3.8 per cent

TABLE 5.4a. — MALE POPULATION (1970) AGED 15 YEARS AND OVER, LABOUR FORCE,  
ACTIVITY RATES BY URBAN/RURAL

Age (in years)	Population			Labour Force			Activity Rates		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1	2	3	4	5	6	7	8	9	10
Total aged	2,227,000	703,156	1,523,844	1,859,395	571,077	1,288,318	83.5	81.2	84.5
15 and over	399,017	125,828	273,189	168,829	46,217	122,612	42.3	36.7	44.9
15-19	305,586	120,362	185,224	252,416	95,634	156,782	82.6	79.5	84.6
20-24	289,945	114,572	175,373	276,983	108,082	168,901	95.5	94.3	96.3
25-29	263,630	92,333	171,297	257,051	89,541	167,510	95.7	97.0	97.8
30-34	221,446	71,367	150,079	216,902	69,650	147,252	97.5	97.6	98.1
35-39	174,420	49,646	124,774	170,629	48,374	122,255	97.8	97.4	98.0
40-44	144,014	38,454	105,560	140,440	37,298	103,142	97.5	97.0	97.7
45-49	119,660	28,603	91,057	115,559	27,291	88,268	96.6	95.4	97.0
50-54	76,473	18,679	57,794	72,824	17,347	55,477	95.2	92.9	96.0
55-59	75,302	15,413	59,889	68,985	13,100	55,885	91.6	85.0	93.3
60-64	47,726	9,464	38,262	41,243	7,406	33,837	86.4	78.4	88.4
65-69	42,004	7,495	34,509	34,255	5,363	28,892	81.6	71.6	83.7
70-74	21,681	3,883	17,798	16,276	2,495	13,781	75.1	64.3	77.4
75-79	19,754	3,000	16,754	13,545	1,670	11,875	68.6	55.7	70.9
80-84	26,342	4,057	22,285	13,458	1,609	11,849	51.1	39.7	53.2

TABLE 5.4b. — FEMALE POPULATION (1970) AGED 15 YEARS AND OVER, LABOUR FORCE, ACTIVITY RATES BY URBAN/RURAL

Age (in years)	Population			Labour Force			Activity Rates		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1	2	3	4	5	6	7	8	9	10
Total aged	2,316,348	665,774	1,650,574	1,472,223	417,485	1,054,738	63.6	62.7	63.9
15-19	379,038	128,335	250,703	148,725	45,886	102,839	39.2	35.8	41.0
20-24	375,545	122,815	252,730	230,641	70,644	155,555	61.4	61.1	61.5
25-29	341,481	105,129	236,352	221,855	70,644	151,211	65.0	67.2	64.0
30-34	296,867	82,541	214,326	212,210	60,655	151,555	71.5	73.5	70.7
35-39	216,855	58,694	158,161	160,259	45,177	115,082	73.9	77.0	72.8
40-44	175,626	43,751	131,875	136,809	35,200	101,609	77.9	80.5	77.0
45-49	128,052	30,572	97,480	99,811	24,778	75,033	77.9	81.0	77.0
50-54	111,777	26,397	85,380	88,343	21,241	67,102	79.0	80.5	78.6
55-59	66,043	16,148	49,895	49,834	12,275	37,559	75.5	76.0	75.3
60-64	71,076	16,043	55,033	50,522	11,158	39,364	71.1	69.6	71.5
65-69	46,492	10,330	36,162	29,077	6,482	22,595	62.5	62.7	62.5
70-74	40,388	9,327	31,061	22,053	4,663	17,390	54.6	50.0	56.0
75-79	20,581	4,830	15,751	9,111	1,879	7,232	44.3	38.9	45.9
80-84	20,501	4,784	15,717	7,268	1,340	5,928	35.5	28.0	37.7
85 and over	26,026	6,078	19,948	5,705	1,021	4,684	21.9	16.8	23.5



while the female urban rate exceeds the rural rate by 0.8 per cent". It may be noted from the same tables that the rural unstandardised activity rate for males aged 15 years and over exceeds the urban rate by 3.3 per cent, thus suggesting that there is an urban-rural differential in the age-composition of the total population which is exerting some influence on the relative sizes of the labour force in the different age groups. For the female population, there is a complete reversal of the order of magnitude for the unstandardised rates for urban and for rural as compared to the standardised rates. As stated earlier the standardised rate for urban exceeds that for rural. However, the unstandardised rate shows that the urban rate is less than the rural rate by 1.2 per cent.

Another point worthy of note is that while for the male urban population aged 15 years and over the unstandardised rate is higher than the standardised rate by 0.4 per cent, for the rural population, it is less by just 0.1 per cent. Slightly more marked differences are found in the rates for the female population aged 15 years and over. The unstandardised activity rate for urban is 1.6 per cent less than the standardised rate and for rural, it is 0.4 per cent higher.

These differences can be attributed to the imbalances in the age-sex composition of the urban and rural areas due to age-selective migration and differences in the fertility and mortality levels between the urban and rural segments of the population.

The results show that for both males and females the difference between urban and rural rates was not large. The lack of significant difference between the urban and rural rates for females is very striking. This pattern is especially surprising to those who have not observed the active role that women play in development in both the urban and rural areas of Ghana.

**Education.** Information on the labour force by sex and type of school attended is not at present available from the 1970 Census. However, since the employed population forms 94 per cent of the total labour force, the educational characteristics of the employed would dominate those of the total labour force, and thus could be taken as portraying the essential features of the labour force. Tables 5.5 and 5.6 show the distribution of the main occupations by sex and type of school attended. One of the main features noticeable from the distribution is the fact that the labour force is made up predominantly of those who have not been to school. Of the employed males, 63.5 per cent had never been to school as compared to 82.7 per cent for females.

Of the main occupations, the per cent never attended school for females in the group Administrative and Managerial Workers strikes one as strange but when one considers the fact that this group includes contractors and managers, then the proportion never attended school for both male and female is understandable.

If we take school attendance as an index of literacy, then the most literate group of workers, as measured by proportion with any type of schooling, is Clerical Workers followed by Professional, Technical and Related Workers and Administrative and Managerial Workers. The existence of illiteracy among the clerical workers could be attributed partly to processing errors, which are always present in gigantic operations like censuses and partly to the practice in certain areas of appointing persons to jobs for which they are not qualified. Thus, the illiterate in the detailed occupation group "Clerical Workers not elsewhere classified" might be symptomatic of this type of situation. The never-attended-school among the Professional, Technical and Related Workers come from the minor occupation "Workers in religion".

Table 8 or Vol. IV of the 1960 Census Report [Census office 1960] show similar results in relation to the employed population of 1960. There the never-attended-school among professional, technical and related workers were to be found mainly among professional medical workers not elsewhere specified (mainly native physicians, herbalists, jujumen and fortune tellers) and clergy and related members of religious orders (mainly fetish priests). Also for the employed population in 1960, the "Administrative, executive and managerial workers" who had never been to school were to be found in the occupation "chiefs and related elected officials". As in 1970, the clerical workers with no school attendance were to be found in the occupation "Clerical Workers not elsewhere classified".

Although we have made reference to both occupations in 1960 and 1970, it is worth noting that the Standard National Classification of Occupations (SNOCS of Ghana) used in both censuses differed in some respects and only approximate comparisons are intended in the statements made above. It is also worth noting that in 1960 Arabic school attendants were included among those who have attended school but in 1970 those who attended Arabic schools where only the reading and writing of the Koran were taught were regarded as belonging to the category "never attended school". However, attendants of schools where Arabic was taught in addition to other subjects taught in regular schools were regarded as having been to school.

To summarise, Ghana's labour force as portrayed by the employed population is largely illiterate and low in skill — a not too surprising result since only about 30.2 per cent of the population aged 15 years and over is literate.

**Occupation.** The 1960 Post-Enumeration Survey and the 1971 Supplementary Survey both enquired into the occupations of the labour force. The results of the 1960 Census are shown in Tables G 10 and G 11 of Vol. I of the Census Report. [Census Office 1960] However, the results of the 1971 Supplementary Enquiry are not yet available. For comparative purposes, therefore, we shall again use the characteristics of the employed population as approximating



TABLE 5.6. - OCCUPATIONS OF EMPLOYED PERSONS, (MAJOR GROUPS IN PERCENTAGES) AGED 15 AND OVER  
IN 1970 BY TYPE OF SCHOOL ATTENDED AND SEX - TOTAL COUNTRY

Percentages

Occupation	Sex	Total	Never attended School	Primary	Middle	Secondary	Commercial and Technical	Teacher Training Cert. A Post - Sec.	Teacher Training Cert. A Post- Middle	Teacher Training Cert. A Post- Middle	Specialist Training College Advanced Training College	Uni- versity
All Occupations	M	100.00	63.45	8.24	22.81	2.48	1.10	0.09	0.95	0.17	0.05	0.61
	F	100.00	82.74	7.41	8.28	0.52	0.28	0.04	0.48	0.08	0.02	0.09
Professional, Technical and Related Workers	M	100.00	8.33	1.42	38.22	15.98	4.66	1.76	17.28	2.93	0.99	8.38
	F	100.00	12.46	1.26	37.81	11.14	0.94	2.45	24.29	4.11	1.18	4.30
Administrative and Managerial Workers	M	100.00	17.37	3.90	36.13	20.89	5.54	0.11	1.00	0.20	0.05	14.77
	F	100.00	40.61	4.43	19.11	15.69	2.38	0.51	2.21	0.34	0.17	14.50
Clerical Workers	M	100.00	3.33	0.72	67.10	18.49	8.99	0.05	0.25	0.09	0.00	0.95
	F	100.00	0.69	0.18	60.30	16.64	21.36	0.01	0.17	0.10	0.00	0.50
Sales Workers	M	100.00	45.62	5.58	39.90	6.40	1.59	0.02	0.10	0.04	-	0.71
	F	100.00	82.28	8.45	8.97	0.17	0.09	0.00	0.00	0.00	0.00	0.00
Service Workers	M	100.00	53.36	4.99	37.56	2.80	1.08	0.00	0.06	0.05	0.00	0.05
	F	100.00	51.00	11.28	34.71	1.84	0.82	0.01	0.09	0.06	0.02	0.11
Agricultural, Animal Husbandry and Forestry Workers, Fishermen and Hunters	M	100.00	80.53	8.48	10.67	0.22	0.06	0.00	0.01	0.00	0.00	0.00
	F	100.00	90.17	6.62	3.18	0.01	0.00	-	0.00	0.00	0.00	0.00
Production and Related Workers, Transport, Equipment Operators and Labourers	M	100.00	48.34	11.60	37.42	1.21	1.35	0.00	0.01	0.00	0.00	0.02
	F	100.00	74.39	9.38	15.64	0.38	0.15	0.00	0.00	0.00	-	0.00

TABLE 5.7. — EMPLOYED PERSONS (AGED 15 YEARS AND OVER) BY SEX AND MAIN  
OCCUPATION — REGIONS  
Absolute Numbers

Region	Sex	All Occupations	Professional Technical and Related Workers	Adminis- trative and Managerial Workers	Clerical Workers	Sales Workers	Service Workers	Agricultural Animal Husbandry Workers, Fishermen and Hunters	Production and Related Workers Transport Equipment Operators and Labourers
All Regions	M	1,717,928	91,587	10,737	73,003	50,369	69,189	1,026,530	396,513
	F	1,415,119	28,093	586	13,358	363,141	20,975	771,726	217,240
Western Region	M	173,736	8,994	966	9,552	3,780	8,495	90,254	51,695
	F	138,008	2,746	21	1,134	34,985	1,737	83,575	13,810
Central Region	M	160,780	8,669	683	4,908	2,940	4,465	107,525	31,590
	F	191,182	3,140	116	695	45,938	1,359	119,919	20,015
Greater Accra Region	M	202,559	18,066	4,251	28,596	11,276	24,421	23,470	92,479
	F	128,632	6,579	300	8,017	68,115	8,259	7,273	30,089
Eastern Region	M	240,478	15,619	1,020	7,590	5,801	6,522	146,386	57,540
	F	233,046	4,850	37	981	55,032	2,588	127,830	41,728
Volta Region	M	171,120	9,497	450	3,527	3,639	4,210	113,217	36,580
	F	192,577	2,863	30	492	48,304	1,497	104,981	34,410
Ashanti Region	M	286,191	16,243	2,139	10,992	12,046	11,934	154,207	78,630
	F	257,403	4,995	58	1,407	53,475	3,443	165,169	28,856
Brong-Ahafo Region	M	167,680	6,358	473	4,090	3,378	3,794	128,147	21,440
	F	134,580	1,482	13	284	16,758	914	104,519	10,610
Northern Region	M	162,564	3,570	397	2,162	3,021	3,033	135,848	14,533
	F	58,952	679	7	218	21,178	701	24,289	11,880
Upper Region	M	152,820	4,571	358	1,586	4,488	2,315	127,476	12,026
	F	80,739	759	4	130	19,356	477	34,171	25,842

Source : Census Office, Accra

TABLE 5.8. — EMPLOYED PERSONS (AGED 15 YEARS AND OVER) BY SEX AND MAIN OCCUPATIONS — REGIONS  
Percentages

Region	Sex	All Occupations	Professional Technical and Related Workers	Administrative and Managerial Workers	Clerical Workers	Sales Workers	Service Workers	Agricultural Animal Husbandry Workers, Fishermen and Hunters	Production and Related Workers Transport Equipment Operators and Labourers
All Regions	M	100.0	5.33	0.62	4.24	2.93	4.02	59.75	23.08
	F	100.0	1.98	0.04	0.94	25.66	1.48	54.53	15.35
Western Region	M	100.0	5.17	0.55	5.49	2.17	4.88	51.94	29.75
	F	100.0	1.98	0.01	0.82	25.34	1.25	60.55	10.00
Central Region	M	100.0	5.39	0.42	3.05	1.82	2.77	66.87	19.64
	F	100.0	1.64	0.06	0.36	24.02	0.71	62.72	10.46
Greater Accra Region	M	100.0	8.91	2.09	14.11	5.56	12.05	11.58	45.65
	F	100.0	5.11	0.23	6.23	52.95	6.42	5.65	23.39
Eastern Region	M	100.0	6.49	0.42	3.15	2.41	2.71	60.87	23.92
	F	100.0	2.08	0.01	0.42	23.61	1.11	54.85	17.90
Volta Region	M	100.0	5.54	0.26	2.06	2.12	2.46	66.16	21.37
	F	100.0	1.48	0.01	0.25	25.08	0.77	54.51	17.86
Ashanti Region	M	100.0	5.67	0.74	3.84	4.20	4.16	53.88	27.47
	F	100.0	1.94	0.02	0.54	20.77	1.33	64.16	11.21
Brong-Ahafo Region	M	100.0	3.79	0.28	2.43	2.01	2.26	76.42	12.78
	F	100.0	1.10	0.00	0.21	12.45	0.67	77.66	7.88
Northern Region	M	100.0	2.19	0.24	1.32	1.85	1.86	83.56	8.93
	F	100.0	1.15	0.01	0.36	35.92	1.18	41.20	20.15
Upper Region	M	100.0	2.99	0.23	1.03	2.93	1.51	83.41	7.86
	F	100.0	0.94	0.00	0.16	23.97	0.59	42.32	32.00

those of the labour force. As previously explained, this is a reasonable assumption since the employed population constitutes 94 per cent of the labour force.

