2010
POPULATION & HOUSING CENSUS REPORT

FERTILITY

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PREFACE AND ACKNOWLEDGEMENT

The mandate of the Ghana Statistical Service (GSS), like many other national statistical offices, includes data collection, compilation and analysis as well as dissemination of statistical information in an accessible and user-friendly manner. In order to satisfy the needs of users, GSS is required to analyse and interpret statistics in a form that makes it easily understood for people to appreciate the value of the statistical information. There is also the need to disseminate widely all the statistics produced by GSS so that all data users including potential data users can have access to it.

Ghana, like many other developing countries, relies mainly on survey and population census data for planning at the national and the sub-national levels. Detailed analysis of such data provides users with a wealth of information for planning and policy formulation. Analysis of the 2010 Population and Housing Census data on topical issues, therefore, provides information for effective planning at all levels.

Several reports, including six monographs, were prepared using the 2010 Census data and published in 2012 and 2013. The published reports from the census data was a collaborative effort between the GSS and Local consultants from research institutions and universities in Ghana with funding from the Government of Ghana and various Development Partners (DPs). In order to strengthen the report writing capacities of the Ghana Statistical Service (GSS) and Ministries, Departments and Agencies (MDAs) which are engaged in population-related activities, professional staff of GSS and these MDAs were paired up with consultant writers to prepare the reports.

The monograph on 'Fertility in Ghana' is one of the additional eight monographs that has been prepared from the 2010 Population and Housing Census data and is meant to inform policy makers on the current fertility trends in Ghana using data from the 2010 Population and Housing Census. Issues relating to definitions, concepts and the demographic tools for fertility estimation that have been adopted in the report as well as an evaluation of the data on recent and cumulative fertility and the results are presented in sections of the report. Analysis of mean parities of children ever-born and those surviving, parity progression ratios, mean age at childbearing and their demographic and socioeconomic differentials as well as recent fertility, covering crude birth rate, general fertility rate, adjusted and unadjusted age specific and total fertility rates, gross and net reproduction rates have also been discussed.

The Ghana Statistical Service wishes to thank the United Nations Population Fund (UNFPA) for providing funds for the preparation of this monograph and the lead role UNFPA played in mobilizing resources from the UN System and from other DPs for the 2010 PHC. Our appreciation also goes to Dr. Johnson Fiifi Amoako for the dedication and competence he demonstrated in the preparation of this report.

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CHAPTER ONE
INTRODUCTION

1.1   Background and Context

The challenges of rapid population growth was not foreseen in Ghana until its first post-independence Population and Housing Census (PHC) in 1960, which reported a fertility rate of 6.5 children per woman (GSS and MI, 1998). This prompted the government that rapid population growth could hinder the nation's development agenda (Codjoe, 2007; GSS, 2013). Foreseeing the challenges of rapid population growth, Ghana was the first country in sub-Saharan Africa to become a signatory to the World Leaders' Declaration on Population (GoG, 1969). The Government of Ghana enacted its first national population policy in 1969 and adopted a number of strategies and collaborations to help control the rapid population growth (NPC, 1994; Codjoe, 2007). These include the formation of the Planned Parenthood Association of Ghana (PPAG), an affiliate of the International Planned Parenthood Association in Ghana in 1969 and the lunch of its first National Family Planning Programme in 1970 (Codjoe, 2007).

Despite all the policy and programme efforts, there was no noticeable decline in fertility two decades after the enactment of the national population policy. A Supplementary Enquiry of the 1970 Population Census in 1971, covering 5 percent of the population, reported a fertility rate of 6.9 (GSS, 2013). The 1979/80 Ghana Fertility Survey reported a fertility rate of 6.5, while the first Ghana Demographic and Health Survey (GDHS) in 1988/89 estimated the fertility rate at 6.4 (Ghana Central Bureau of Statistics, 1983; GSS and IRD, 1989). Following a review of the policy in 1989, it was concluded that the impact of the 1969 Population Policy was trivial. The second GDHS in 1993 revealed a considerable decline in fertility.

The survey reported a fertility rate of 5.5, representing a 14 percent decline from the previous survey (GSS and MI, 1994). To foster a rapid and sustained fertility decline as well as address emerging population issues such HIV/AIDS, environmental degradation, gender equality, old-age vulnerability, needs of disable persons, education and welfare of children and the youth, the government revised its population policy in 1994 (NPC, 1994). The targets of the revised policy include reducing the country's total fertility rate from 5.5 in 1994 to 5.0 by 2000, 4.0 by 2010 and 3.0 by 2020 (NPC, 1994). The policy was also aimed to increase use of modern contraceptive methods to 15 percent by 2000, 28 percent by 2010 and 50 percent by 2020 (NPC, 1994). Several policy guidelines and strategies were developed to make the policy responsive to the intended targets. These include the 1996 Medium-Term Health Strategy, the 1996 National Reproductive Health Policy, Standards and Protocols, the 1998 National Adolescent Reproductive Health Policy, the 1996 National Community-Based Distribution Strategy, the 1996 Decentralisation of the Health Sector Act and the 1998 National Population and Communication Strategy (Amoako Johnson and Madise, 2009).

Following the revision of the policy, a rapid decline in fertility from 5.5 to 4.6 children per woman was observed in the 1990s, but stalled in mid-transition in the early 2000s (Bongaarts, 2006). The 2000 PHC reported a fertility rate of 4.0, whilst the 2003 and 2008 GDHS reported fertility rates of 4.4 and 4.0, respectively, confirming the stall in fertility in the 2000s (GSS, NMIMR and ORC Macro, 2004; GSS, GHS and ICF Macro, 2009; GSS, 2013). The rapid decline in fertility observed in the 1990s was attributed to the increase in use of modern contraception. Use of modern contraceptive methods among married women increased from 4 percent in 1988 to 10 percent in 1993 and to 13 percent in 1998 (GSS and IRD, 1989; GSS and

MI, 1994 ;GSS and MI, 1999). When fertility stalled in the 2000s, there was a concurrent declined in use of modern contraceptive methods from 19 percent in 2003 to 17 percent in 2008 (GSS, NMIMR and ORC Macro, 2004; GSS, GHS and ICF Macro, 2009). The young population structure, coupled with declining mortality has resulted in a sustained intercensal population growth rate of around 2.5 percent since 1960 (GSS, 2013).

Substantial socioeconomic and geographical variations exist in fertility rates in Ghana. The total fertility rate for women with no education is about 6.0 compared to 2.1 for those with secondary or higher education (GHS and ICF Macro, 2009). Similarly, women from the poorest households have a fertility rate of about 6.5 compared to 2.3 for those from the richest households (GHS and ICF Macro, 2009). Women in rural areas (total fertility rate of 4.9) on average have 1.8 children more than those residents in urban (total fertility rate of 3.1) areas (GHS and ICF Macro, 2009). Considering regional differentials, the Northern region has the highest fertility rate of 6.8 compared to 2.4 for the Greater Accra region. The variation in fertility correlates with use contraception. Use of any method of contraception varies from 5.9 percent in the Northern region to 32.6 percent in the Greater Accra region, with use of modern contraceptive methods varying from 5.7 percent to 22.2 percent in the same regions (GHS and ICF Macro, 2009).