It is to be noted from Table 44 of the Advance Report of the 1960 Census [Census office 1962] that "Farmers, fishermen, hunters, loggers and related workers" constitute the major section of the employed population (males 62.8 per cent and females 56.1 per cent), "sales workers" and "craftsmen, production process workers and labourers not elsewhere specified" made up most of the remainder ; the former contributing males, 4.3 per cent and females, 28.2 per cent and the latter males, 18.7 per cent and females, 10.3 per cent. There were, of course, regional differences. Accra C.D. (now known as Greater Accra Region), for example, had more of its employed population in the major occupation group "Craftsmen, production process workers and labourers n.e.s." The relevant figures were : males, 40.9 per cent, females, 12.9 per cent. Agricultural workers made up only a small proportion of the employed population, 16.6 per cent for males and 5.5 per cent for females.

The picture in 1970 is similar to that of 1960. Tables 5.7 and 5.8 show the distribution of the employed population by sex and main occupation in absolute numbers and percentages respectively. Again, the major occupation group "Agricultural, Animal Husbandry and Forestry Workers, Fishermen and Hunters" continues to dominate the employed population. The relevant figures are : males, 1,026,530 (or 56.75 per cent) and females, 771,726 (or 54.53 per cent). These figures represent a drop in the corresponding figures for 1960. In 1970 as in 1960, there were interesting regional differences. Brong Ahafo had the highest proportion of employed population in the Agricultural Workers group; males, 128,147 (or 76.42 per cent), females, 104,519 (or 77.66 per cent), Greater Accra Region had the highest rankings in the proportions employed in the three main occupations; "Professional, Technical and Related Workers," "Administrative and Managerial Workers" and "Clerical Workers". The relevant figures are males, 8.91 per cent and females 5.11 per cent, males, 2.09 per cent and females 0.23 per cent; males 14.11 per cent, females 6.23 per cent respectively. This is not surprising since Greater Accra is composed of the twin cities of Accra and Tema which contain most of the industrial establishments in Ghana in addition to it being the seat of Government. In this monograph, it will not be possible to look at all the differences in proportions in various occupations between regions and account for them. It is hoped, however, that the preceding short discussion has highlighted some of the interesting results in Tables 5.7 and 5.8.

**Industrial Structure.** In this section also, we shall take the industrial structure of the employed population as approximating that of the labour force. In this connection, it is to be noted that the industry of a person is defined as the major product or service of the establishment in which the person works. Thus, though some occupations are highly correlated with some

TABLE 5.9. — EMPLOYED PERSONS (AGED 15 YEARS AND OVER MAIN INDUSTRY,  
BY SEX AND REGION  
Absolute Numbers

Region	Sex	All Industries	Agriculture Hunting, Forestry and Fishing	Mining and Quarrying	Manu- facture	Electri- city, Gas & Water	Construc- tion	Wholesale & Retail Trade & Restaurants and Hotels	Transport, Storage and Communi- cation	Insurance, Real Estate and Service	Community Social and Personal Service
All Regions	M	1,717,928	1,015,122	28,640	166,911	11,758	70,936	67,078	82,033	7,522	267,928
	F	1,415,119	771,608	2,346	213,504	447	2,628	368,894	2,268	1,848	51,576
Western Region	M	173,736	88,264	11,793	19,867	950	5,329	5,436	16,369	454	25,274
	F	138,008	83,425	559	13,532	19	183	35,364	453	80	4,393
Central Region	M	160,780	106,145	1,512	13,308	937	6,215	3,605	6,425	326	22,307
	F	191,182	119,821	366	19,508	22	198	46,331	162	39	4,735
Greater Accra Region	M	202,559	24,006	1,224	39,989	3,765	21,591	19,350	22,174	4,228	66,232
	F	128,632	7,559	375	29,734	235	1,041	70,056	1,064	1,339	17,229
Eastern Region	M	240,478	140,811	4,971	24,052	2,669	9,075	6,614	10,883	594	40,809
	F	233,046	127,420	612	40,978	95	311	55,761	186	92	7,591
Volta Region	M	171,120	112,598	128	19,603	638	7,711	3,836	4,994	320	21,292
	F	192,577	105,132	309	33,554	14	223	48,803	107	72	4,363
Ashanti Region	M	286,191	152,355	8,806	29,673	1,449	10,903	15,525	14,437	1,042	52,001
	F	257,403	165,173	102	28,406	35	294	54,562	212	199	8,420
Brong-Ahafo Region	M	167,680	128,224	79	9,580	392	3,719	4,621	3,432	288	17,345
	F	134,580	104,529	4	10,518	11	57	17,109	36	12	2,304
Northern Region	M	162,564	135,601	23	5,203	555	4,047	3,424	1,959	172	11,580
	F	58,952	24,350	11	11,632	8	190	21,407	28	13	1,313
Upper Region	M	152,820	127,118	104	5,636	403	2,346	4,667	1,360	98	11,088
	F	80,739	34,199	8	25,642	8	131	19,501	20	2	1,228

Source: Census Office, Accra.



industries, occupation and industry are not identical. For example, members of the occupation group "Agricultural, Animal Husbandry and Forestry Workers, Fishermen and Hunters" usually work in the industrial sector, "Agriculture, Hunting, Forestry and Fishing" but not always. An agricultural worker can be employed by a non-agricultural establishment.

Table 41 of the Advance Report of the 1960 Census (Census Office 1962) already referred to gives the main industries of employed persons aged 15 years and over. This shows that 63.7 per cent of employed males, and 58.3 per cent of employed females were engaged in agriculture. The corresponding figures for 1970 as shown in Table 5.10 are males, 59.0 per cent and females, 54.5 per cent. Manufacturing increased its share of the employed population from males, 8.7 per cent, females, 10.0 per cent in 1960 to males, 9.7 per cent and females, 15 per cent in 1970. Again there are regional differences. Greater Accra and the Volta Regions had relatively high proportions of both males and females employed population in manufacturing: males, 19.7 per cent, females, 23.1 and males, 11.5 per cent and females, 17.4 per cent respectively. The Western Region, as was to be expected, ranked first in both 1960 and 1970 in the proportion of employed population employed in Mining and Quarrying. In 1960, 6.5 per cent of employed males and 0.5 per cent of employed females worked in Mining and Quarrying establishments. The corresponding figures for 1970 are males 6.8 per cent and females 0.4 per cent. It must be pointed out, however, that the 1960 Western Region is not the same as the 1970 Western Region. The 1960 Western Region included the present Central Region and thus direct comparisons between the two Western Regions are slightly misleading. But it is safe to assume that the present Western Region ranked first in Mining and Quarrying also in 1960. The over-concentration of construction workers in the Greater Accra Region is shown in the fact that in 1960 as well as 1970, the region had the greatest proportion of employed persons in construction. The figures for 1960 were, males, 18.9 per cent, females, 1.5 per cent. The corresponding figures for 1970 were: males, 10.7 per cent and females 0.8. The drop in proportions between 1960 and 1970 is due to the general slow-down in construction which followed immediately after the 1966 coup which overthrew the Nkrumah regime. In "wholesale, retail trade and restaurants and hotels," Greater Accra region dominated the other regions. It is, however, to be noted that female participation in this industrial sector was relatively high in all regions, Greater Accra recording the highest rate of 54.5 per cent. Similar differences in proportions in the remaining industrial sectors exist but they cannot all be considered in this monograph.

**Unemployment.** Although in this chapter the discussion has related mainly to the characteristics of the labour force, it is relevant to consider some characteristics of the unemployed, one of the components of the la-

bour force. The unemployment rate for Ghana in both 1960 and 1970 was 6.0 per cent per annum. There are regional differences as shown below. The stated rates are for 1970:

Western	5.9
Central	5.0
Greater Accra	9.6
Eastern	5.7
Volta	3.5
Ashanti	7.0
Brong-Ahafo	3.8
Northern	2.0
Upper	10.0

From the above, it is noted that the highest unemployment rates were recorded in Upper, Greater Accra and Ashanti regions. The figure for the Upper region may be due to the timing of the census – March – which is within the off-season for farming. Although the census concepts took note of the timing of the census and made it clear that farmers and farm-workers off-season were to be classified as “had job but did not work” and were thus to be included with the employed, it appears that in the Upper Region a large number of persons whose previous occupation was farm-workers were classified as unemployed. The reasons for this apparent misclassification are now being studied. It is, however, relevant to note that in the Supplementary Enquiry which was conducted about eighteen months after the 1970 Census during the farming season, the unemployment rate for the Upper region was much lower and was similar to that obtained for the Northern region.

In a previous study by de Graft-Johnson [de Graft-Johnson 1974] he found out that if the Upper and Ashanti Regions are ignored, the unemployment rates for the local authorities in the remaining regions were highly correlated with degree of urbanisation (i.e. the proportion of persons in the local authority living in localities with a population of 5,000 or more). The correlation coefficients were 0.5 for males and 0.6 for females. This confirms the view often expressed that unemployment is worse in urban centres. In the total country, the urban rate is 8.6 while the rural rate is 4.9, among those aged 15 years and above.

Not only are there urban/rural and regional differentials in unemployment rates, there are also age-specific differences. For the total country, the unemployment rates among those aged 15-19 is the highest: 24.9 per cent as against 0.5 per cent for those aged 65 and over. This is an expected pattern, since unemployment rates among middle-school leavers, mainly in the age-group 15-19 years, are expected to be high.

TABLE 5.10. — EMPLOYED PERSONS (AGED 15 YEARS AND OVER) BY SEX, MAIN INDUSTRY, AND REGION  
(Percentages)

Region	Sex	All Industries	Agriculture, Hunting, Forestry & Fishing	Mining and Quarrying	Manufacture	Electricity, Gas and Water	Construction	Wholesale, Retail Trade & Restaurants & Hotels	Transport, Storage & Communication	Insurance, Real Estate & Business Services	Community, Social & Personal Services
			1	2	3	4	5	6	7	8	9
All Regions	M	100.00	59.08	1.66	9.71	0.68	4.12	3.90	4.77	0.43	15.59
	F	100.00	54.52	0.16	15.08	0.03	0.18	26.06	0.16	0.13	3.64
Western Region	M	100.00	50.80	6.78	11.43	0.54	3.06	3.12	9.42	0.26	14.56
	F	100.00	60.44	0.40	9.80	0.01	0.13	25.62	0.32	0.05	3.18
Central Region	M	100.00	66.01	0.94	8.27	0.58	3.86	2.24	3.99	0.20	13.87
	F	100.00	62.67	0.19	10.20	0.01	0.10	24.23	0.08	0.02	2.47
Greater Accra Region	M	100.00	11.85	0.60	19.74	1.85	10.65	9.55	10.94	2.08	32.69
	F	100.00	5.87	0.29	23.11	0.18	0.80	54.46	0.82	1.04	13.39
Eastern Region	M	100.00	58.55	2.06	10.00	1.10	3.77	2.78	4.52	0.24	16.96
	F	100.00	54.67	0.26	17.58	0.04	0.13	23.92	0.07	0.03	3.25
Volta Region	M	100.00	65.80	0.07	11.45	0.37	4.50	2.24	2.91	0.18	12.44
	F	100.00	54.59	0.16	17.42	0.00	0.11	25.34	0.05	0.03	2.26
Ashanti Region	M	100.00	53.23	3.07	10.36	0.50	3.80	5.42	5.04	0.36	18.17
	F	100.00	64.16	0.03	11.03	0.01	0.11	21.19	0.08	0.07	3.27
Brong-Ahafo Region	M	100.00	76.46	0.04	5.71	0.23	2.21	2.75	2.04	0.17	10.34
	F	100.00	77.67	0.00	7.81	0.00	0.04	12.71	0.02	0.00	1.71
Northern Region	M	100.00	83.41	0.01	3.20	0.34	2.48	2.10	1.20	0.10	7.12
	F	100.00	41.30	0.01	19.73	0.01	0.32	36.21	0.04	0.02	2.22
Upper Region	M	100.00	83.18	0.06	3.68	0.26	1.53	3.05	0.88	0.06	7.25
	F	100.00	42.35	0.00	31.75	0.00	0.16	24.15	0.02	0.00	1.52

**Conclusion.** In this monograph, it has not been possible to cover all aspects of the demographic, social and economic characteristics of the labour force. This has been due mainly to the fact that data from the 1971 Supplementary Enquiry are not yet available in the form which will make it possible for an analysis of the information to be included in this publication. The projections of the labour force are dealt with in a later chapter.

## CHAPTER VI

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# POPULATION GROWTH AND SOCIO-ECONOMIC IMPLICATIONS \*

This chapter discusses the implications of population growth under various assumptions of fertility and mortality changes on selected socio-economic indicators. It is divided into two main sections : population projections for the period 1960-2000; and the socio-economic implications of such projections.

**Sources, Assumptions and Methods.** The estimated age and sex distribution and the recorded 1960 total population of Ghanaian origin<sup>(1)</sup> [see Gaisie 1974 Chapter V] were used to derive the base population for the projections. No attempt was made to adjust the 1960 Census population for the so-called over-enumeration of between 0.6 and 2.5 per cent because the procedure employed in deriving these estimates appears to have a built-in mechanism for exaggerating the apparent under-enumeration in the Post-Enumeration Survey (PES) and consequently biasing the estimates of over-enumeration in the 1960 Census. Moreover, the coverage of the 1960 Population Census was, to all intents and purposes, better than that of the Post-Enumeration Survey and the estimation of the extent of coverage of the former by the latter leaves much to be desired. This fact been noted by the planners of the 1960 Census and the Post-Enumeration Survey in a paper presented at the 38th Session of the International Statistical Institute in 1971 where de Graft-Johnson and Gil made the following observations:

“It has been assumed in the past that sample surveys offered a better quality of data than complete censuses. This higher quality of information was implied in both response and coverage. These assumptions, at least the one relating to coverage, cannot be confirmed by African experiences. Most of the sample surveys done in Black Africa for which reports are available seem to suggest that sample surveys have poorer coverage” (de Graft-Johnson and Gil, 1971: I).

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(\*) In this chapter we have drawn extensively on Chapter VII of *Planned Fertility Reduction in Ghana* (authors Gaisie S.K. and David A.S.) (in press).

(1) That is, population of Ghanaians excluding persons of foreign origin who were born in Ghana.

It was decided therefore to accept the recorded figures at their face value rather than to rely on the adjusted ones based on estimates of possible over-enumeration in the census. There is no doubt that there might have been over-enumeration and under-enumeration in certain specific areas but the net effect of these opposing factors cannot be determined in the light of the available demographic information with any amount of confidence.

In the absence of any convincing evidence to the contrary, therefore, the recorded total population of 5,899,334 was used as the base population for the projections. Lack of reliable data on international migrants and the 'disturbance' of the foreign origin population (i.e. foreign born and other foreign origin population) by the enforcement of the 1969 *Alien Compliance Order* in late 1969 and early 1970 (see Gaisie, "Population Policy and its Implementation" in Caldwell *et. al.* (eds.), 1974), have rendered the estimation of the existing and the future alien population a very risky exercise, at least for the present moment. The number of 'aliens' who left Ghana just before the 1960 Census and the number who have presumably returned since the overthrow of the Busia regime is unknown. Secondly, fear of insecurity among those who remained behind might have had an adverse effect on the size of the non-Ghanaian component of the Ghana population as recorded in the 1970 Census. Thus, any reasonable estimate of the population of foreign origin (i.e. including both foreign born and foreign origin population) must await fresh information from the 1970 Census.

## Assumptions.

### a) *Mortality*

The estimated rates of improvement in life expectancies (i.e. 0.33 years per year in the early 1940's; 0.5 years per year between the 1950's and 1960's; and between 0.6 and 0.7 years per year for the remainder of the century — see Gaisie 1974, Chapter IV) and the estimated life expectancies at birth of 43.1 years for males and 45.7 years for females in 1960 (Table 6.1) formed the basis of the mortality assumptions. Because of uncertainty with regard to future trends in mortality, the following three mortality assumptions about possible rates of increase in life expectancy were employed:

- (1) life expectancy at birth would increase by 2.5 years per quinquennium during the entire projection period;
- (2) life expectancy at birth would increase by 2.5 years per quinquennium between 1960 and 1970 and by 3.0 years between 1970 and 2000;
- (3) life expectancy at birth would increase by 2.5 years per quinquennium during the 1960's and by 3.5 years between 1970 and 2000.

The estimated life expectancy values used in the projections are presented in Table 6.1; the corresponding survival ratios were interpreted from Coale-Demeny North model life tables (see Gaisie 1974, Chapter IV). On the basis of the assumptions stated above, the male life expectancy at birth is expected to increase from 43.1 years in 1960 to between 60.6 years and 66.6 years in 2000, depending on which rate of increase proves to be realistic. The corresponding figures for females are 45.7 in 1960 and between 63.2 years and 69.2 years in 2000 (Table 6.1). Experience in other developing countries shows that it is not unlikely for the rate of increase in life expectancy to rise more rapidly than it is assumed in these projections but the available materials do not provide strong basis for being too optimistic as far as Ghana is concerned and the rate of increase of 0.7 years per year used in one set of the projections is considered to be the most plausible high estimate.

TABLE 6.1. - LIFE EXPECTANCY(\*) VALUES USED IN THE PROJECTIONS FOR GHANA, BY SEX, 1960-2000

Period (Years)	Assumption 1		Assumption 2		Assumption 3	
	Male	Female	Male	Female	Male	Female
1960-65	43.1	45.7	43.1	45.7	43.1	45.7
1965-70	45.6	48.2	45.6	48.2	45.6	48.2
1970-75	48.1	50.7	48.6	51.2	49.1	51.7
1975-80	50.6	53.2	51.6	54.2	52.6	55.2
1980-85	53.1	55.7	54.6	57.2	56.1	58.7
1985-90	55.6	58.2	57.6	60.2	56.6	62.2
1990-95	58.1	60.7	60.6	63.2	63.1	64.7
1995-2000	60.6	63.2	64.6	66.2	66.6	69.2
(*) i.e. life expectancy at birth.						

#### b) Fertility

The calculation of future births was based on the estimated total fertility ratio of 6.9 and age structure of fertility for 1960(1) (see Gaisie 1974, Chapter III). The total fertility ratio was fed into the estimated relative age distribution of the age-specific fertility rates and the annual number of births was calculated by multiplying the average number of women in the five-year reproductive age groups at the mid-point of the quinquennium by the corresponding age specific fertility rates. The total number of births for the quinquennium was then

(1) It must be noted that the models of age structure of fertility based on the Post-Enumeration Survey and the 1968 survey data on the proportion of ever-married females by age are virtually the same. It may be inferred from the findings therefore that there has not been any significant change in age pattern of fertility since 1960.

obtained by multiplying the estimated annual births by 5. This procedure was intended to take into account any changes in the age structure of the females (i.e. aged 15-49) as they progress towards the terminal projection year.

Unlike mortality, fertility levels prevailing in Ghana appear to have remained relatively constant over the past decades and there is no indication of any decline in fertility in the immediate future. It is too early to expect any significant changes in the levels of fertility resulting from the National Family Planning Programme and no one can predict when declines in fertility will begin to set in. In view of the difficulty involved in tracing the possible paths of fertility trends and also in view of the tremendous impact which changing fertility has on the age structure, which is of paramount importance in the determination of the socio-economic impact of population change and the future population trends, Ghana's population was projected under four different fertility assumptions. The four sets of projections are referred to as Series A, B, C and D; the underlying fertility assumption in each of these series is outlined below:

- (1) *Series A*: Fertility level would remain constant throughout the projection years (i.e. 1960-2000).
- (2) *Series B*: The total fertility ratio would remain constant for the first twenty-five years and thereafter decline linearly from 6.9 to 5.0 by the year 2000, a decline of about 28 per cent between 1985 and 2000.
- (3) *Series C – i.e. rapidly declining fertility*: The fertility ratio would decline linearly as from 1985 to 4.0 in 2000, a decline of about 42 per cent.
- (4) *Series D – very rapidly declining fertility*: It is assumed in this series that the total fertility ratio would be more than slightly halved by the end of the century (i.e. 6.9 to 3.0 between 1985 and 2000). It is envisaged in this series that the impact of the family planning programme would be sharply felt towards the end of the projection period though it is not very likely that a reduction in the fertility level by more than 50 per cent would occur within the period of fifteen years. Nevertheless, Series D<sub>3</sub> provides a model for the examination of the effects of a very rapidly declining fertility on the population structure and growth in relation to that generated in the other series (Table 6.2).

The basic data and the mortality and fertility assumptions were fed into a computer programme and twelve sets of projected populations classified by age and sex were obtained. In order to simplify the preparation of the summary of the results and the implications of the projections, the discussion which follows will be confined to what we refer to here as Series A<sub>3</sub>, B<sub>3</sub>, C<sub>3</sub> and D<sub>3</sub>; the subscript indicates the mortality changes assumed in the series (i.e. assumption (3) above)(1) [See following page for note (1)].



TABLE 6.2. -- TOTAL FERTILITY RATE IN GHANA: 1960-2000

Year	Series A	Series B	Series C	Series D
1960-65	6.9	6.9	6.9	6.9
1965-70	6.9	6.9	6.9	6.9
1970-75	6.9	6.9	6.9	6.9
1975-80	6.9	6.9	6.9	6.9
1980-85	6.9	6.9	6.9	6.9
1985-90	6.9	6.3	5.9	5.6
1990-95	6.9	5.7	5.0	4.3
1995-2000	6.9	5.0	4.0	3.0

Total Population of Ghana Origin. Table 6.3 shows the recorded and projected population of Ghana origin for the period 1960 to 2000. There is virtually no difference between the projected population up to 1985, but thereafter, due to the impact of the assumed differential declines in fertility underlying the four series, they begin to show remarkable differences (see Figure 6.1). In the absence of any changes in the level of fertility (Series A<sub>3</sub>), the population would double by 1982, a period of less than 25 years, and by the year 2000 there would be nearly four Ghanaians for every one in 1960. Even a reduction of 28 per cent in fertility by 2000 would result in an increase of  $3 \frac{1}{3}$  fold in the population by the end of the century (series B<sub>3</sub>), implying that there would be three Ghanaians in 2000 for every one in 1960. Under series C<sub>3</sub> (i.e. rapidly declining fertility), the total population would increase to 19.1 million by 2000, a population which would be more than thrice and twice that of the 1960 and 1970 populations respectively (Table 6.3, and Figure 6.1). Thus, even if Ghana is able to cut down her fertility rate by nearly 50 per cent between 1985 and 2000, her population would more than double within the next twenty-six years. It must be remembered that slight changes in the fertility level would not have any significant effect on the size of the future population and the important issue which would be agitating the minds of Ghanaians who have given some thought to the rapid population growth in the country is the rate at which the fertility would decline once the process had begun. Note that a reduction of nearly 57 per cent by year 2000 (Series D<sub>3</sub>) would generate a population of nearly 18 million by that year and this would be more than twice the 1972 estimated population of 8.2 million (1972 estimate derived from Table 6.3). Nevertheless, a decline in fertility beginning in 1985 would reduce the size of the population by between 11 per cent (series B<sub>3</sub>) and 20 per cent (Series D<sub>3</sub>).

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(1) It must also be noted that only two sets of the projected age and sex distribution of the population of Ghana are presented in Appendix I. (i.e. series A<sub>2</sub> and C<sub>2</sub>).

TABLE 6.3. – RECORDED AND PROJECTED POPULATION OF  
GHANAIAI ORIGIN: 1960-2000 (NUMBERS IN THOUSANDS)

Year	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
<b>Recorded</b> 1960	5,899	5,899	5,899	5,899
<b>Projections</b> 1965	6,762	6,762	6,762	6,762
1970	7,797	7,797	7,797	7,797
1975	9,083	9,083	9,083	9,083
1980	10,682	10,682	10,682	10,682
1985	12,684	12,684	12,684	12,684
1990	15,198	14,925	14,782	14,638
1995	18,368	17,431	16,941	16,451
2000	22,350	20,207	19,079	17,951

Source: Appendix VII Tables 27,30, 32 and 36 [Gaisie 1973]

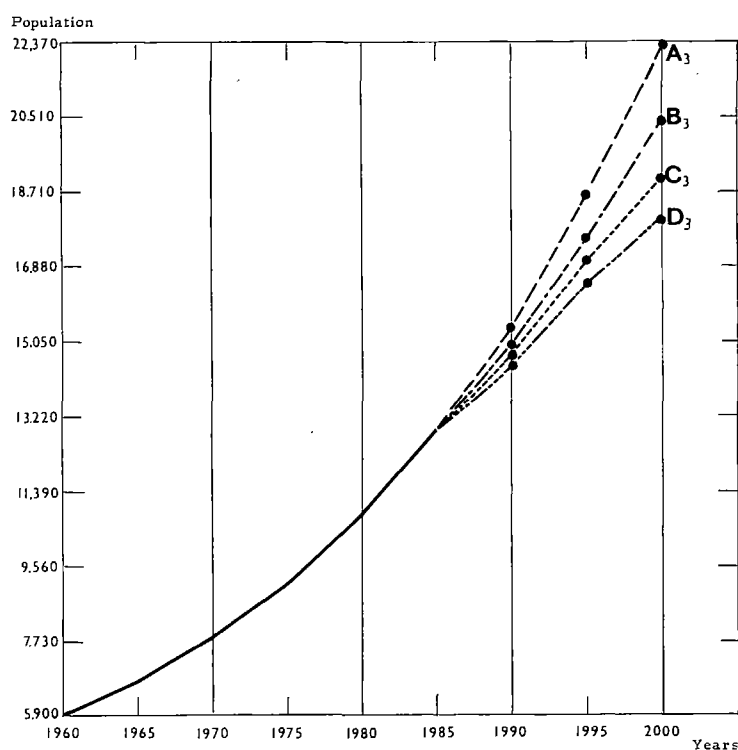


Figure 6.1. – Recorded and projected population of Ghanaian origin: 1960-2000  
(Numbers in thousands)

Two main conclusions emerge from the above analysis:

- (1) That there should be no fear at all about Ghana's population remaining at less than ten million, let alone declining from its present absolute value; and
- (2) That the sooner the fertility begins to decline, the sooner will the result be seen in terms of slowing the rate of growth (a fact which will be demonstrated in the following paragraphs).