Although knowledge of contraceptive methods is almost universal (98 percent of all women know of a modern method) in Ghana, the low use of contraception has resulted in high unmet need for contraception (GHS and ICF Macro, 2009). A woman is considered to have 'unmet need' if she is married and fecund and wants to delay childbearing for at least two years or does not want any more children but is not using any contraceptive method, or if her current pregnancy or last birth was unwanted or mistimed. The 1998 GDHS reported that 37 percent of fecund-married women had unmet need for contraception, this declined to 34 percent in 2003 but increased to 35 percent in 2008 (GHS and ICF Macro, 2009). The result of high fertility, low contraceptive use and high unmet need is a high incidence of unintended pregnancies. The 1993 GDHS estimated that 42 percent of births were unintended. This declined to 36 percent in 1998 but increased to 40 percent in 2003 and decreased to 37 percent in 2008 (GHS and ICF Macro, 2009). The 2008 GDHS estimates show that Ghana's TFR would have been about 0.5 births less if all unwanted births were avoided.

Aside contraceptive use, other proximate factors such as marriage, postpartum amenorrhea, sexual activity, postpartum insusceptibility also contribute to Ghana's fertility levels and differentials (Blanc and Grey, 2002). Although births continue to occur amongst unmarried women, marriage symbolises the primary exposure to pregnancy and childbearing (Blanc and Grey, 2002). Research evidence shows that societies that tend to marry early also start childbearing early and have high fertility (Westoff, 2003). In Ghana, there has been slight increase in the median age at marriage. Over the last two decades the median age at first marriage for women age 25-49 years has increased from 18.1 years to 19.8 years, which indicates a move towards later marriage (GHS and ICF Macro, 2009). However, there are substantial socioeconomic and geographical differentials. The 2008 GDHS shows that the median age at first marriage for women 25-49 years is about 18.7 years for rural residents and 21.3 years for their urban counterparts, with a regional variation between 19.8 years in the Upper East to 22.9 years in the Greater Accra region (GHS and ICF Macro, 2009).

Post-partum infecundability is an important period of temporary postnatal infertility due to full breastfeeding, sexual abstinence and absence of mensuration (Gebreselassie, Rutstein and Mishra, 2008). These are important practises in delaying conception and reducing a woman's lifetime fertility, particularly in societies where use of modern contraceptive methods is low. In Ghana, the median duration of post-partum amenorrhea has declined from 14.4 months in 1998

to 8.9 years in 2008 (GHS and ICF Macro, 2009). Post-partum amenorrhea is higher among older (30-49 years) women (10.1 months) and rural residents (9.9 months) when compared to younger (15-29 years) mothers (7.9 months) and urban residents (7.9 months) (GHS and ICF Macro, 2009). With regard to post-partum abstinence, the median duration is 7.5 months nationally but also varies between younger (6.6 months) and older (8.5 months) women and also between rural (7.4 months) and urban (8.1 months) residents (GHS and ICF Macro, 2009). The period of post-partum insusceptibility is also high in Ghana with a median duration of 12.4 moths. The median duration of post-partum insusceptibility is shorter amongst younger (15-29 years) women (11.8 months), compared to older (30-49 years) women (13.8 months) and also varies between urban (10.4 months) and rural residents (13.9) residents. These differentials explain the variation in fertility in Ghana (GHS and ICF Macro, 2009).

1.2   Objectives

The primary objective of this analysis is to estimate the levels and patterns of current and lifetime fertility based on the 2010 Ghana Population and Housing Census and also to examine the demographic and socioeconomic differentials as well as the geographical variations. The specific objectives are to examine the:

- levels, trends and differentials in recent and cumulative fertility

- levels and patterns of childbearing amongst adolescents (12-19 years) and older women (45 years and older) which are considered as indicators of high-risk childbearing

- the demographic, socioeconomic and geographical differentials in high risk childbearing

- patterns of nuptiality and its linkages with childbearing, and

- derive the policy and programme implications of the findings

1.3   Organisation of the Report

This report is organised into seven sections. Section one provides an overview of the 2010 Ghana Population and Housing Census, a review of Ghana's fertility and the objectives of the report. Section two discusses the definitions, concepts and the demographic tools for fertility estimation adopted in the report. Results from an evaluation of the data on recent and cumulative fertility from the 2010 PHC are also presented in this section. Section three presents the results on cumulative fertility. This covers analysis of mean parities of children ever-born and those surviving, parity progression ratios, mean age at childbearing and their demographic and socioeconomic differentials. Section four presents the results on recent fertility, covering crude birth rate, general fertility rate, adjusted and unadjusted age specific and total fertility rates, gross and net reproduction rates. The section also presents the demographic and socioeconomic differentials in recent fertility. Section five of the report focuses on high risk fertility covering childbearing amongst adolescent women aged 12-19 years and older women aged 45 years and older. Section 6 presents the results on nuptiality covering level, trends and differentials in marital status of the population aged 12 years and older and singulate mean age at marriage. The last section presents a summary of the key findings and their policy implications.

Definitions and concepts

This section of the report discusses the concepts and demographic methods adopted for the analysis. The definitions of the concepts are presented in Box 1.

Box 1 Definition of concepts	
Fertility	The actual reproductive (childbearing) performance of a population.
Sex Ratio at Birth	The ratio of male to female births.
Sex ratio	The number of males per 100 females in a population
Adolescent fertility	The number of births to women 15 to 19 years of age per 1,000 women in that age group.
Parity	The total number of live births a woman has ever had.
Parity progression ratio	The probability of having another child given that the mother has reached certain parity.
Mean age at childbearing	The mean age of mothers at the birth of their children if women were subject throughout their lives to the age-specific fertility rates observed in a given year.
Crude birth rate	The number of births in a given year per the mid-year population.
General fertility rate	The number of live births in a year per the mid-year population of women aged 15-49.
Age specific fertility rate	The number of live births occurring to a particular age group of women per year.
Total fertility rate	The number of children a woman would have if she experienced the age-specific fertility rates for the period in question throughout her reproductive life.
Gross Reproduction Rates	The average number of daughters that would be born to a woman during her lifetime if she passed through her child-bearing years conforming to the age-specific fertility rates of a given year.
Net Reproduction Rates	The Net Reproduction Rate is the number of daughters born to a hypothetical cohort of women who experience the current age-specific fertility rates throughout their reproductive lives taking into account the mortality of those women.
High Risk Fertility	Births to adolescent women aged 12 to 19 years and older women aged 45 years or older.
Nuptiality	The frequency and characteristics of marriages in a population.
Singulate Mean Age at Marriage	The average length of single life expressed in years among those who marry before age 50

CHAPTER TWO
TOOLS FOR FERTILITY ESTIMATION

2.2   Tools for Fertility Estimation

The direct period and cohort fertility measures as well as the nuptiality measures used in the analysis are presented in Box 2.

Period fertility

Crude Birth Rate (CBR) = $\dfrac{\text{number of births in a year}}{\text{mid-year population}} \times 1000$

General Fertility Rate (GRR) = $\dfrac{\text{number of births in a year}}{\text{mid-year population of women aged 15-49 years}} \times 1000$

Age Specific Fertility Rate (ASFR) = $\dfrac{\text{number of births in a year to women aged x to x+n}}{\text{mid-year population of women aged x to x+n}} \times 1000$

Total Fertility Rate (TFR) =
$$\frac{\textbf{sum of ASFRs to women aged } (\mathbf{x}, \mathbf{x} + \mathbf{n}) \times \boldsymbol{n}}{\mathbf{1000}}$$

Cohort fertility

Gross Reproduction Rate (GRR) =
$$\frac{\textbf{sum of ASFRs to women aged } (\mathbf{x}, \mathbf{x} + \mathbf{n}) \textbf{ for female births} \times \mathbf{n}}{\mathbf{1000}}$$

Net Reproduction Rate (NRR) =
$$\frac{\textbf{sum of (ASFRs to women aged } (\mathbf{x}, \mathbf{x} + \mathbf{n}) \textbf{ for female births} \times \textbf{ proportion of women surviving in each age group} \times \mathbf{n}}{\mathbf{1000}}$$

Parity Progression Ratios (PPR) =
$$\frac{\textbf{number of women at parity i} + \mathbf{1} \textbf{ or more}}{\textbf{number of women at parity i or more}}$$

Mean Age at Childbearing (MAC) =
$$\frac{\textbf{sum of ASFRs to women aged } (\mathbf{x}, \mathbf{x} + \mathbf{n}) \times \textbf{midpoint of age } (\mathbf{x}, \mathbf{x} + \mathbf{n})}{\textbf{sum of ASFRs to women aged } (\mathbf{x}, \mathbf{x} + \mathbf{n})}$$

Singulate Mean Age at Marriage (SMAM) =
$$\frac{\textbf{Number of person years lived in single state by those who marry before age 50}}{\textbf{Number of persons marrying before age 50}}$$
Box 2   Selected direct measures of period and cohort fertility and nuptiality

Note: Mid-year population refers to estimated population on 30 June.
Source: Rowland (2003); Preston et al. (2001); Hinde (1998)

The indirect measures of estimating period fertility adopted in this analysis are presented in Box 3.

Box 3. Selected indirect measures of period fertility

Although census data have the advantage of deriving direct estimates of period fertility, such data are restricted in terms of detailed information such as the timing of birth (histories) and potential bias and errors of different magnitude due to misreporting. This is particularly an issue in the absence of reliable or flawed vital statistics registration systems and other comparable data such as the Demographic and Health Surveys (DHS). In such circumstances, it is recommended to first undertake a thorough scrutiny of the census fertility data for possible age distortions, reporting bias and missingness.

The date of birth of the last child born in the year preceding the census would be ideal instead of data on the number of children born, although both are subject to under-reporting. The most common reporting bias in census is the omission of live-born children especially among older mothers either because some children had left the household or died (UN 1983). Age misreporting of mothers is also common, especially young (teenage) mothers may overstate their age. These data problems can be assessed by calculating the average parities from data on children ever-born comparing the distribution of births across different age groups. If the proportion of missing data in the census exceeds five percent and if there is inconsistency between the direct estimate of current fertility and those from other relevant sources, then further investigations should be carried out (Moultrie and Timæus 2002). Three commonly used indirect estimation techniques that are used in this report are summarised.

The Brass P/F Ratio method

The P/F method developed by Brass (1964) proposes that cohort and period fertility rates should be identical under the assumption that fertility has been constant for an extended period of time. P refers to the average parity or cumulated lifetime parity of a cohort of women and F refers to estimated cumulated current fertility. If the fertility has remained constant and the data on children ever-born are complete for women up to age 30 or 35, the P/F ratio would be equal to 1 in every age group. However, if the fertility has been declining, then P would be greater than F with increasing age of mother.

The method makes adjustment to the total fertility and age patterns of fertility using data on the parity and number of births during the year preceding the census date. The input data required for the estimation of P/F ratio are children ever-born classified by five year age group of mothers, number of births in the year classified by five year age group of mothers, women classified by five year age group and total population if the birth rates are to be estimated (UN 1983).

Relational Gompertz model

Brass (1981) developed the Relational Gompertz model by refining the P/F ratio method to estimate the ASFRs and the TFR by fitting the Gompertz function to reported ASFRs and the average number of children ever-born by age of the mother and the number of births in the year preceding the census date. This method is designed to tackle the problem of under-reporting of recent births in the reference period and life-time fertility as well as adjusts for potential errors of age reporting among older women. The input data required for the estimation of Relational Gompertz model are average parities by age group of mothers and the ASFRs. The method assumes that the parities of younger women aged 20-29 or 20-34 are accurate.

The Arriaga Fertility Estimation Method

Arriaga (1983) developed an indirect estimation of fertility by using data on the average number of children ever-born by age of mother and the ASFRs for the last two censuses. This method is similar to the Brass P/F ratio method but overcomes the constant fertility assumption. In situations where fertility is declining, then Arriaga method yields reliable estimates than the Brass P/F ratio method.

Notes: For details, the readers are referred to the United Nations Manual X (1983); UNFPA Tools for Demographic Estimation website (http://demographicestimation.iussp.org/).

2.3 Data Evaluation and Quality Assurance

Recent and lifetime fertility are the main indicators use to estimate fertility rates from Census data. The reliability and robustness of fertility estimates from census data are thus dependent on the quality of the reporting of these indicators. However, systematic miss-reporting of current and lifetime fertility are very common in censuses. The data on recent and lifetime fertility are supposed to cover only children born alive, excluding stillbirths and other foetal deaths. Adhering to this definition is very important given that all estimation procedures are based strictly on children born alive. Recent fertility is restricted to births in the 12 months preceding the Census, rendering it susceptible to dating errors. Omission of neonatal deaths is a common error in reporting of recent fertility. Miss-attribution of children is another common reporting error encountered in reporting of recent fertility. Women are likely to report an adopted child as a biological child. Examination of data on lifetime fertility has shown that children who have left home or have died are often omitted.

In census enumeration it is also uncommon to encounter problems of improbable and impossible parities relative to the age of the mother. This is especially the case at younger ages, where some women report parities which are practically impossible for their age. These errors can also be due to data capturing errors. This section of the report assesses the quality of the data on lifetime (children ever-born and those surviving) and recent fertility (children born in the 12 months preceding the Census and those surviving) which are used for computation of fertility rates for the 2010 PHC.

Table 2.1 below shows the number of children ever-born by age-group of women. A useful rule of thumb for accessing quality of lifetime fertility data is to limit the maximum number of live births that a woman can potentially have to one birth in every 18 months from the age of 12 years (Moultrie et al., 2013). By this rule, the maximum number of children a woman can have by exact age 20 is 5 and by exact age 25 is 8. If the recorded number of births by age group exceeds this number then this could indicate miss-reporting of lifetime fertility. Table 2.1 clearly shows that this is not the case with regards to the lifetime fertility data from the 2010 PHC.

Similarly, Table 2.2 also shows that there is no reporting of implausible parities of surviving children. Another key consistency check of reporting of lifetime fertility conducted in the evaluation is the examination of whether the number of children ever-born for each age-group and parity is higher than the reported number of surviving children among the children ever-born for the same age group and parity. For consistent reporting, the number of children ever-born is expected to be higher than the number surviving.