**Population Growth.** The estimated rate of natural increase (RNI) of 2.7 per cent per annum would rise to about 3.4 per cent between 1980 and 1985; an increase which is largely attributable to decline in crude birth

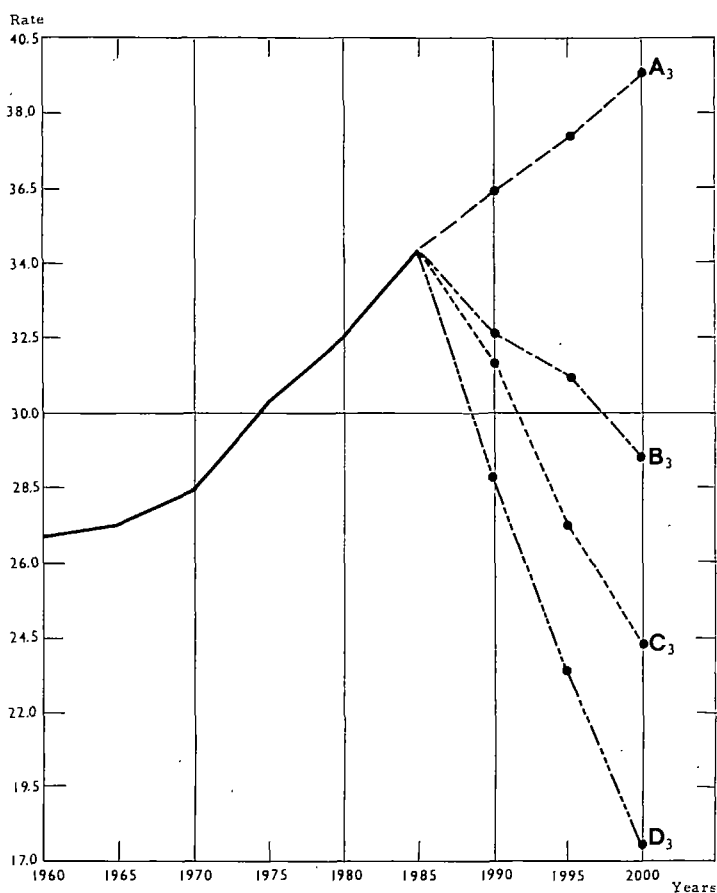


Figure 6.2. — Estimated and projected rates of natural increase for Ghana: 1960-2000 (Rates per 1000 population)

TABLE 6.4. – ESTIMATED AND PROJECTED CRUDE BIRTH AND  
DEATH RATES AND RATES OF NATURAL INCREASE FOR GHANA  
1960-2000 (RATES PER 1,000 POPULATION)

Year	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
<b>Estimate</b>				
1960				
CBR	50.0	50.0	50.0	50.0
CDR	23.0	23.0	23.0	23.0
RNI	27.0	27.0	27.0	27.0
<b>Projections</b>				
1960-1965				
CBR	49.4	49.4	49.4	49.4
CDR	22.1	22.1	22.1	22.1
RNI	27.3	27.3	27.3	27.3
1965-1970				
CBR	48.5	48.5	48.5	48.5
CDR	20.1	20.1	20.1	20.1
RNI	28.4	28.4	28.4	28.4
1970-1975				
CBR	47.8	47.8	47.8	47.8
CDR	17.3	17.3	17.3	17.3
RNI	30.3	30.5	30.5	30.5
1975-1980				
CBR	47.3	47.3	47.3	47.3
CDR	14.9	14.9	14.9	14.9
RNI	32.4	32.4	32.4	32.4
1980-1985				
CBR	46.9	46.9	46.9	46.9
CDR	12.6	12.6	12.6	12.6
RNI	34.3	34.3	34.3	34.3
1985-1990				
CBR	46.6	42.7	40.7	38.6
CDR	10.5	10.2	10.1	10.0
RNI	36.1	32.5	30.6	28.6
1990-1995				
CBR	46.3	39.2	35.2	31.1
CDR	8.5	8.2	8.0	7.8
RNI	37.8	31.9	27.7	23.3
1995-2000				
CBR	46.0	36.0	30.1	23.7
CDR	6.8	6.5	6.4	6.2
RNI	39.2	29.5	23.7	17.5
Sources : Appendix VII : Tables 27, 30, 33 and 37 [Gaisie 1973]				

rate between 1960 and 1985 is due mainly to the shifts in the age structure and does not necessarily imply a fall in the fertility level. In the years following the base date of fertility decline (i.e. 1985), the rates of natural increase show striking differences which reflect the different fertility assumptions under which the population was projected (see figure 6.2). In Series  $A_3$ , where fertility is held constant, the rate of growth would continue to increase from 3.4 per cent per annum in 1985 to about 3.9 per cent in 2000, around one-sixth higher than the level attained between 1980 and 1985. On the other hand, a relatively moderate decline in fertility (Series  $B_3$ ) would bring the rate down to almost 3.0 per cent in 2000, dropping back to the 1970-1975 level (Table 6.4). The rate of growth would not reach this level by 2000 if fertility decline were to start earlier or if the rate of decline were to be higher than is assumed under Series  $B_3$ . Series  $C_3$  and  $D_3$  demonstrate the effects of a more pronounced decline in fertility or the rate of growth and it will be seen from Table 6.4 and figure 6.2, that the higher the rate of decline in fertility, the lower would be the resulting RNI as the projection progressed. If the total fertility ratio could be reduced to about 4.0 by 2000, the RNI would fall to the level prevailing in the late 1950's, and, if fertility declined markedly between 1985 and 2000 as postulated in Series  $D_3$ , the RNI would decrease by the end of the century to below the estimated RNI of 2.3 per cent in the 1940's. It must also be noted that the crude birth rates decline much more rapidly in Series  $C_3$  and  $D_3$  than in the other projections. All of this reinforces the conclusion reached in the preceding section that under all assumptions of fertility decline, population growth rate will be positive but its rate of change is dependent on the magnitude and time span of fertility change.

**Age Structure.** A knowledge of the shape of the age structure is essential for an understanding of future trends in vital rates and other demographic variables because it is the major determinant of these parameters. However, the age distribution of a population at a specific point in time is itself the produce of the past trends in fertility and mortality. The age structure is therefore of a particular interest to both researchers and development planners. Different sets of population projections provide a means of examining some of the major causes of shifts in the age structure as the population grows.

It will be seen from Table 6.5 that the estimated proportion of the population under 15 years of age in 1960 increased from 44.0 per cent to 48.7 per cent in year 2000 under the assumption of constant fertility (Series  $A_3$ ) and a comparison of the latter figure with the corresponding projections in Series  $B_3$ ,  $C_3$  and  $D_3$  indicates the extent to which this segment of the age structure is affected by the differential declines in fertility. The decrease in the proportion under 15 years of age between 1985 and 2000 ranges from 4.0 percentage points in Series  $B_3$  to 11.1 in Series D; the proportion under 15 was reduced from

47.3 per cent in 1985 to 43.3, 39.9 and 36.2 in Series B<sub>3</sub>, C<sub>3</sub> and D<sub>3</sub> respectively by 2000. On the other hand, whilst the proportion of the population aged between 15 and 59 years decreased from 48.1 per cent in 1985 to 46.8 per cent in Series A<sub>3</sub> by the year 2000, the corresponding proportions in Series B<sub>3</sub> are 51.8 and 58.3 per cent for Series D<sub>3</sub>. A similar pattern is observed in the older age groups (i.e. 60 years and over) though the changes are not so marked as in the central age groups (i.e. 15-59 years).

TABLE 6.5. – ESTIMATED AND PROJECTED PER CENT DISTRIBUTION OF THE POPULATION OF GHANAIAN ORIGIN BY BROAD AGE GROUP: 1960-2000

Age and Series	1960	1965	1970	1975	1980	1985	1990	1995	2000
Under 15 years									
Series A <sub>3</sub>	44.0	44.9	45.6	46.3	46.8	47.3	47.8	48.3	48.7
B <sub>3</sub>	44.0	44.9	45.6	46.3	46.8	47.3	46.9	35.5	43.3
C <sub>3</sub>	44.0	44.9	45.6	46.3	46.8	47.3	46.3	44.0	39.9
D <sub>3</sub>	44.0	44.9	45.6	46.3	46.8	47.3	45.8	42.3	36.2
15-59 years									
Series A <sub>3</sub>	51.4	50.5	49.8	49.0	48.6	48.1	47.6	47.7	46.8
B <sub>3</sub>	51.4	50.5	49.8	49.0	48.6	48.1	48.5	49.7	51.8
C <sub>3</sub>	51.4	50.5	49.8	49.0	48.6	48.1	48.9	51.1	54.9
D <sub>3</sub>	51.4	50.5	49.8	49.0	48.6	48.1	49.4	52.7	58.3
60 years and over									
Series A <sub>3</sub>	4.6	4.6	4.6	4.7	4.7	4.6	4.6	4.5	4.4
B <sub>3</sub>	4.6	4.6	4.6	4.7	4.7	4.6	4.7	4.8	4.9
C <sub>3</sub>	4.6	4.6	4.6	4.7	4.7	4.6	4.8	5.0	5.5
D <sub>3</sub>	4.6	4.6	4.6	4.7	4.7	4.6	4.8	5.0	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Source: Appendix VII: Tables 27, 30, 33 and 36 [Gaisie 1973].									

The shifts in the age structure as indicated by the projections under varying fertility assumptions demonstrate the effect of changes in fertility on the age distribution of a population; the extent of transformation of the age structure within a specific period depends largely on the rate of change in fertility. For example, under Series D<sub>3</sub> the proportion of the population under 15 years would be about 36.0 per cent in year 2000 and the age group 15-60 years would increase by 10.2 percentage points from the 1985 level. But the figures in other series show that the proportion under 15 would not fall below 40 per cent in the terminal year and that under unchanging fertility conditions (Series A<sub>3</sub>) nearly half of the population would be under 15 by the end of the century (Table 6.5). Thus, unless rapid decline in fertility sets in very soon, Ghana's population (i.e. Ghanaian origin population) would become much younger as we progress towards the year 2000.

The effect of changes in mortality on the age structure, on the other hand,

would be negligible. This is demonstrated in Table 6.5 (a) where the age structures generated under the same fertility but different mortality conditions are compared with each other. Thus, the changes in the age structure would be quite independent of the rates of improvements in the expectation of life at birth, and consequently any attempt to minimize the adverse effects of an age structure with about 50 per cent of the population under 15 should be directed towards fertility.

TABLE 6.5 (a). – ESTIMATED AND PROJECTED PER CENT DISTRIBUTION OF THE POPULATION OF GHANAIAN ORIGIN BY BROAD AGE GROUPS: 1960-2000

Age and Series	1960	1965	1970	1975	1980	1985	1990	1995	2000
Under 15 years									
Series A <sub>1</sub>	44.0	44.9	45.6	46.2	46.5	46.9	47.3	47.8	48.2
A <sub>3</sub>	44.0	44.9	45.6	46.3	46.8	47.3	47.8	48.3	48.7
C <sub>1</sub>	44.0	44.9	45.6	46.2	46.5	46.9	45.9	43.5	39.4
C <sub>3</sub>	44.0	44.9	45.6	46.3	46.8	47.3	46.3	44.0	39.9
15-59 years									
Series A <sub>1</sub>	51.4	50.5	49.8	49.1	48.8	48.5	48.1	47.8	47.5
A <sub>3</sub>	51.4	50.5	49.8	49.0	48.6	48.1	47.8	47.2	46.8
C <sub>1</sub>	51.4	50.5	49.8	49.1	48.8	48.5	49.5	51.7	55.5
C <sub>3</sub>	51.4	50.5	49.8	49.0	48.6	48.1	48.9	51.1	54.9
60 years and over									
Series A <sub>1</sub>	4.6	4.6	4.6	4.7	4.6	4.6	4.5	4.5	4.4
A <sub>3</sub>	4.6	4.6	4.6	4.7	4.7	4.6	4.6	4.5	4.4
C <sub>1</sub>	4.6	4.6	4.6	4.7	4.6	4.6	4.7	4.8	5.1
C <sub>3</sub>	4.6	4.6	4.6	4.7	4.7	4.6	4.7	4.9	5.2
Source: Appendix VII Tables 3, 9, 27 and 33 [Gaisie 1973].									

Historical experience has shown that fertility declines could be brought about by socio-economic changes even before family planning programmes begin to have any significant effect on the birth rate. Cases in point are Hong Kong, Singapore, South Korea, Taiwan, Ceylon, Malaysia, Costa Rica and several of the West Indies (see Kirk 1969: 79ff). The majority of these countries are said to have exhibited a common characteristic of a period of "... The introduction of family planning programmes appears in each case to have accelerated a fertility decline already under way" (U.N. 1972: 63). It has been observed that the threshold zone(1) for fertility decline in Asian countries has been substantially lower than that in Latin America; the former experienced the onset of fertility decline with per capita incomes of about \$200 as compared with an average of \$300 for Latin America. In Ceylon and South Korea, the onset of fertility

(1) The 'Threshold Zone' refers to the level of development at which birth rates have empirically begun to decline. [U.N. Population Bulletin no. 7, 1963].

decline occurred at per capita income of about \$125 (Kirk 1971: 142-3). If there is such a strong link between income and fertility, and experience in other countries is indicative of what may occur in Africa, then Ghana with a per capita income of more than \$200 (1) should have entered the threshold for fertility decline. It appears therefore that the relationship between income and onset of fertility decline is a very weak one and that Ghana has not achieved the socio-economic conditions that have historically engendered fertility declines. However, a sustained investment in education and other spheres of economic development is most likely to bring about some amount of reduction in fertility, at least at the early phase of the fertility transition. On the other hand, economic stagnation and political instability may delay the onset of fertility decline and it is not unlikely that the fertility level will be raised by general improvements in health and hygienic standards. It is therefore difficult to forecast the 'take-off' point for fertility decline in Ghana. Nevertheless, the possibility that changes in social and economic institutions may trigger off a decline in fertility before the full impact of the family planning programme is felt and is incorporated in a new set of population projections which are compared with those presented above (Table 6.5 (b)).

TABLE 6.5 (b). – PROJECTED POPULATION OF GHANAIAAN ORIGIN, SELECTED YEARS 1975 TO 2000 (NUMBERS IN THOUSANDS)

Year	Series B <sub>3</sub>	Series B <sub>32</sub>	Series C <sub>3</sub>	Series C <sub>32</sub>	Series E <sub>3</sub>	Series F <sub>3</sub>
1975	9,083	9,083	9,083	9,083	9,083	9,083
1980	10,682	10,568	10,682	10,510	10,623	10,623
1985	12,684	12,299	12,684	12,107	12,414	12,414
2000	20,207	19,369	19,079	17,903	18,926	17,532
Rate of Natural Increase (Per Cent)						
1975-2000	3.05	3.05	3.05	3.05	3.05	3.05
1975-1980	3.24	3.02	3.24	2.91	3.13	3.13
1980-1985	3.43	3.03	3.43	2.82	3.11	3.11
1985-1990	3.25	3.04	3.06	2.74	2.96	2.77
1990-1995	3.10	3.04	2.72	2.63	2.82	2.43
1995-2000	2.95	2.98	2.37	2.44	2.64	1.69
Year and Age	Population in Broad Age Groups (Per Cent)					
2000						
Under 15 years	43.3	42.7	39.9	39.1	40.8	36.1
15-59 years	51.8	52.1	54.9	55.4	53.9	58.2
60 years and over	4.9	5.2	5.2	5.5	5.3	5.7

(1) Ghana's per capita income was \$245 in 1968 [see World Population data sheet 1968: 17].



The first two of the new set of projections (i.e.  $B_{32}$  and  $C_{32}$ ) were calculated under the same fertility and mortality assumptions as in Series  $B_3$  and  $C_3$  except that the decline in fertility would begin in 1975 instead of in 1985. In the other two projections (i.e.  $E_3$  and  $F_3$ ), the total fertility of 6.9 was assumed to decline slightly to 6.7 between 1975 and 1980 and then to 6.4 between 1980 and 1985. For the remainder of the century, the fertility ratio would decline linearly by 28 per cent in series  $E_3$  and 42 per cent in series  $F_3$ . It will be seen from Table 6.5(b) that the onset of fertility decline in 1975 would yield a population of about 19.4 million in series  $B_{32}$  and 17.9 in series  $C_{32}$ , implying that if fertility were to decline according to the assumptions stipulated above, the population of Ghanaian origin in the year 2000 would be smaller by 800,000 in series  $B_{32}$  and by 1.2 million in series  $C_{32}$  than is anticipated under series  $B_3$  and  $C_3$  respectively. Under series  $E_3$  and  $F_3$ , the total population would increase to 18.9 million and 17.5 million respectively. A comparison between these figures and those computed under the assumption that a decline in fertility would start in 1985 (i.e.  $B_3$  and  $C_3$ ), shows a significant achievement in the reduction of the size of the population in terms of absolute numbers, especially when series  $A_3$  figures for 2000 are compared with that of series  $E_3$  or  $F_3$ . However, the figures presented in Table 6.5(b) indicate that whatever fertility assumption proves to be realistic in the future the population would nearly double (Series  $F_3$ ) or more than double (Series  $B_3$ ) between 1975 and 2000 and that unless there is a steep decline in fertility in the years following 1985 as assumed under Series  $F_3$  and  $C_3$ , the doubling time would be reduced to between 20 and 23 years ( $A_3$ -Table 6.5,  $B_3$ -Table 6.5(b)).

The second important point to note is that the future rate of growth will depend to a larger extent on the magnitude of the rate of decline in fertility than on the onset of fertility decline. For example, it is only under series  $F_3$  (i.e. total fertility ratio of 6.9 falling to 6.4 in 1985 and then declining by 42 per cent by 2000) that the rate of growth would decrease to less than 2 per cent per annum in the year 2000 (i.e. 1.7 per cent). It will also be seen from Table 6.5(b) that a marked transformation of the age structure can only be brought about by a fairly steep decline in fertility and this is demonstrated by the fact that it is only under series  $F_3$  that the proportion under 15 years of age could be reduced to about 36 per cent in the year 2000. But it is very doubtful if fertility reduction of the magnitude as stipulated under series  $F_3$  will be achieved by the turn of this century.

The inevitable conclusion of the above analysis suggests that Ghana's population as it exists today has a high growth potential inherent in the age structure and hence the rapid expansion of the population will continue for the remainder of the century unless a marked decline in fertility sets in within the next few years. It is important to bear in mind that the immediate benefits of declines in fertility are relatively small and it takes a fairly long time before the rapid growth of the population slows down. Though Japan's fertility reached

replacement level in 1955, it has been estimated that the population will continue to grow by about one million persons per year and that it will not stop growing until about the year 2015 (Avery and Freeman 1970: 1-4). It has also been estimated that an immediate fertility decline to replacement level in developing countries would be accompanied by an ultimate population increase of two thirds before growth would cease (Keyfitz 1971: 83-9). Thus, if Ghana's fertility were to drop to the ultimate replacement level in 1990, her population would continue to grow until 2050. However, the examination of the population situation in the next century is beyond the scope of this monograph and a discussion of some aspects of the social and economic implications of the rapid population growth as indicated by the population projections will be confined to the present century.

**Impact of Changes in Population Growth:** The social and economic gains from managing population growth rate through reductions in fertility can be measured in terms of their effect on certain key variables that affect total development and growth.

In this section, specific attention will be given to the effect of fertility changes on selected socio-economic factors. Most readily quantifiable effects are those on the demand for social services such as education and increased demand for employment as labour force changes take place. Equally important is the effect on economic indicators such as per capita national income, agricultural self-sufficiency. The extent of treatment of latter effects is minimal in this monograph (1).

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(1) Treatment of changes in per capita income with changes in fertility are subject to so many speculative assumptions, given the paucity and meaningfulness of national income statistics, that they will be foregone in this discussion. This decision does not mainly rest on the lack of data that Steuer (1973) bemoaned, but more so the usefulness of comparative changes in per capita income as an indicator of "well-being". Does the conclusion put by Usher, D. (1968) apply to Ghana when he wrote:

"Using Thailand as an example, this book shows that statistics like these may contain errors of several hundred per cent . . . the discrepancy is not due primarily to errors in data . . . the fault lies with the rules (of national income comparisons) themselves . . . which generate numbers that fail to carry the implications expected of them.

In Thailand I saw a people not prosperous by European standards but obviously enjoying a standard of living well above the bare requirements of subsistence. Many village communities seem to have attained a standard of material comfort at least as high as that of slum dwellers in England or America. But at my desk I computed statistics of real national income showing people of under-developed countries including Thailand to be desperately, if not impossibly, poor. The contrast between

*(See the rest of this note on following page).*

## A – Change in Fertility and the Demand for Education

*Fertility Change and Pre-school Age Population*

The age group 0-5 years has been defined as the pre-school age population (see UNESCO 1967: 55). Though this definition may not be quite applicable to an African society where universal primary school education is non-existent and one cannot therefore regard the 0-5 age group as pre-school population, we have, however, adopted it as a matter of convenience for the purpose of the following discussion.

The pre-school age population, as defined above, is expected to increase from about 1.3 million in 1960 to about 5.2 million, 3.8 million, 3.1 million and 2.4 million under series A<sub>3</sub>, B<sub>3</sub>, C<sub>3</sub> and D<sub>3</sub> respectively by the year 2000; whichever of the fertility assumptions happens to come closer to the "truth". Even under very rapidly declining fertility conditions (Series D<sub>3</sub>), the size of this age group in 2000 could not be reduced to anything smaller than the corresponding 1980 population unless fertility decline starts earlier than it is anticipated in the projections (Table 6.6). The other extreme condition (Series A<sub>3</sub>) indicates that there would be four times as many pre-school children in 2000 than there were in 1960 and that this age group would be doubling its size in less than 20 years (Table 6.6). Since it is unlikely that fertility could be reduced to more than one-half of its present value within the next twenty years, the size of the pre-school age population would most likely be in the neighbourhood of 2.0 mil-

TABLE 6.6. – ESTIMATED AND PROJECTED POPULATION OF PRE-SCHOOL AGE POPULATION (i.e. UNDER 6 YEARS) FOR GHANA: 1960-2000  
(NUMBERS IN THOUSANDS)

Year	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1960	1,252	1,252	1,252	1,252
1965	1,482	1,482	1,482	1,482
1970	1,721	1,721	1,721	1,721
1975	2,019	2,019	2,019	2,019
1980	2,400	2,400	2,400	2,400
1985	2,881	2,881	2,881	2,881
1990	3,490	3,208	3,060	2,911
1995	4,257	3,508	3,115	3,024
2000	5,221	3,828	3,094	2,360

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what I saw and what I measured was so great that I came to believe that there must be some large and fundamental bias in the way income statistics are compiled. For instance, if the figure of \$40 for Ethiopia means what it appears to mean, namely that Ethiopians are consuming per year an amount of goods and services no larger than could be bought in the U.S. for \$40, then most Ethiopians are so poor that they could not possibly survive let alone increase in numbers" (As quoted by Bauer, P.T. 1974).

lion in 1975 and would probably increase to between 3.1 million (Series C<sub>3</sub>) and 3.5 million (Series A<sub>3</sub>) by 1990, indicating once more a doubling of this population in less than twenty years. The impact of this rapid growing population on the limited health, social and educational resources of the country cannot be overemphasized: More important perhaps is the adverse effect it would have on the number of adult females who, all things being equal, would be competing with their male counterparts in the employment market if they were not fully occupied with child-caring and related domestic activities<sup>(1)</sup>. Nurseries and kindergartens may help to ease the situation to a considerable extent, but it must be remembered that these services will have to be paid for and the type of infant and child institution which would cater for a wide spectrum of families and not only those of the elite still has to be worked out. In the new proposed system of education for Ghana, an 18-24 months programme of kindergarten school has been recommended for all children aged between four and six years (see *Legon Observer*, Vol. VII, No. 12, 1972: Supplement). The capability of Ghana to undertake such a comprehensive programme within the limits of available resources may be inferred from the *Legon Observer's* editorial comment on the proposal:

"This is quite a sound principle in theory, because it is obvious that the kindergarten programme is advantageous, but has in the past been available only to children of well-to-do parents in the urban areas; . . . But in our present circumstances, what is desirable may not be easily attainable. *Are we sure that we have the machinery, the funds and the trained personnel to undertake this delicate assignment?* (*The Legon Observer* 1972, Vol. VII, No. 12: 273)."

It is equally doubtful whether the available resources could support countrywide nurseries to take care of the 0-5 year olds.

### *Fertility Change and the Primary School Age Population (i.e. 6-12 years)*

The age limits employed here are deliberately chosen in order to enable us to relate our discussion to the proposed new system of education for Ghana (see *The Legon Observer* 1972: Supplement). According to the proposed system, formal education will start at the age of 6 years and, at the end of the 7th year (i.e. Primary 7), a child will be eligible to take the common entrance examination for entry into secondary school. Thus, assuming that a majority of the children would start the second cycle education from Primary 7, the primary school age population will be composed mostly of 6-12 year olds.

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(1) There is a growing body of literature that attempts to demonstrate an inverse relationship between fertility and women's employment activities (see Mason, K., *et. al.*, 1971 and for Ghana see Semanya, K.A., 1974).

In 1960 there were about 1.1 million children in the primary school age groups and the estimated number in 1970 was nearly 1.5 million, an increase of 18 per cent within a decade. According to the projected population of primary school age children, the size of this age group would nearly double by 1980 and, in the second half of the 1980's and early 1990's, there would be almost 3 children for each child in the primary school age group during the 1960's (Table 6.7). Under series  $A_3$  and  $B_3$ , the age group would increase to between 3.5 and 4.6 millions during the last five years of this century (Table 6.7). Even under the conditions of rapidly declining fertility (i.e. series  $C_3$  and  $D_3$ ), the size of this population would not be anything less than from 3.1 to 3.5 millions during the 1990's, and, like the pre-school age population, it would be doubling itself in less than twenty years (Table 6.7).

In 1960, 3,514 public primary schools were functioning in Ghana, whilst the middle schools numbered 1,234. The combined enrolment of both primary and middle public schools accounted for 96 per cent of the total public school enrolment, with 72 per cent in primary and 24 per cent in middle schools(1). Primary school enrolment increased by 30 per cent in 1961 as a result of the newly enacted free and compulsory primary education(2). The growth went on for five years until in 1965/66, over 1,137,000 pupils were in the primary grades after which it had gradually declined (see Figure 6:3)(3). The primary school enrolment rates for males and females declined from 97.3 per cent and 74.7 per cent to 82.3 and 66.0 per cent respectively in the two years following 1965 (Abbey 1970: Appendix I) and in 1965 the enrolment rate for both sexes was about 74.0 per cent (Jones 1972: 297). If the enrolment rate were to remain at 70.0 per cent from 1970 to 2000 (Jones 1972: 299), the number of children who would not be able to attend primary school would increase from about 530,000 in 1975 to 917,000 in 1990 and by 2000 the number would have climbed to 1.4 million in series  $A_3$ , 1.2 million in series  $B_3$ , 1.1 million in series

(1) The 1960 *Population Census Advanced Report* Vol. II, Table 14, reported a total of 740,101 students in schools with 610,260 being in public schools. Since no reliable estimates of private schools were available, the difference in the two figures may be inferred to reflect the magnitude of enrolment in private schools. In general, it can be safely assumed that the private schools in Ghana constitute but a small fraction of the total educational institutions.

(2) As a result of the *Educational Act of 1960*, the free and compulsory education law was reflected in the tremendous increase in primary class one. In 1960/61 there were about 107,000 students in primary class one which increased by more than 100 per cent (to 232,000) in 1961/62. The increase continued until 1965/66 when there was a drop in all regions as a result of the cut in the educational grant.

(3) The same growth pattern is observed for both sexes. However, the interesting point of figure 6:3 is that the girls as a per cent of boys enrolment (in brackets) went up from 60 per cent in 1960 to 80 per cent in 1966/67 and held on to that level for the remaining years of that decade.

C<sub>3</sub> and 936,000 in series D<sub>3</sub>. It must be noted that unless enrolment rates are raised well over 70.0 per cent, Ghana would not be able to provide primary education for nearly one million of the primary school age population, even if her fertility level were more than halved by the year 2000 (Series D<sub>3</sub>).

TABLE 6.7. – ESTIMATED AND PROJECTED POPULATION OF PRIMARY SCHOOL AGE CHILDREN (6-12 YEARS) IN GHANA: 1960-2000 (NUMBERS IN THOUSANDS)

Year	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1960	1,081	1,081	1,081	1,081
1965	1,249	1,249	1,249	1,249
1970	1,484	1,484	1,484	1,484
1975	1,765	1,765	1,765	1,765
1980	2,094	2,094	2,094	2,094
1985	2,519	2,519	2,519	2,519
1990	3,055	3,055	3,055	3,055
1995	3,735	3,539	3,436	3,337
2000	4,591	3,907	3,547	3,187

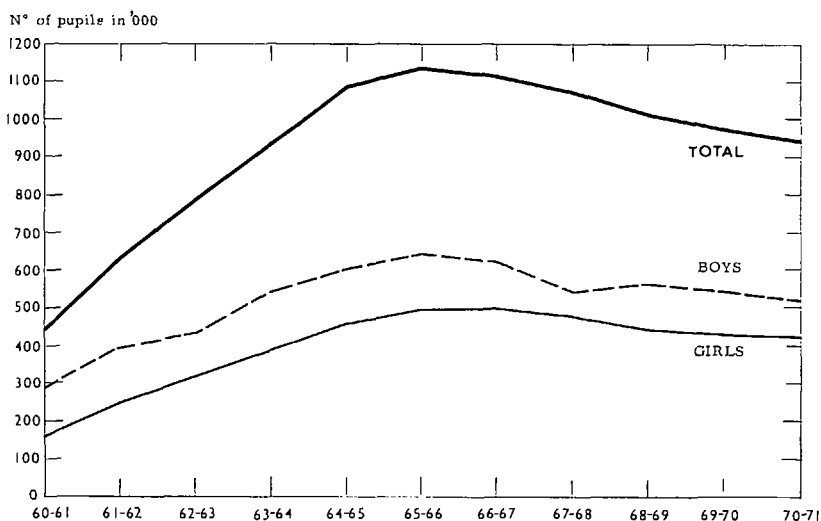


Figure 6.3. – Public primary school enrolment by sex, Ghana – 1960/61 – 1970/71

Source : Ministry of Education, Accra

\* The girls total enrolment as a percentage of boys.