Table 2.1: Women's reported parities of children ever-born by age, 2010

Parity				Age (years)				
	15-19	20-24	25-29	30-34	35-39	40-44	45-19	Total
1	88,018	264,026	229,888	117,711	63,488	38,782	26,452	828,365
2	34,266	288,228	452,658	333,918	203,960	130,776	90,062	1,533,868
3	14,754	162,870	456,402	493,839	382,950	259,035	182,760	1,952,610
4		78,072	322,312	510,692	503,760	381,788	280,892	2,077,516
5		28,085	172,895	397,105	484,720	421,750	330,760	1,835,315
6		15,342	94,308	265,062	398,244	412,638	347,076	1,532,670
7			37,429	155,785	286,769	354,207	321,853	1,156,043
8			6,424	93,600	183,768	269,632	261,008	814,432
9				31,716	100,926	172,269	183,870	488,781
10				4,570	62,450	120,970	139,740	327,730
11						54,131	65,593	119,724
12						29,460	35,700	65,160
13							9,763	9,763
14							4,718	4,718
15							2,325	2,325
Total	137,038	836,623	1,772,316	2,403,998	2,671,035	2,645,438	2,282,572	12,749,020

Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 2.2: Women's reported parities of surviving children by age, 2010

Parity				Age (years)				
	15-19	20-24	25-29	30-34	35-39	40-44	45-19	Total
1	81,479	249,338	221,517	115,952	64,014	40,796	29,013	802,109
2	29,704	276,150	456,194	346,714	217,296	143,418	101,920	1,571,396
3	10,908	144,939	443,928	512,808	413,700	287,313	209,775	2,023,371
4		61,344	289,336	505,896	529,300	421,304	319,032	2,126,212
5		19,625	135,450	360,710	479,165	448,315	363,310	1,806,575
6		4,836	54,948	205,344	353,676	401,982	349,878	1,370,664
7			15,799	96,397	209,342	292,278	275,093	888,909
8			2,208	41,800	106,072	182,312	186,352	518,744
9				8,001	38,223	81,873	94,059	222,156
10				800	13,470	39,410	47,080	100,760
11						11,660	16,753	28,413
12						4,872	6,588	11,460
13							1,690	1,690
14							812	812
15							255	255
Total	122,091	756,232	1,619,380	2,194,422	2,424,258	2,355,533	2,001,610	11,473,526

Source: Ghana Statistical Service, 2010 Population and Housing Census

The average number of children ever-born and alive by age group of women is another credible consistency check for lifetime fertility data. The distribution of average parities is expected to follow a sigmoid distribution, with lower mean parities at lower ages and a steady increase by age (Moultrie et al., 2013). Figure 2.1 shows the distribution of mean parities by age and residence. The figure corresponds to the expected pattern, indicating no miss-reporting of lifetime fertility for both ever-born and surviving children. In addition, there are no large increases between successive parities and the number of ever-born children is higher than surviving children for all age-groups.

Figure 2.1: Women's reported mean parity by age and residence, 2010

Urban

Rural

Total
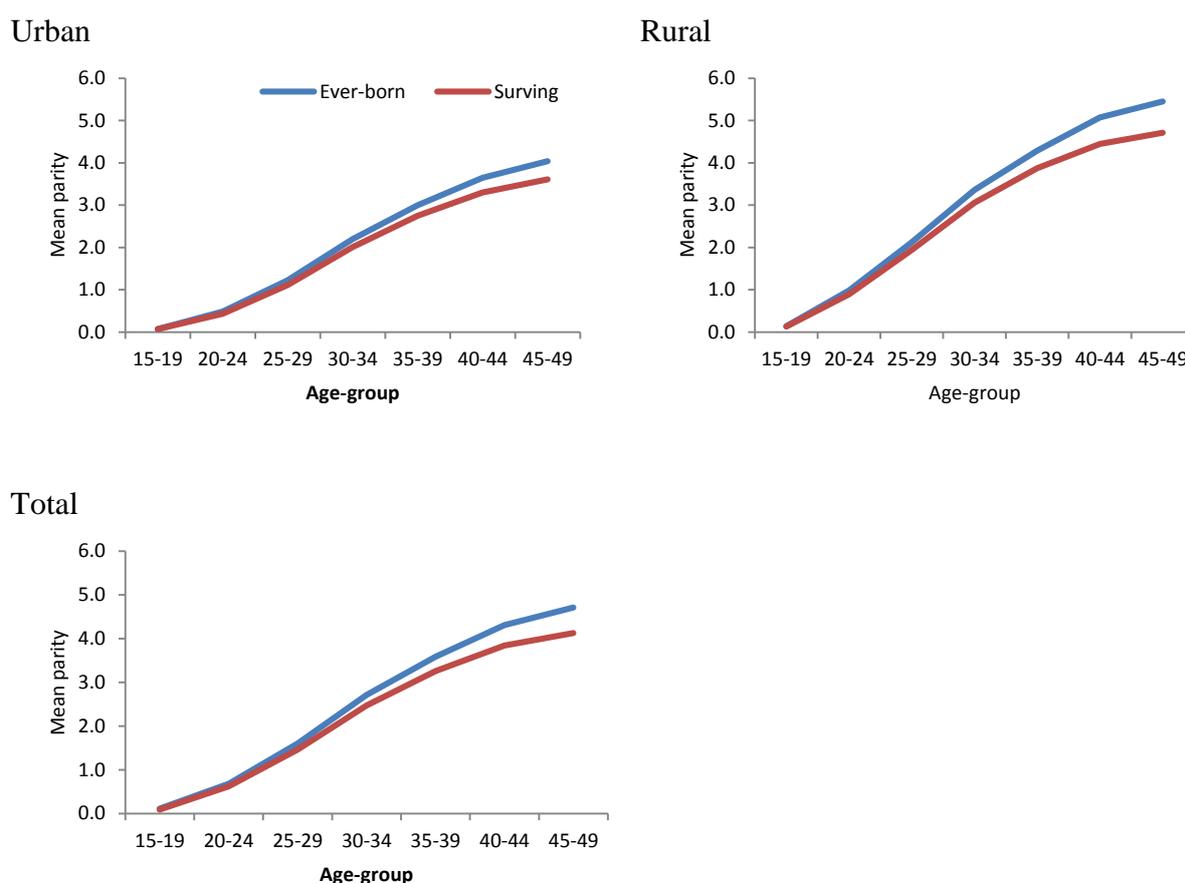
To establish consistency in the reporting of lifetime fertility, women's reported mean parities from the 2010 PHC was compared to those from the 2008 GDHS. This exercise allows for comparing the parities of real cohorts over a short period of time. Since the 2010 PHC is only two years from the 2008 GDHS, the cohort parities are not expected to diverge substantially from each other. Table 2.3 shows the comparison of women's reported mean parity from 2008 GDHS and 2010 PHC by age.

Table 2.3: Comparison of women's reported mean parity from the 2010 PHC with 2008 GDHS by age, 2010

Age	Children ever-born			Children surviving		
	2008 GDHS	2010 PHC	Difference (b) – (a)	2008 GDHS	2010 PHC	Difference (b) – (a)
15-19	0.11	0.11	0.00	0.11	0.09	-0.02
20-24	0.81	0.68	-0.13	0.74	0.62	-0.12
25-29	1.83	1.60	-0.23	1.69	1.46	-0.23
30-34	3.01	2.71	-0.30	2.76	2.47	-0.29
35-39	3.90	3.59	-0.31	3.49	3.26	-0.23
40-44	4.79	4.31	-0.48	4.16	3.84	-0.32
45-49	5.59	4.71	-0.88	4.73	4.13	-0.60
Total	2.33	2.00	-0.33	2.07	1.80	-0.27

Source: Ghana Statistical Service, 2010 Population and Housing Census

The Table shows that mean parities are under-reported in the 2010 PHC for both children ever-born and surviving children for all ages, except the mean parities of children ever-born for women in the aged 15-19 years. Miss-reporting of mean parities is highest for women of higher parities.

Another important check conducted was to compare the Age-Specific Fertility Rates (ASFR) and Total Fertility Rates (TFR) from the 2010 PHC with those from the 2008 GDHS. Table 2.4 shows the reported ASFR and TFR from 2008 GDHS and the 2010 PHC by residence. The estimated TFR from the 2010 PHC is about 0.7 births per woman less than that from the 2008 GDHS, the corresponding urban estimate is 0.3 births less, while the rural estimate is 1.0 births less. Another check to establish the reliability of the fertility data was to compare the mean parities of women aged 45-49 years with the TFR derived from the data on recent fertility. If fertility has not changed much as will be expected between the 2008 GDHS and the 2010 PHC, then the two measures should be very close if the data were accurately reported and captured. The mean parity

Table 2.4: Comparison of the unadjusted ASFRs and TFRs from 2008 GDHS with the 2010 PHC by residence, 2010

Age	Urban		Rural		Total	
	2008 DHS	2010 PHC	2008 DHS	2010 PHC	2008 DHS	2010 PHC
ASFR						
15-19	0.05	0.02	0.08	0.04	0.07	0.03
20-24	0.11	0.07	0.24	0.15	0.18	0.1
25-29	0.17	0.13	0.24	0.18	0.21	0.15
30-34	0.16	0.13	0.19	0.16	0.17	0.15
35-39	0.09	0.11	0.14	0.14	0.12	0.12
40-44	0.04	0.06	0.08	0.08	0.06	0.07
45-49	0	0.03	0.01	0.04	0.01	0.03
TFR	3.1	2.8	4.9	3.9	4	3.3

Source: Ghana Statistical Service, 2010 Population and Housing Census

of women 45-49 years reported in the 2008 GDHS is 4.73, whilst the reported TFR from the 2010 PHC is 3.3. This clearly indicates that there is miss-reporting of births in the 2010 PHC, demonstrating the need for applying adjustment procedures in the estimation of fertility rates.

Table 2.5 show the sex ratio at birth (children born in the past 12 months) and the population sex ratio (children ever-born) by age of women and residence. These estimates are used to assess the completeness of the reporting of births. In a population where sex selectivity is low, the sex ratio at birth is not expected to vary between the age-groups, since it is not expected to vary over time. Also, if there is no under-reporting of male births then the sex ratio will be expected to be close 105. Sex ratio of between 95 and 97 may indicate that males who were born but have died were under-reported. From Table 2.5 it is clear that there reported sex ratios do not vary substantially between the age-groups; however, with a sex ratio at birth of 97.2, it is evident that male births are under-reported.

Table 2.5: Sex ratios of children born in the past 12 months and children ever-born by age of women and residence

Age	Children born in the past 12 months			Children ever-born		
	Urban	Rural	Total	Urban	Rural	Total
15-19	89.9	89.7	89.8	95.7	100.7	98.8
20-24	92.8	95.0	94.1	101.3	102.7	102.1
25-29	97.5	98.1	97.8	102.4	103.6	103.1
30-34	97.1	98.4	97.7	101.9	103.6	102.8
35-39	98.6	100.6	99.6	101.5	103.4	102.5
40-44	96.4	100.3	98.4	100.6	102.9	101.9
45-19	90.5	93.6	92.2	100.0	102.6	101.4
Total	96.6	96.1	97.2	101.2	103.1	102.3

Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 2.6 below shows the number of births in the 12 months preceding the Census and the number of children under one year old by region and residence. If the data are correctly reported and captured, given that not all children survive to their first birthday, it is expected that the number of children born in the past 12 months will be greater than number of children less than one year old. Table 2.6 shows that the reported number of birth in the past 12 months is less than the number of children under one year of age. The number of children born in the 12 months preceding the Census is less than those under one year of age by 107,501, 63,117 for urban areas and 44,384 for rural areas. This is also the case for all regions, indicating that recent fertility is under-reported in all regions.

Table 2.6: Comparison of the number of births in the past 12 months with the number of children under one year old by region and residence

Region and residence	Number of births in the past 12 months (a)	Number of children under 1 year of age (b)	Difference (a-b)
Western			
Urban	24,831	28,575	-3,744
Rural	39,792	42,119	-2,327
Total	64,623	70,694	-6,071
Central			
Urban	25,948	32,349	-6,401
Rural	33,053	38,501	-5,448
Total	59,001	70,850	-11,849
Greater Accra			
Urban	82,815	100,893	-18,078
Rural	10,237	12,184	-1,947
Total	93,052	113,077	-20,025
Volta			
Urban	16,033	21,897	-5,864
Rural	36,061	43,514	-7,453
Total	52,094	65,411	-13,317
Eastern			
Urban	26,433	31,076	-4,643
Rural	41,467	45,733	-4,266
Total	67,900	76,809	-8,909

Table 2.6: **Comparison of the number of births in the past 12 months with the number of children under one year old by region and residence (cont'd)**

Region and residence	Number of births in the past 12 months (a)	Number of children under 1 year of age (b)	Difference (a-b)
Ashanti			
Urban	69,346	83,316	-13,970
Rural	55,083	61,776	-6,693
Total	124,429	145,092	-20,663
Brong Ahafo			
Urban	24,664	29,678	-5,014
Rural	36,762	41,648	-4,886
Total	61,426	71,326	-9,900
Northern			
Urban	16,247	19,766	-3,519
Rural	44,343	48,993	-4,650
Total	60,590	68,759	-8,169
Upper East			
Urban	4,800	6,261	-1,461
Rural	19,259	23,661	-4,402
Total	24,059	29,922	-5,863
Upper West			
Urban	2,449	2,872	-423
Rural	14,077	16,389	-2,312
Total	16,526	19,261	-2,735
All			
Urban	293,566	356,683	-63,117
Rural	330,134	374,518	-44,384
Total	623,700	731,201	-107,501

Source: Ghana Statistical Service, 2010 Population and Housing Census

CHAPTER THREE
CUMULATIVE FERTILITY

3.1   Cumulative Fertility

Cumulative fertility refers to the average number of live births that a woman born in a particular year has had by the time she reaches a particular age. This shows the age pattern of fertility in a population. This section of the report investigates the levels and trends in women's reported cumulative fertility by examining their mean parities, parity progression ratios, mean age at childbearing and the demographic and socioeconomic differentials in cumulative fertility.

3.1.1   Children ever-born and surviving

Table 3.1 shows the distribution of the average number of children ever-born and those surviving by age and residence. At the national level, mean parities of children ever-born varies from 0.11 for women aged 15-19 years to 4.71 for those aged 45-49 years, while the mean parities of surviving children varies between 0.09 to 4.13. Across all the age-groups, mean parities are higher for rural women when compared with urban women. In urban areas, mean parities of children ever-born varies from 0.07 for women aged 15-19 years to 4.04 for those aged 45-49, whilst the mean parities of surviving children varies from 0.07 to 3.61. The mean parities of rural women for children ever-born varies between 0.14 for those aged 15-19 years to 5.45 for those aged 45-49 years, whilst for surviving children it varies between 0.13 and 4.71.

Table 3.1: Women's reported mean parities by age and residence, 2010

Age	Children ever-born			Children surviving		
	Urban	Rural	Total	Urban	Rural	Total
15-19	0.07	0.14	0.11	0.07	0.13	0.09
20-24	0.48	0.98	0.68	0.43	0.89	0.62
25-29	1.22	2.12	1.60	1.11	1.94	1.46
30-34	2.20	3.36	2.71	2.01	3.06	2.47
35-39	3.00	4.29	3.59	2.75	3.87	3.26
40-44	3.65	5.07	4.31	3.30	4.45	3.84
45-49	4.04	5.45	4.71	3.61	4.71	4.13
Total	1.61	2.51	2.00	1.80	1.46	2.24

Source: Ghana Statistical Service, 2010 Population and Housing Census

There are substantial regional variations in the reported mean parities of women (Table 3.2). Considering children ever-born, the Greater Accra region recorded the lowest mean reported parity of 1.38, while the Upper East region recoded the highest mean parity of 2.49. Similar patterns are observed for urban and rural areas as well as for surviving children.