In estimating the social costs of education, one needs to assess the changes in enrolment by grade (i.e. estimate the drop-out), the teacher-student ratio at each educational level and the total governmental costs per student per year. Since the educational system is composed of an inter-dependent linkage of the

various levels(1), the swelling of the entrants into the primary school classes will have significant repercussions throughout the whole system. By this is meant that if the entrants into the primary schools are increasing at a faster rate than the output of teacher training institutes (properly adjusted for replacement levels due to resignation or retirement), then the student-teacher ratio is affected with the subsequent probable negative effect on the "quality of education". Expansion in primary enrolments not only requires more teachers but more secondary school places and subsequent entrants into the teaching profession (of course, with proper time lags). The demand for physical facilities increases and so do the operating supplies. All of which have significant budgetary repercussions. Let us briefly outline such repercussions.

In 1970/71, Ghana had 7,008 primary institutions, 3,546 middle schools, 125 secondary schools, 71 teacher training schools and 6 higher education institutions. The number of pupils per teacher was 28.9 for primary, 31.3 for middle schools, 18.2 for secondary, 15.1 for teacher training and 6.0 for higher education. Based on the government's estimates of recurrent costs only, the nation spent ₵25.4 per student at the primary level, ₵28.1 at middle school level, ₵263.6 at secondary school level, ₵515.8 at teacher training level and ₵3796.6 at the higher education level(2). The total educational system catered for 69.8 per cent of the school age population at the primary school level, 62.7 per cent at the middle school level, 4.7 per cent at the secondary school level (6.0 per cent for secondary 1-5 and only 1.1 per cent for secondary 6-7, hence making 4.7 per cent for secondary 1.7), 2.4 per cent at the teacher training level and 0.8 per cent at the university level.

In terms of educational facilities and services essential for the maintenance of the educational system at the enrolment rate of 70.0 per cent with a pupil/teacher ratio of 28.0(3) (Jones 1972: 299), Ghana would need about 114,775 primary school teachers by the year 2000 (Series A<sub>3</sub>), 97,675 under Series B<sub>3</sub>, 88,675 under Series C<sub>3</sub> and 79,675 under Series D<sub>3</sub>. In order to maintain the ratio of pupils per institution as it existed in 1966/67 (i.e. 141 per school),

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(1) The educational system is viewed as an organic whole whose main input is school age population and whose output is graduates. To sustain a flow of "needed" graduates to the economy, -- be they at secondary, professional or university levels -- a variety of activities and programmes must be undertaken within the system with various leadtimes relative to time (+), a time of "senior" level graduation which is steadily advancing. Each educational section within the whole requires, in turn, its own specialized inputs, as well as the complementary inputs of specialized sections such as educational materials, administrative and supervisory services. (For further discussions of such aspects of the total educational system and how to plan for it, see among others, David, A.S., 1966, and UNESCO, 1964 especially Chapters IV, VIII and IX).

(2) The sources of the expenditures were obtained from the Planning Unit within the Ministry of Education, Government of Ghana.

(3) The 1966/67 rate was 28.8 -- Computed from 1966/67 Education Statistics, Vol. I, Ministry of Education. The 1970/71 figure noted above, however, was 28.9.

the number of primary schools which would be needed would be between 23,000 (Series A) and 16,000 (Series D) by 2000.

The number of schools needed would be reduced if the double shift system were used, but the effectiveness of this system needs further investigation because it "was terminated in some schools" during the 1960-1965 period (Abbey 1970: 2).

Secondly, the notion that the rapidly increasing number of pupils would be 'swamped' by a sharp rise in the enrolment rates has been debunked by the findings of a study undertaken by Jones. He observed that, even in a realistic situation in which the enrolment rate reaches 95 per cent within a period of 30 years, "... only a quarter of the increase in enrolment could be attributed solely to the rise in enrolment rates, and this would be exceeded by the rise caused by demographic trends alone (31 per cent of the total increase) and by demographic trends and enrolment rate trends combined (42 per cent)" (see Jones 1972: 296).

To meet the expanding demand for primary education, in the light of the government's 1961 *Educational Act* and the demographic plus economic realities, the government's development and current expenditures will have to increase substantially<sup>(1)</sup>. Applying the per student development and recurrent costs to the primary school age enrolled population, which is assumed to be only 70 per cent of the total school age population, one would note that, at 1970 cost basis, the recurrent total costs could go up from about 40 million cedis in 1970 to 86 to 123 million by the year 2000, depending on which projection series are used — see Table 6.8. Applying the same assumption for development expenditures<sup>(1)</sup>, the 3.5 million cedis estimated for 1970/71 of Table 6.8 could well reach the 7.6 to 11.0 million cedis by the year 2000, depending again on which projection series are used.

Comparing the cost estimates of Table 6.8 and 6.9 under varying assumptions of fertility rates reveals the following:

- 1) No significant difference will be observed before the year 1995 when the beginning of the decline in fertility in 1985 will be felt.
- 2) By the year 2000, the number of primary school students would be 1.4 million less under series D<sub>3</sub> as compared with series A<sub>3</sub> projections.

(1) The development and current expenditure figures are based on 1970/71 estimates which were computed for a ten year period that covered both primary and middle schools years. Because of the change in the system and to keep the analysis consistent with the preceding projections, the expected expenditures have been assumed to be 70 per cent of the total primary and middle school "old system" accounting.

(2) These estimates are presented as only ball pack estimates since they do not reflect the needed adjustments due to inflation, age of current structures, etc. They should be treated only as indicators of differences in educational outlays associated with changes in fertility levels.



TABLE 6.8. – ESTIMATED AND PROJECTED RECURRENT COST OF  
PRIMARY EDUCATION, UNDER VARYING ASSUMPTIONS OF FERTILITY  
CHANGE, GHANA: 1970-2000

Year	Recurrent Expenditures (thousand cedis)			
	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1970	39,920	39,920	39,920	39,920
1975	47,479	47,479	47,479	47,679
1980	56,329	56,329	56,329	56,329
1985	57,761	67,761	67,661	67,761
1990	82,180	82,180	82,180	82,180
1995	100,762	95,199	92,428	89,765
2000	123,496	105,098	95,143	85,730

Source: Table 6.7 and cost estimates of Ministry of Education.

TABLE 6.9. – ESTIMATED AND PROJECTED DEVELOPMENT EXPENDITURES  
FOR PRIMARY EDUCATION UNDER VARIOUS ASSUMPTIONS OF FERTILITY  
CHANGE, GHANA: 1970-2000

Year	Development Expenditures (thousand cedis)			
	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1970	3,562	3,562	3,562	3,562
1975	4,236	4,236	4,236	4,236
1980	5,026	5,026	5,026	5,028
1985	6,046	6,046	6,046	6,046
1990	7,332	7,332	7,332	7,332
1995	8,964	8,596	8,346	8,009
2000	11,018	9,377	8,513	7,649

Source: Table 6.7 and expenditure estimates from Ministry of Education

This difference may mean a reduction in anticipated recurrent expenditures of 37.8 million cedis and a 3.4 million cedis reduction in development expenditures (a total "gain"(1) of over 40 million cedis due to the decline in fertility).

(1) The use of the word "gain" may be confusing a bit. What is intended to denote here is the "saving" due to the difference in the projected expenditure levels under the various assumed changes in fertility levels. The actual "gain" to society is the return from investing such differences in other "positive return" generating investments. If such savings are not diverted to "other" investment outlays, they may be profitably used to improve the "quality" of primary education. Such moves are probable as one notes the "steady replacement of under-qualified teachers with Certificate A teachers in primary and middle schools", and the increase in the number of graduate teachers in the secondary and technical

(see the rest of this note on following page)

TABLE 6.10. – RETENTION OF PUPILS BY GRADE AT THE PUBLIC PRIMARY SCHOOL, GHANA, 1960/61, 1970/71

Year	Primary class enrolment(1)						Percentage to transfer from Class One to Class Six
	Class One	Class Two	Class Three	Class Four	Class Five	Class Six	
1960/61	107,928	80,871	72,918	65,886	59,443	55,071	
1961/62	231,775	106,608 (98.8)	89,396 (110.5)	79,486 (109.0)	70,460 (106.9)	64,037 (107.7)	
1962/63	236,748	192,836 (83.2)	103,221 (96.8)	87,694 (98.1)	77,323 (97.3)	70,266 (99.7)	
1963/64	270,436	206,227 (80.3)	182,213 (94.3)	103,307 (100.0)	87,614 (99.9)	78,841 (101.9)	
1964/65	284,687	225,531 (83.4)	196,189 (95.1)	170,889 (93.8)	101,466 (98.2)	87,754 (100.2)	
1965/66	272,077	224,172 (78.7)	203,882 (90.4)	182,579 (93.1)	156,931 (91.8)	98,394 (97.0)	(91.2)
1966/67	221,559	202,096 (74.3)	195,564 (87.2)	183,495 (90.0)	165,962 (90.9)	148,167 (94.4)	(63.9)
1967/68	214,115	176,768 (79.8)	182,530 (90.3)	178,428 (91.2)	164,475 (89.6)	156,207 (94.1)	(60.8)
1968/69	199,263	167,526 (78.2)	162,525 (91.9)	167,831 (91.9)	162,178 (90.9)	156,134 (94.9)	(57.7)
1969/70	203,592	161,660 (81.1)	154,539 (92.2)	151,839 (93.4)	153,448 (91.4)	150,551 (92.8)	(52.9)
1970/71	207,885	165,262 (81.2)	149,570 (92.5)	142,216 (92.0)	139,571 (91.9)	142,998 (93.2)	(52.6)
(1) Total students including both boys and girls. The number in brackets reflect the percentage continuation rate of the same class a year later.							
Source: Computed from Ministry of Education Statistics sources.							

institutions. For example, during the four years 1966/67 to 1970/71, secondary enrolments have grown by 25 per cent (10,000), teacher training by 19 per cent (3,000) and university enrolments by 6 per cent (300), but primary education has fallen by 1 per cent (10,000). During the same period there has also been an increase in the recurrent cost of education from about ₵67 m to ₵10 m. This increase has been partly caused by the increase of 15 to 20 per cent in teachers' salaries recommended by the "Mills-Odoi" Commission. Government expenditure on education has been growing steadily. A cut in primary one intake, however, will not have an immediate effect on the increase in cost just as a cut in the fertility rate will take quite a time to effect changes on society.

- 3) The decline in the rate of growth of number of primary school entrants will not be only reflected in the budgetary differences, but throughout the educational system as it affects the number of needed primary school teachers. Such differences will also not be felt before 1995, by the year 2000, the difference between the number of teachers needed to meet the series  $A_3$  versus series  $D_3$  levels of enrolment could well reach the 50,000 mark.
- 4) Another important, yet often neglected economic consequence of such changes is the effect that reduced numbers have on the "economic wastage of foregone investment in education due to drop-out rates between grades". As Table 6.10 indicates, during the 1960/61 to 1970/71 period, the retention rate of the same cohort of students going through the primary class one through sixth dropped from 91.2 per cent in 1965/66 to 52.6 per cent in 1970/71. Assuming that one were to accept UNESCO's definition of functional literacy to mean at least five years of schooling, then any person who begins the schooling cycle at class one but drops out before completing class five, leads to a total societal loss equivalent to the total cost spent on the drop-outs from the system.
- 5) Thus, in view of the substantial increases in government expenditure which would be needed to keep the same proportion of children of primary school age population in the schools, it is very unlikely that Ghana will achieve universal primary education before the end of the century. A sharp decline in fertility in the immediate future is absolutely necessary to keep the problem within tolerable limits in the coming decades and it must be borne in mind that a half developed primary school education would accentuate both class and ethnic differences.

#### *Fertility Change and the Secondary School Age Population (13-19 years)*

This age group encompasses those children aged 13 to 19 years who would be knocking at the doors of the secondary schools or would be pursuing the proposed two-year continuation programme. One might like to examine the two major segments of this population separately (i.e. those who would enter secondary school and those who would follow the two-year continuation programme after Primary 7) but there is a large amount of uncertainty as regards the proportion of this population who would be able to obtain admission into secondary schools after the six-year primary schooling, the proportion who would struggle through the continuation programme into the realm of second cycle education and the proportion who would fail to acquire this education. For the purpose of this brief discussion, we intend to concentrate on the broader dimensions of the demographic impact on the size of the population which would be demanding post-primary schooling, including second cycle education, in the future.

It is obvious from the findings presented above that great pressure is being exerted on the secondary schools and the commercial and technical institutions by the rapidly growing primary school age population. At the same time, in no year has the enrolment rate for secondary schools excluding commercial/technical institutions, reached 10 per cent of the relevant age group for both males and females combined and during the 1969/70 academic year, an estimated number of 200,000 potential candidates were competing for about 11,000 secondary school places (Abbey 1970:3).

It appears that the future is going to be even more gloomy. The secondary school age population as defined here has been growing at a rate of 3.5 per cent per year since 1970 and this rate would decline to 4.0 per cent per year in the 1990's (Series A<sub>3</sub>) and, during these years, even the very rapidly declining fertility model (Series D<sub>3</sub>) would still be accompanied by an annual rate of growth of not less than 3.5 per cent. It can be seen from Table 6.11 that the impact of the fertility decline would not be felt for fifteen or more years following its inception and that there would not be any significant differences between the size of the projected secondary school age populations in the four series by the year 2000. The population of the age group under discussion is estimated to increase from 1.13 million in 1970 to about between 3.27 million (Series D<sub>3</sub>) and 3.41 million (Series A<sub>3</sub>) in 2000, an increase of between 289 per cent and 327 per cent. Improvements in enrolment rates at the secondary level of education will depend largely on the proportion of this population which the government can afford to sponsor and the proportion of private individuals who can shoulder the responsibility without external help.