Table 3.2: Women's reported mean parities by region and residence, 2010

Region and residence	Children ever-born			Children surviving		
	Urban	Rural	Total	Urban	Rural	Total
Western	1.7	2.42	2.09	1.54	2.2	1.9
Central	1.86	2.53	2.19	1.66	2.25	1.95
Greater Accra	1.34	1.86	1.38	1.23	1.71	1.27
Volta	1.73	2.41	2.16	1.56	2.17	1.94
Eastern	1.78	2.5	2.16	1.62	2.28	1.97
Ashanti	1.59	2.49	1.9	1.45	2.27	1.73
Brong Ahafo	1.82	2.57	2.2	1.65	2.31	1.99
Northern	2.0	2.64	2.43	1.73	2.3	2.12
Upper East	1.93	2.67	2.49	1.67	2.29	2.14
Upper West	1.58	2.67	2.46	1.36	2.27	2.09

Source: Ghana Statistical Service, 2010 Population and Housing Census

The trends in reported mean parties from the 2000 and 2010 PHC are presented in Figure 3.1. The mean parity of women aged 15-49 years has declined from 2.63 in 2000 to 2.24 in 2010. The estimates show that there has been a decline in mean parities across all the age groups. The highest decline of 1.8 births was observed for women aged 45-49 years.

Figure 3.1 Trends in women's reported mean parities by age, 2000–2010
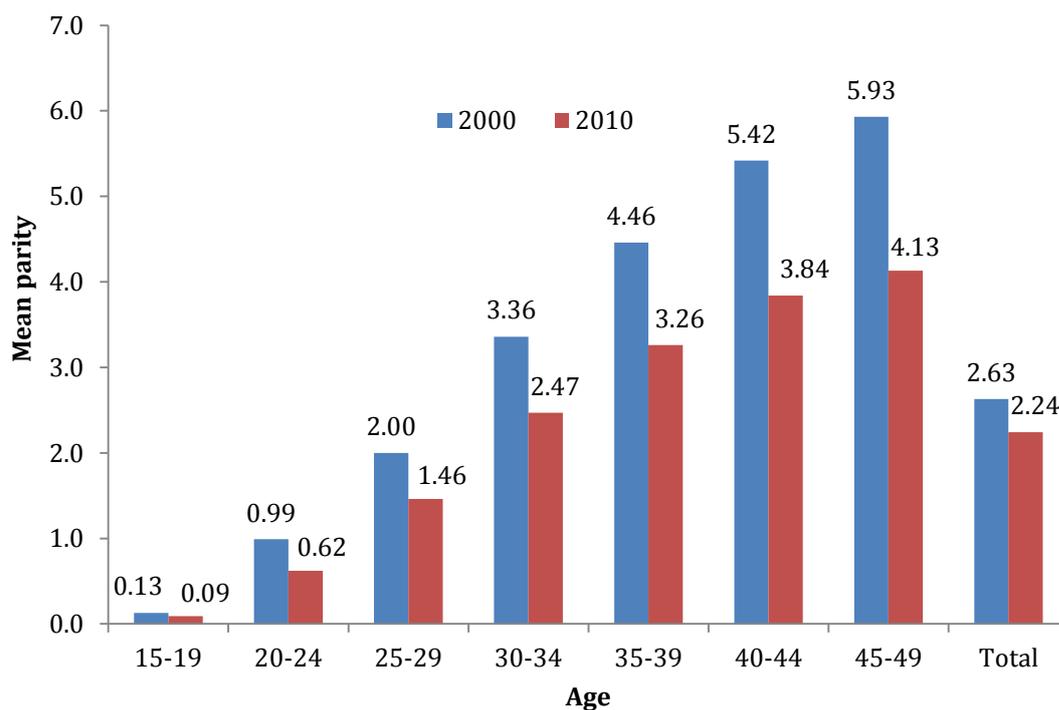
Source: Ghana Statistical Service, 2010 Population and Housing Census

3.2 Parity Progression Ratios

Parity progression ratio refers to the probability of a woman transitioning from one-parity to the next parity. Figure 3.2 shows the parity progression ratios aggregated by residence. The estimates show that transition from parity 1 to parity 2 is high in Ghana (0.93). Women in rural areas have a higher probability of having a second child compared to women in urban areas. This pattern is consistent across transitions to all **par**ties reflecting the high fertility in rural areas. The probability of transition from first parity decreases from 0.93 to 0.54 by parity 10 or higher. The corresponding probabilities for urban areas are from 0.92 to 0.53 and 0.94 to 0.55 for rural areas.

Figure 3.2 Women's reported parity progression ratios by residence, 2010
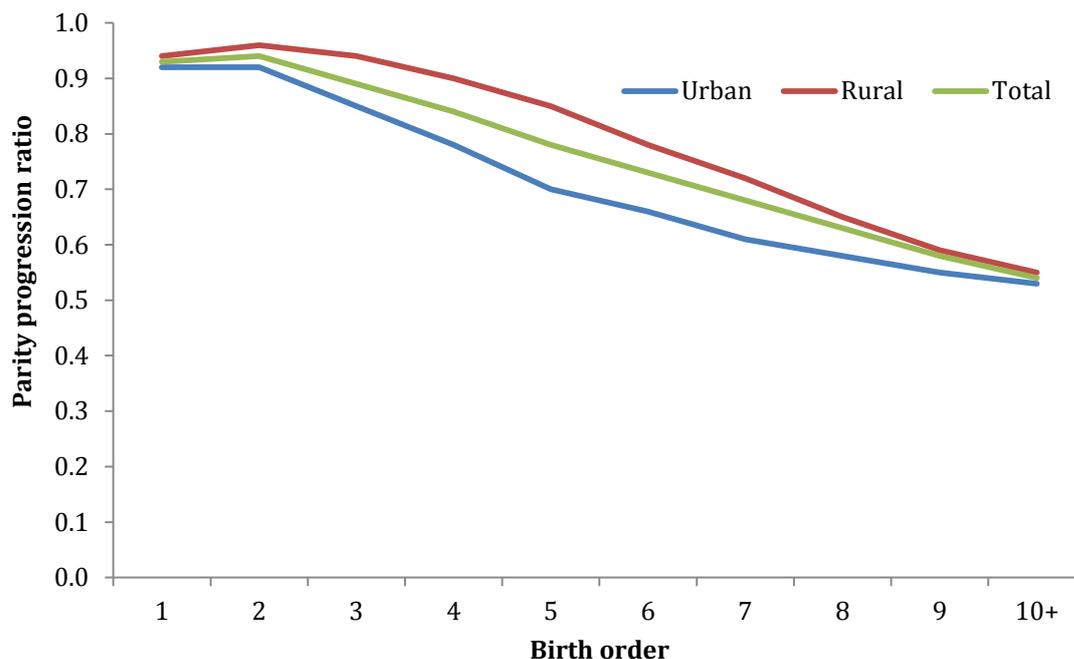
Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 3.3 shows the parity progression ratios by region and residence. The results show that women in the Greater Accra region have the lowest probability of transitions between parity one and seven. However, a woman who attains parity seven in the Greater Accra Region has a similar probability of transitioning to higher parities as those from other regions. Women from the three northern regions (Northern, Upper East and Upper West) have the highest probabilities of transitioning to higher order parities, reflecting the high fertility rates in those regions.