TABLE 6.11. – ESTIMATED AND PROJECTED POPULATION OF SECONDARY SCHOOL AGE CHILDREN (13-19 YEARS) GHANA: 1960-2000  
(NUMBERS IN THOUSANDS)

Year	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1960	859	859	859	859
1965	978	978	978	978
1970	1,131	1,131	1,131	1,131
1975	1,332	1,332	1,332	1,332
1980	1,604	1,604	1,604	1,604
1985	1,904	1,904	1,904	1,904
1990	2,293	2,293	2,293	2,293
1995	2,783	2,783	2,783	2,783
2000	3,407	3,341	3,307	3,272

In 1970/71, the Government of Ghana's estimated capital on development expenditures on secondary education amounted to ₵2.9 million while the recurrent expenditures approached the ₵13.9 million mark. Using these estimates and the total number of enrolment of 52,852 students, one arrives at a per student

cost of 54.8 cedis for development outlays and 263 cedis for recurrent costs(1). Assuming no further increases in such outlays, and no greater proportion of the total school age population that will be admitted to secondary education (10 % only), the recurrent plus development costs may rise from C36.1 million in 1970 to C108.8 million in year 2000 under Series A<sub>3</sub> fertility assumption. However, if fertility rates of Series D<sub>3</sub> are attained, the increase will be from C36.1 million in 1970 to C104.4 million or a difference of over C4.4. million – see Tables 6.12 and 6.13.

TABLE 6.12. – ESTIMATES AND PROJECTED RECURRENT COSTS OF SECONDARY EDUCATION UNDER VARYING ASSUMPTIONS OF FERTILITY CHANGE, GHANA 1970-2000

Year	Recurrent Total Costs (thousand cedis)			
	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1970	29,813	29,813	29,813	29,813
1975	35,111	35,111	35,111	35,111
1980	42,281	42,281	42,281	42,281
1985	58,189	58,189	58,189	58,189
1990	60,443	60,443	60,443	60,443
2000	89,808	88,069	87,173	86,250

Source: The enrolment estimates are based on 10 % of Table 6.11 while cost estimates are derived from Ministry of Education 1970-71 budget and enrolment figures.

TABLE 6.13. – ESTIMATED AND PROJECTED DEVELOPMENT EXPENDITURES FOR SECONDARY EDUCATION UNDER VARYING ASSUMPTIONS OF FERTILITY DECLINE, GHANA 1970-2000

Year	Development Expenditures (thousand cedis)			
	Series A <sub>3</sub>	Series B <sub>3</sub>	Series C <sub>3</sub>	Series D <sub>3</sub>
1970	6,300	6,300	6,300	6,300
1975	7,419	7,419	7,419	7,419
1980	8,934	8,934	8,934	8,934
1985	10,605	10,605	10,605	10,605
1990	12,772	12,772	12,772	12,772
1995	15,501	15,501	15,501	15,501
2000	18,977	18,609	18,420	18,225

Source: The enrolment estimates are based on 10 % of Table 6.11 while cost estimates are derived from 1970/71 Ministry of Education estimates and enrolment figures.

(1) The actual outlays are very difficult to estimate. For example, the Manpower Division of the Ministry of Planning (unpublished Statistics) reported a total enrolment of 62,500 students in 1972/73 and a total per student cost of 213.72 cedis (C140.90 recurring cost plus 36.27 cedis of indirect recurring costs while development cost per student was estimated at 34.77 cedis and 1.78 cedis for the direct and indirect components respectively).

The economic conclusions that may be drawn from the above analysis are similar to those drawn when considering the primary education outlays of the preceding section. It is of further interest to note here that Jones has estimated (1) that Ghana would be required to allocate between 9 per cent (on the basis of rising enrolment rates and declining fertility) and 11 per cent (on the basis of enrolment rates and constant high fertility) of her gross national product to primary and secondary education (Jones 1972: 300) and, considering the fact that no country in the world spends between 11 and 13 per cent of her GNP on education (including higher education), he doubted very much if Ghana could afford to meet the demand for primary and secondary education by her rapidly growing young population (Jones 1972: 300). That there is a great need for massive educational investments at the secondary school level cannot be over emphasized, and, in the light of Ghana's present economic conditions, a large proportion of children in the 13-19 age group will undoubtedly have to miss secondary education.

**B — Change in Fertility and the Demand for Employment** The demand for employment depends on the changes in the demographic structure of the growing population and the spatial displacement of such a population. It has often been argued, and at times promised in the national plans, that one of the social and moral obligations of a responsible government is to provide productive employment for both male and female adults in the working age population (2), and failure to do this creates all sorts of social and economic problems in the society. In 1960 about 6 per cent of the economically active population aged 15 years and over were reported as unemployed, the unemployment problem being more acute in the urban areas than in the countryside (3). There are strong indications that the proportion of unemployed among the economically active population has been rising since 1960. The estimated number of unemployed persons in 1968 ranged between 520,000 and 640,000, between about 16 and 19 per cent of the estimated economically active population of nearly 3.4 million in that year (Abbey 1970: 3). It should, however, be noted that the 1970 census disclosed a labour force of 3.3 million and with 648,829 persons reported as unemployed (excluding students, disabled and aged). Both the 1960 and 1970 Censuses showed that the unemployed rate for Ghana was 6.0 per cent per annum.

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(1) Estimates based on two series of projections, developed by Gaisie (1969), in which the decline in fertility was assumed to begin in 1975.

(2) The working age population is defined as the population aged between 15 and 64 years.

(3) There seems to be, in fact, an inverse relationship between the size of a town or locality and the incidence of reported unemployment (see Gaisie 1973: Chapter III).

It will be seen from Table 6.14 that the male labour force would double its size by 1985; increasing at a rate of 2.5 per annum from 1.9 million in 1975 to 2.5 million in 1985. It is important to note that the female labour force would nearly catch up with that of the males by 1985; growing at a faster rate of 3.8 per cent. Ghana's labour force would stand at nearly 5 million by 1985. And a constant annual rate of 6.0 per cent would yield an unemployed population of about 1.3 million by 1985. The job requirements of the fast growing labour force are putting more and more pressure on the employment market and there are instances in which the increasing number of armed robberies has been attributed to the demoralizing effects of unemployment in Ghana. The rapid increase of the population of working age persons is therefore of great importance to development planners as well as politicians.

The estimated working age population of about 3.4 million in 1960 is expected to reach nearly 4.8 million by 1975 and the 1960 figure would be slightly more than doubled by 1985. Even after 1985, the differences between the four series would be small indeed because the cohorts who would enter the labour market within the subsequent fifteen or more years would have already been born and the effect of fertility decline on the working age population would be virtually negligible unless a decline in fertility were to commence earlier than is assumed in the projections. In all the four series, the labour force would multiply by three and two-thirds between 1960 and 2000 (i.e. 3.1 million to 11.0 million); an increase of about 282 per cent within the forty year period (see Gaisie 1973: Appendix VIII Tables 27, 30 and 36); massive increases in the labour force would mean in effect that an annual increase of about three per cent or more in the number of jobs would be required if under-employment and unemployment were to be avoided. In addition, the rapidly growing labour force would call for extra capital to provide equipment and training for the additional workers in order to maintain the level of output per worker of the existing labour force whose productive capacity even now needs considerable improvement (see Gaisie 1971: 29). It must also be borne in mind that the education and training of the much needed high-level and middle-level personnel would entail a huge expenditure of public funds over a considerable length of time (1).

If any of the assumptions of declining fertility proved to be realistic, the labour force would grow less rapidly sometime during the early years of the next century, and once again, the rate of growth would be dependent on the extent to which fertility declined during the remainder of this century. If fertility did not decline appreciably in the foreseeable future, the unemployment problem would be carried over into the next century. A decline in fertility would also

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(1) The Manpower Division (1974) estimated that the per student cost for technical training institutions, including vocational training amounted to about 500 cedis per student during the 1972/73 year, whereas higher education cost per student was about 4,000 cedis.

bring in its trail an increasing number of women who would be seeking jobs outside the home, a phenomenon which would be associated with the liberation of the African woman from the drudgery of caring for and nursing children and also from injustices of the male-dominated society.

TABLE 6.14. — PROJECTED LABOUR FORCE BY AGE AND SEX: GHANA, 1970-1985\*

Age	1970	1975	1980	1985
<b>Males</b>				
15-19	164,191	157,840	160,564	159,673
20-24	268,139	292,024	306,425	351,283
25-29	262,132	296,749	342,538	399,615
30-34	224,910	257,211	294,025	343,069
35-39	191,559	216,848	249,169	286,464
40-44	160,861	182,033	206,755	238,825
45-49	132,910	151,249	172,035	196,751
50-54	107,016	122,396	139,933	160,364
55-59	83,436	95,785	110,292	126,918
60-64	60,505	70,747	82,267	96,017
65+	74,074	89,758	109,095	131,837
<b>Total</b>	<b>1,729,733</b>	<b>1,932,640</b>	<b>2,173,098</b>	<b>2,490,816</b>
<b>Females</b>				
15-19	153,791	152,001	159,710	160,635
20-24	201,856	251,861	315,555	401,338
25-29	181,399	229,589	298,865	372,827
30-34	169,296	211,190	265,879	328,327
35-39	149,002	183,459	228,488	276,371
40-44	132,999	160,766	194,004	231,968
45-49	111,480	134,783	161,623	191,647
50-54	94,052	111,896	133,203	157,033
55-59	72,895	85,621	100,371	117,983
60-64	53,830	64,136	76,918	91,460
65+	57,734	71,349	88,811	108,919
<b>Total</b>	<b>1,378,334</b>	<b>1,656,651</b>	<b>2,023,427</b>	<b>2,438,508</b>
* Source: Based on Projected Population of Ghanaian Origin (see Gaisie 1973: Appendix VII Tables 27, 30 and 36) and projected labour force participation rates [see de Graft-Johnson <i>et al.</i> ].				

A corollary effect of the changes in fertility and the population age structure and employment, is the effect of changes in fertility on the dependency ratio. Dependency ratio is a rough index of the proportion of the population which is non-productive (i.e. aged under 15 years and above 60 years) as compared with that of the productive population or the working age population (15-60 years). In 1960 the dependency ratio was estimated to be 95 (i.e. 95 de-



pendants per 100 potential workers) and this figure may be compared with ratios of 60 and 70 for the United Kingdom and France respectively in the same years. The projections indicate a rise in the dependency ratio from the 1960 level of 95 to 114 in 2000 in series  $A_3$  and a decline to approximately the level attained in France in 1960 would be possible only if fertility declined very rapidly to less than one-half its present value by the year 2000 (see Gaisie 1973: Appendix VII Tables 1-36).

Such a heavy dependency load may tend to retard economic advancement. The view that the dependency burden in developing countries could be lightened by putting children to work early and making old people continue to work as long as they are physically and mentally capable may be rebutted by the fact that in a non-traditional economy the productive contribution of children under 15 years and persons aged 60 years and over is insignificant.

**Conclusion.** The rapid increase in Ghana's population is engendering many social, economic and political problems, some of which were briefly discussed in this chapter. But one important aspect of the whole population problem is perhaps the awareness of the public and the government of this problem and the willingness of the individual to participate fully in the task of family planning and economic reconstruction, the twin problems which will occupy the minds of Ghanaians for the remainder of the 20th century.

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# APPENDIX-POPULATION PROJECTIONS

## PROJECTED POPULATION OF MALES SERIES A<sub>2</sub>

Age group	1960	1965	1970	1975	1980	1985	1990	1995	2000
0-4	534792.	640866.	740660.	868382.	1027928.	1229935.	1483021.	1798251.	2190501.
5-9	414398.	481073.	583449.	684284.	813109.	974056.	1178442.	1434885.	1754165.
10-14	345477.	398356.	464357.	565990.	666823.	795688.	957043.	1161895.	1418980.
15-19	296622.	335747.	388158.	453777.	554651.	655203.	783780.	944928.	1149755.
20-24	251838.	285907.	324624.	376513.	441578.	541395.	641400.	769672.	930164.
25-29	214906.	240862.	274484.	312892.	364270.	428883.	527679.	627396.	755374.
30-34	183208.	205003.	230677.	263983.	302170.	353193.	417432.	515569.	614926.
35-39	155000.	173918.	195468.	220991.	254022.	292052.	342868.	406843.	504410.
40-44	129699.	145819.	164480.	185919.	211278.	244096.	282015.	332714.	396423.
45-49	107017.	120484.	136318.	154822.	176056.	201228.	233828.	271703.	322112.
50-54	86079.	97681.	110783.	128343.	144433.	165324.	190194.	222438.	260018.
55-59	67466.	76539.	87643.	100343.	115330.	132875.	153272.	177721.	209305.
60-64	50309.	57548.	66053.	76543.	88496.	102710.	119481.	139174.	162932.
65-69	34897.	40120.	46593.	54304.	63711.	74580.	87677.	103278.	121721.
70-74	21229.	24916.	29263.	34717.	41162.	49141.	58551.	70027.	83883.
75-79	10760.	12763.	15450.	18703.	22732.	27613.	33776.	41247.	50446.
80 +	4362.	5547.	6935.	8770.	11087.	14074.	17912.	22953.	29426.
Total	2908059.	3343147.	3865396.	4507274.	5298836.	6282049.	7508372.	9040693.	10954542.