Table 3.3: Women's reported parity progression ratios by region and residence

Region and residence	Parity									
	1	2	3	4	5	6	7	8	9	10+
Western										
Urban	0.93	0.93	0.87	0.80	0.71	0.66	0.61	0.59	0.55	0.53
Rural	0.92	0.96	0.93	0.89	0.85	0.79	0.73	0.66	0.60	0.56
Total	0.92	0.95	0.91	0.85	0.80	0.74	0.69	0.64	0.59	0.55
Central										
Urban	0.94	0.94	0.89	0.82	0.76	0.71	0.66	0.62	0.57	0.54
Rural	0.95	0.96	0.93	0.91	0.85	0.80	0.74	0.67	0.60	0.55
Total	0.94	0.95	0.91	0.87	0.81	0.77	0.71	0.65	0.59	0.55
Greater Accra										
Urban	0.89	0.89	0.79	0.68	0.59	0.56	0.55	0.54	0.53	0.50
Rural	0.91	0.93	0.88	0.81	0.75	0.72	0.68	0.66	0.60	0.62
Total	0.89	0.89	0.80	0.69	0.60	0.58	0.57	0.57	0.55	0.53
Volta										
Urban	0.93	0.92	0.85	0.77	0.69	0.65	0.59	0.59	0.54	0.55
Rural	0.94	0.95	0.91	0.87	0.80	0.76	0.69	0.64	0.58	0.54
Total	0.93	0.94	0.89	0.84	0.77	0.73	0.67	0.63	0.57	0.54
Eastern										
Urban	0.94	0.93	0.87	0.79	0.71	0.67	0.61	0.58	0.54	0.57
Rural	0.94	0.96	0.92	0.88	0.82	0.75	0.69	0.64	0.58	0.56
Total	0.94	0.94	0.90	0.85	0.78	0.72	0.67	0.62	0.57	0.56
Ashanti										
Urban	0.93	0.93	0.87	0.79	0.70	0.64	0.59	0.55	0.53	0.51
Rural	0.94	0.96	0.94	0.90	0.85	0.79	0.71	0.65	0.59	0.56
Total	0.93	0.94	0.90	0.84	0.76	0.71	0.65	0.61	0.57	0.54
Brong Ahafo										
Urban	0.95	0.95	0.91	0.85	0.77	0.72	0.65	0.61	0.58	0.55
Rural	0.95	0.97	0.95	0.91	0.86	0.80	0.72	0.65	0.60	0.55
Total	0.95	0.96	0.93	0.88	0.82	0.77	0.69	0.64	0.59	0.55
Northern										
Urban	0.91	0.97	0.93	0.89	0.83	0.76	0.71	0.62	0.56	0.52
Rural	0.91	0.98	0.96	0.93	0.89	0.83	0.77	0.69	0.61	0.55
Total	0.91	0.98	0.95	0.91	0.87	0.81	0.75	0.67	0.60	0.54
Upper East										
Urban	0.94	0.97	0.92	0.87	0.75	0.69	0.61	0.55	0.54	0.47
Rural	0.95	0.98	0.96	0.92	0.86	0.76	0.68	0.57	0.53	0.46
Total	0.95	0.98	0.95	0.91	0.84	0.75	0.67	0.57	0.53	0.47
Upper West										
Urban	0.89	0.95	0.90	0.84	0.77	0.70	0.65	0.63	0.58	0.48
Rural	0.93	0.98	0.96	0.93	0.88	0.81	0.75	0.62	0.58	0.52
Total	0.92	0.97	0.96	0.92	0.87	0.80	0.74	0.62	0.58	0.52

Source: Ghana Statistical Service, 2010 Population and Housing Census

Figure 3.3 shows the trends in reported parity progression ratio from the 2000 and 2010 PHC. **The F**igure shows that parity progression ratios have declined between 2000 and 2010. The probability of having a second birth for example, has declined from 0.96 in 2000 to 0.93 in 2010. The highest declines were observed for transitions from parity five to higher order births.

Figure 3.3: Trends in reported parity progression ratios, 2000- 2010
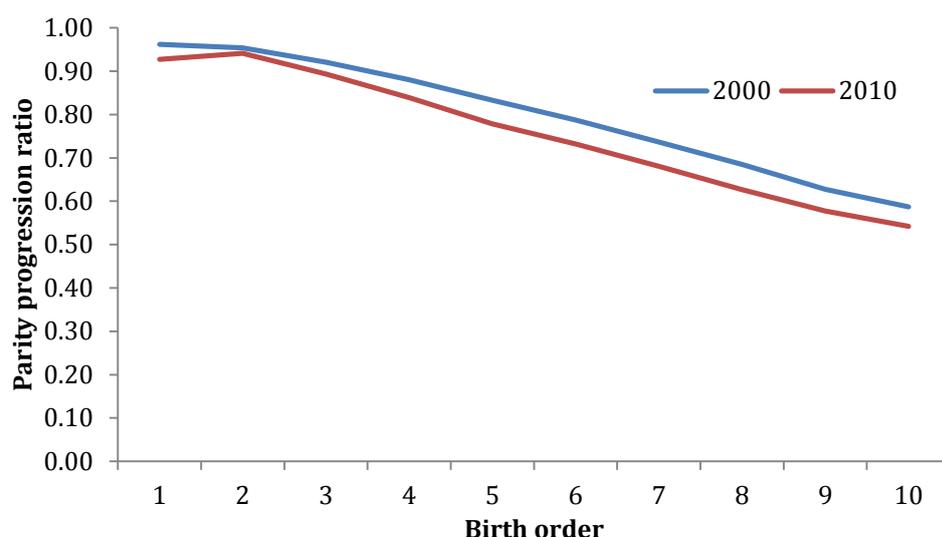
3.3   Mean age at childbearing

The mean age at childbearing in Ghana is 31.7 years. Mean age at childbearing is higher in urban areas (32.3 years) compared to rural areas (31.2 years). The high mean age at childbearing in Ghana reflect the continuing childbearing in older-ages as well as postponement of births. In urban areas, the high mean age at childbearing could reflect postponement of births, whilst in rural areas it is likely to be due to continued childbearing in older-ages. The high mean age at childbearing is also evident across all regions (Table 3.4). The region with the highest mean age at childbearing is the Greater Accra region (33.0 years), reflecting its low fertility rate compared to other regions in the country. Inferring to recent births from the region, analysis of the 2010 PHC data shows that more than a quarter (27.4%) of births in the 12 months preceding the Census was to mothers aged 35-39 years, higher than any other region in the country.

Table 3.4:   Women's reported mean age at childbearing
by region and residence

Region	Urban	Rural	Total
Western	32.1	31.2	31.6
Central	31.5	30.5	31.0
Greater Accra	33.1	31.7	33.0
Volta	31.4	30.8	31.0
Eastern	31.3	30.7	31.0
Ashanti	32.3	30.8	31.7
Brong Ahafo	31.7	31.1	31.4
Northern	32.8	32.7	32.8
Upper East	31.5	31.2	31.3
Upper West	31.8	33.8	32.1

Source: Ghana Statistical Service, 2010 Population and Housing Census

Comparison of the estimates from the 2000 and 2010 PHC, show that there has not been much change in the mean age at childbearing. Mean age at child bearing has decline by only 0.1 years, similar patterns are observed for urban and rural areas. The mean age at childbearing for urban residents increased by only 0.1 years and 0.2 years for rural areas. Similar trends are also observed for the regions, except the Ashanti region which recorded a 1.4 years decline in the mean age at childbearing (Table 3.5).