## PROPORTIONS IN BROAD AGE GROUPS

0-14	44.5	45.5	46.3	47.0	47.3	47.8	48.2	48.6	49.0
15-19	51.3	50.3	49.5	48.7	48.4	48.0	47.6	47.2	46.9
60 +	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.2	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D. Ratio	94.93	98.77	102.10	105.29	106.68	108.41	110.17	111.78	113.02
Bir. Rate		50.98	49.97	49.14	48.51	48.10	47.74	47.35	46.98
Dth. Rate		23.14	20.99	18.47	16.22	14.14	12.17	10.32	8.70
N.I. Rate		27.84	28.98	30.67	32.29	33.96	35.57	37.04	38.29
Increment		435089.	522249.	641877.	791563.	983213.	1236322.	1532321.	1913848.
P/C. Incr.		14.96	15.62	16.61	17.56	18.56	19.52	20.41	21.17

# PROJECTED POPULATION OF FEMALES SERIES A<sub>2</sub>

Age group	1960	1965	1970	1975	1980	1985	1990	1995	2000
0-4	535737.	629877.	726267.	848406.	1001501.	1194904.	1437125.	1738745.	2116072.
5-9	419078.	482753.	574334.	671420.	794990.	949924.	1145554.	1390619.	1696667.
10-14	348184.	402558.	465731.	556909.	654245.	778136.	933547.	1129860.	1375906.
15-19	297931.	338372.	392325.	455317.	546105.	643450.	767351.	922811.	1119578.
20-24	255455.	288606.	328756.	382375.	445118.	535510.	632743.	756593.	912162.
25-29	220158.	246187.	279076.	319044.	372334.	434925.	524918.	622112.	746031.
30-34	188750.	210903.	236778.	269548.	309390.	362505.	425008.	514766.	612146.
35-39	160033.	179614.	201627.	227515.	260211.	300015.	353043.	415641.	505356.
40-44	135206.	151353.	170731.	192695.	218510.	251104.	290847.	343772.	406455.
45-49	113070.	127175.	143107.	162331.	184108.	209770.	242174.	281796.	334545.
50-54	93926.	105252.	119053.	134775.	153666.	175142.	200535.	232647.	271984.
55-59	75679.	85552.	96550.	110039.	125363.	143800.	164886.	189923.	221648.
60-64	58330.	66319.	75710.	86341.	99244.	113992.	131827.	152384.	176936.
65-69	41878.	47894.	55211.	63946.	73782.	85767.	99620.	116525.	136189.
70-74	26921.	30977.	36136.	42518.	50050.	58656.	69265.	81722.	97109.
75-79	14358.	17044.	20166.	24198.	29097.	34975.	41869.	50500.	60841.
80 +	6581.	8101.	10033.	12461.	15570.	19533.	24556.	30848.	38952.
Total	2991275.	3418535.	3931589.	4559837.	5333283.	6292107.	7484870.	8971266.	10828579.

## PROPORTIONS IN BROAD AGE GROUPS

0-14	43.6	44.3	44.9	45.5	46.0	46.5	47.0	47.5	47.9
15-59	51.5	50.7	50.1	49.4	49.0	48.6	48.1	47.7	47.4
60 +	4.9	5.0	5.0	5.0	5.0	5.0	4.9	4.8	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D. Ratio	94.21	97.26	99.78	102.33	103.96	105.88	107.83	109.61	111.09
Bir. Rate	47.77	47.77	47.08	46.55	46.20	46.03	45.91	45.75	45.59
Dth. Rate	21.11	21.11	19.16	16.95	14.93	13.04	11.28	9.62	8.07
N.I. Rate	26.66	26.66	27.92	29.59	31.27	32.99	34.63	36.13	37.52
Increment	427260.	513054.	628248.	773446.	958825.	1192762.	1486395.	1857313.	20.70
P.C. Incr.	14.28	15.01	15.98	16.96	17.98	18.96	19.86	20.70	



# PROJECTED POPULATION OF ALL PERSONS SERIES A<sub>2</sub>

Age group	1960	1965	1970	1975	1980	1985	1990	1995	2000
0-4	1070529.	1270742.	1466927.	1716787.	2029429.	2424839.	2920146.	3536996.	4306573.
5-9	833476.	963826.	1157783.	1355703.	1608099.	1923979.	2323996.	2825504.	3450832.
10-14	693661.	800914.	930087.	1122898.	1321067.	1573824.	1890589.	2291755.	2794886.
15-19	594553.	674119.	780483.	909094.	1100755.	1298652.	1551130.	1867739.	2269333.
20-24	507293.	574512.	653380.	758889.	886696.	1076905.	1274142.	1526264.	1842326.
25-29	435064.	487049.	535360.	631936.	736604.	863807.	1052597.	1249508.	1501404.
30-34	371958.	415906.	467455.	533531.	611560.	715698.	842440.	1030335.	1227072.
35-39	315033.	353532.	397095.	448506.	514233.	592068.	695911.	822484.	1009766.
40-44	264905.	297172.	335210.	378614.	429788.	495200.	572862.	676486.	802878.
45-49	220087.	247658.	279425.	317153.	360165.	410998.	476002.	553499.	656657.
50-54	180005.	202933.	229837.	261118.	298099.	340467.	390730.	455086.	532001.
55-59	143145.	162091.	184193.	210381.	240693.	276675.	318158.	367644.	430952.
60-64	108639.	123867.	141763.	162884.	187739.	216702.	251309.	291558.	339868.
65-69	76775.	88013.	101803.	118250.	137492.	160347.	187297.	219803.	257910.
70-74	48150.	55893.	65399.	77235.	91213.	107798.	127816.	151749.	180992.
75-79	25118.	29806.	35615.	42901.	51829.	62588.	75645.	91747.	111287.
80 +	10943.	13648.	16968.	21231.	26657.	33607.	42468.	53801.	68378.
Total	5899334.	6761682.	7796985.	9067111.	10632119.	12574156.	14993242.	18011952.	21783120.

## PROPORTIONS IN BROAD AGE GROUPS

0-14	44.0	44.9	45.6	46.3	46.6	47.1	47.6	48.0	48.4
15-19	51.4	50.5	49.8	49.1	48.7	48.3	47.8	47.5	47.2
60 +	4.6	4.6	4.6	4.7	4.7	4.6	4.6	4.5	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D. Ratio	94.57	98.00	100.92	103.79	105.31	107.14	108.99	110.69	112.05
Bir. Rate		49.35	48.51	47.83	47.35	47.06	46.83	46.56	46.29
Dth. Rate		22.11	20.07	17.71	15.57	13.59	11.73	9.97	8.38
N.I. Rate		27.24	28.44	30.13	31.78	33.47	35.10	36.58	37.91
Increment		862349.	1035303.	1270125.	1565008.	1942037.	2419084.	3018716.	3771161.
P.C. Incr.		14.62	15.31	16.29	17.26	18.27	19.24	20.13	20.94

# PROJECTED POPULATION OF MALES SERIES C<sub>2</sub>

Age group	1960	1965	1970	1975	1980	1985	1990	1995	2000
0-4	534792.	640866.	740660.	868382.	1027928.	1229935.	1275254.	1294393.	1269855.
5-9	414398.	481073.	583449.	684284.	813109.	974056.	1178442.	1233861.	1262659.
10-14	345477.	398356.	464357.	565990.	666823.	795688.	957043.	1161895.	1220185.
15-19	296622.	335747.	388158.	453777.	554651.	655203.	783780.	944928.	1149755.
20-24	251838.	285907.	324624.	376513.	441578.	541395.	641400.	769672.	930164.
25-29	214906.	240862.	274484.	312892.	364270.	428883.	527679.	627396.	755374.
30-34	183208.	205003.	230677.	263983.	302170.	353193.	417432.	515569.	614926.
35-39	155000.	173918.	195468.	220991.	254022.	292052.	342868.	406843.	504410.
40-44	129699.	145819.	164480.	185919.	211278.	244096.	282015.	332714.	396423.
45-49	107017.	120484.	136318.	154822.	176056.	201228.	233828.	271703.	322112.
50-54	86079.	97681.	110783.	126343.	144433.	165324.	190194.	222438.	260018.
55-59	67466.	76539.	87643.	100343.	115330.	132875.	153272.	177721.	209305.
60-64	50309.	57548.	66053.	76543.	88496.	102710.	119481.	139174.	162932.
65-69	34897.	40120.	46593.	54304.	63711.	74580.	87677.	103278.	121721.
70-74	21229.	24916.	29263.	34717.	41162.	49141.	58551.	70027.	83883.
75-79	10760.	12763.	15450.	18703.	22732.	27613.	33776.	41247.	50446.
80+	4362.	5547.	6935.	8770.	11087.	14074.	17912.	22953.	29426.
Total	2908059.	3343147.	3865396.	4507274.	5298836.	6282049.	7300604.	8335812.	9343596.

## PROPORTIONS IN BROAD AGE GROUPS

0-14	44.5	45.5	46.3	47.0	47.3	47.8	46.7	44.3	40.2
15-59	51.3	50.3	49.5	48.7	48.4	48.0	48.9	51.2	55.0
60+	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.5	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D. Ratio	94.93	98.77	102.10	105.29	106.68	108.41	104.36	95.26	81.69
Bir. Rate		50.98	49.97	49.14	48.51	48.10	41.68	36.08	30.81
Dth. Rate		23.14	20.99	18.47	16.22	14.14	11.68	9.59	8.00
N.I. Rate		27.84	28.98	30.67	32.29	33.96	30.00	26.48	22.80
Increment		435089.	522249.	641877.	791563.	983213.	1018555.	1035207.	1007784.
P.C. Incr.		14.96	15.62	16.61	17.56	18.56	16.21	14.18	12.09

# PROJECTED POPULATION OF FEMALES SERIES C<sub>2</sub>

Age group	1960	1965	1970	1975	1980	1985	1990	1995	2000
0-4	535737.	629877.	726267.	848406.	1001501.	1194904.	1235787.	1251560.	1226709.
5-9	419078.	482753.	574334.	671420.	794990.	949924.	1145554.	1195797.	1221272.
10-14	348184.	402558.	465731.	556909.	654245.	778136.	933547.	1129860.	1183146.
15-19	297931.	338372.	392325.	455317.	546105.	643450.	767351.	922811.	1119578.
20-24	255455.	288606.	328756.	382375.	445118.	535510.	632743.	765593.	912162.
25-29	220158.	246187.	279076.	319044.	372334.	434925.	524918.	622112.	746031.
30-34	188750.	210903.	236778.	269548.	309390.	362505.	425008.	514766.	612146.
35-39	160033.	179614.	201627.	227515.	260211.	300015.	353043.	415641.	505356.
40-44	135206.	151353.	170731.	192695.	218510.	251104.	290847.	343772.	406455.
45-49	113070.	127175.	143107.	162331.	184108.	209770.	242174.	281796.	334545.
50-54	93926.	105252.	119053.	134775.	153666.	175142.	200535.	232647.	271984.
55-59	75679.	85552.	96550.	110039.	125363.	143800.	164886.	189923.	221648.
60-64	58330.	66319.	75710.	86341.	99244.	113992.	131827.	152384.	176936.
65-69	41878.	47894.	55211.	63946.	73782.	85767.	99620.	116525.	136189.
70-74	26921.	30977.	36136.	42518.	50050.	58656.	69265.	81722.	97109.
75-79	14358.	17044.	20166.	24198.	29097.	34975.	41869.	50500.	60841.
80 +	6581.	8101.	10033.	12461.	15570.	19533.	24556.	30848.	38952.
Total	2991275.	3418535.	3931589.	4559837.	5333283.	6292107.	7283532.	8289259.	9271061.

## PROPORTIONS IN BROAD AGE GROUPS

0-14	43.6	44.3	44.9	45.5	46.0	46.5	45.5	43.2	39.2
15-59	51.5	50.7	50.1	49.4	49.0	48.6	49.4	51.6	55.3
60 +	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.2	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D. Ratio	94.21	97.26	99.78	102.33	103.96	105.88	102.24	93.67	80.73
Bir. Rate		47.77	47.08	46.55	46.20	46.03	40.07	34.80	29.80
Dth. Rate		21.11	19.16	16.95	14.93	13.04	10.85	8.97	7.43
N.I. Rate		26.66	27.92	29.59	31.27	32.99	29.21	25.83	22.36
Increment		427260.	513054.	628248.	773446.	938825.	991425.	1005727.	981801.
P.C. Incr.		14.28	15.01	15.98	16.96.	17.98	15.76	13.81	11.84

PROJECTED POPULATION OF ALL PERSONS SERIES C<sub>2</sub>

Age group	1960	1965	1970	1975	1980	1985	1990	1995	2000
0-4	1070529.	1270742.	1466927.	1716787.	2029429.	2424839.	2511041.	2545953.	2496564.
5-9	833476.	963826.	1157783.	1355703.	1608099.	1923979.	2323996.	2429658.	2483931.
10-14	693661.	800914.	930087.	1122898.	1321067.	1573824.	1890589.	2291755.	2403331.
15-19	594553.	674119.	780483.	909094.	1100755.	1298652.	1551130.	1867739.	2269333.
20-24	507293.	574512.	653380.	758889.	886696.	1076905.	1274142.	1526264.	18423326.
25-29	435064.	487049.	553560.	631936.	736604.	863807.	1052597.	1249508.	1501404.
30-34	371958.	415906.	467455.	533531.	611560.	715698.	842440.	1030335.	1227072.
35-39	315033.	353532.	397095.	448506.	514233.	592068.	695911.	822484.	1009766.
40-44	264905.	297172.	355210.	4378614.	429788.	495200.	572862.	676486.	802878.
45-49	220087.	247648.	279425.	317153.	360165.	410998.	476002.	553499.	656657.
50-54	180005.	202933.	229837.	261118.	298099.	340467.	390730.	455086.	532001.
55-59	143145.	162091.	184193.	210381.	240693.	276675.	318158.	367644.	430952.
60-64	108639.	123867.	141763.	162884.	187739.	216702.	251309.	291558.	339868.
65-69	76775.	88013.	101803.	118250.	137492.	160347.	187297.	219803.	257910.
70-74	48150.	55893.	65399.	77235.	91213.	107798.	127816.	151749.	180992.
75-79	25118.	29806.	35615.	42901.	51829.	62588.	75645.	91747.	111287.
80 +	10943.	13648.	16968.	21231.	26657.	33607.	42468.	53801.	68378.
Total	5899334.	6761682.	7796985.	9067111.	10632119.	12574156.	14584136.	16625071.	18614656.

PROPORTIONS IN BROAD AGE GROUPS

0-14	44.0	44.9	45.6	46.3	46.6	47.1	46.1	43.7	39.7
15-59	51.4	50.5	49.8	49.1	48.7	48.3	49.2	51.4	55.2
60 +	4.6	4.6	4.6	4.7	4.7	4.6	4.7	4.9	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
D. Ratio	94.57	98.00	100.92	103.79	105.31	107.14	103.29	94.47	81.21
Bir. Rate		49.35	48.51	47.83	47.35	47.06	40.87	35.44	30.30
Dth. Rate		22.11	20.07	17.71	15.57	13.59	11.27	9.28	7.72
N.I. Rate		27.24	28.44	30.13	31.78	33.47	29.60	26.16	22.58
Increment		862349.	1035303.	1270125.	1565008.	1942037.	2009980.	2040934.	1989585.
P.C. Incr.		14.62	15.31	16.29	17.26	18.27	15.99	13.99	11.97

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