Table 3.5: Trends in women's reported mean age at childbearing by region, 2000-2010

Region	2000	2010	Change
Western	31.6	31.6	0.0
Central	31.0	31.0	0.0
Greater Accra	33.0	33.0	0.0
Volta	31.1	31.0	-0.1
Eastern	31.0	31.0	0.0
Ashanti	33.1	31.7	-1.4
Brong Ahafo	31.4	31.4	0.0
Northern	32.8	32.8	0.0
Upper East	31.3	31.3	0.0
Upper West	32.2	32.1	-0.1

3.4   Demographic and Socioeconomic Differentials

3.4.1   Marital status

Marriage is a primary indicator of a woman's exposure to pregnancy and childbearing. The distribution of children ever-born and those surviving by marital status are presented in Table 3.6. The distribution shows that there is higher childbearing among women who are currently married, in consensual union or have ever been married. Women who are widowed recorded the highest mean parity. This is more likely to be older women who have completed their childbearing. The urban-rural differentials are pronounced across all statuses, except women who are never married, where the differences are trivial.

Table 3.6: Women's reported mean parities by marital status and residence, 2010

Marital status	Children ever-born			Children surviving		
	Total	Urban	Rural	Total	Urban	Rural
Never married	0.23	0.22	0.23	0.19	0.19	0.2
Consensual union	2.11	1.81	2.45	1.91	1.65	2.22
Married	3.13	2.71	3.54	2.83	2.48	3.18
Separated	2.57	2.41	2.8	2.31	2.18	2.49
Divorced	2.98	2.75	3.32	2.64	2.45	2.91
Widowed	4.05	3.54	4.58	3.47	3.1	3.86

Source: Ghana Statistical Service, 2010 Population and Housing Census

3.4.2   Ethnicity

Table 3.7 shows the reported mean parities for children ever-born and those surviving by ethnicity and residence. The ethnic group with highest mean parity is the Guruma, followed by the Mole-Dagbani and Grusi, all in the Northern part of the country. This is consistent with the high fertility in the northern part of the country. The Ga-Dangme ethnic group mainly found in the Greater Accra region and parts of the Eastern region recorded the lowest mean parities, again mimicking the low fertility in the Greater Accra region.

Table 3.7: Women's reported mean parities by ethnicity and residence, 2010

Ethnicity	Children ever-born			Children surviving		
	Urban	Rural	Total	Urban	Rural	Total
Akan	1.61	2.46	1.93	1.47	2.23	1.76
Ga-Dangme	1.52	2.41	1.8	1.39	2.21	1.65
Ewe	1.48	2.37	1.89	1.35	2.14	1.71
Guan	1.78	2.49	2.11	1.58	2.23	1.89
Guruma	1.78	2.74	2.49	1.59	2.43	2.21
Mole-Dagbani	1.73	2.6	2.23	1.53	2.26	1.95
Grusi	1.64	2.6	2.18	1.46	2.25	1.91
Mande	1.73	2.63	2.09	1.55	2.35	1.87
Other	1.67	2.58	1.99	1.5	2.31	1.78

Source: Ghana Statistical Service, 2010 Population and Housing Census

3.4.3   Religion

Table 3.8 shows women's reported mean parities by religious affiliation and residence. The results show that Traditionalist and those with no religion, who constitutes 5.2 and 5.3 percent of the population respectively, reported the highest mean parities of children ever-born of 3.15 and 2.61, respectively. The Christian groups (Catholics, Protestants and Pentecostals/Charismatics) constituting about 60% of the population, recoded the lowest mean parities of children ever-born (less than 2 children per woman) as well as surviving children. Other Christian groups recorded mean parities similar to the Islamics and Ahmadis. The urban-rural trends where similar to what is observed at the national level.

Table 3.8: Women's reported mean parities by religion and residence, 2010

Religion	Children ever-born			Children surviving		
	Urban	Rural	Total	Urban	Rural	Total
No religion	2.13	2.92	2.61	1.91	2.59	2.33
Catholic	1.41	2.26	1.86	1.28	2.03	1.67
Protestant	1.43	2.26	1.76	1.31	2.05	1.6
Pentecostal/Charismatic	1.57	2.42	1.87	1.43	2.19	1.71
Other Christians	1.79	2.61	2.14	1.63	2.35	1.94
Islam	1.8	2.55	2.13	1.59	2.25	1.88
Ahmadi	1.64	2.57	2.1	1.46	2.25	1.85
Traditionalist	2.66	3.21	3.15	2.31	2.78	2.72
Other	1.61	2.59	2.06	1.46	2.33	1.86

Source: Ghana Statistical Service, 2010 Population and Housing Census

3.4.4   Literacy

Table 3.9 shows women's reported mean parities by literacy and residence. A number of studies in sub-Saharan Africa have shown a strong association between literacy and childbearing, with illiterate women having more children than their literate counterparts. The 2010 PHC Census data shows that 28.2 percent of women of reproductive age are illiterate, 19.8 percent are literate in only English, 8.2 in only a Ghanaian language, 42.6 percent in both English and Ghanaian language, 0.3 percent in English and French and 0.8 percent in English, French and Ghanaian language. The reported high childbearing amongst illiterate women is also the case for Ghana as shown in Table 3.9. The table shows that illiterate women and those literate in only a Ghanaian language have a higher level of childbearing with mean parities of children ever-born of 3.26 and 2.50, respectively.

Table 3.9: Women's reported mean parities by literacy and residence, 2010

Literacy	Children ever-born			Children surviving		
	Urban	Rural	Total	Urban	Rural	Total
Not literate	2.85	3.48	3.26	2.54	3.08	2.89
English only	1.34	1.61	1.43	1.22	1.45	1.29
Ghanaian language only	2.27	2.74	2.50	2.09	2.50	2.29
English and Ghanaian language	1.23	1.64	1.38	1.13	1.49	1.26
English and French	0.98	1.71	1.14	0.89	1.56	1.04
English, French and Ghanaian language	0.65	0.87	0.69	0.58	0.78	0.62

Source: Ghana Statistical Service, 2010 Population and Housing Census

3.4.5   Educational attainment

The data from the 2010 PHC shows that 28.2 percent of women aged 15-49 years have never attended school. A further 13.2 percent have attained primary education. The majority of women of reproductive age (36.8 percent) have attained middle, JSS or JHS education. Only 21.8 percent of women of reproductive age have attained secondary or higher education (13.6 percent have secondary, SSS or SHS, 2.3 percent have commercial, technical or vocational, 3.9 percent with post-secondary and 2.1 with percent tertiary). There is a clear correlation between educational attainment and childbearing (Table 3.10). Women with no formal education, those with primary and those with middle, JSS or JHS education reported higher parities, when compared with those with secondary or higher education.

Table 3.10: Women's reported mean parities by educational attainment and residence, 2010

Educational attainment	Children ever-born			Children surviving		
	Urban	Rural	Total	Urban	Rural	Total
Never attended	2.85	3.48	3.27	2.54	3.08	2.89
Primary	1.96	2.32	2.14	1.78	2.08	1.93
Middle/JSS/JHS	1.61	1.87	1.71	1.48	1.70	1.57
Secondary/SSS/SHS	0.68	0.69	0.68	0.62	0.63	0.62
Commercial/technical/vocational	1.41	1.56	1.44	1.29	1.42	1.32
Post middle/secondary certificate	0.81	0.94	0.84	0.74	0.85	0.76
Tertiary	0.70	0.72	0.70	0.63	0.65	0.63

Source: Ghana Statistical Service, 2010 Population and Housing Census

3.4.6   Economic activity status

The majority (65.9%) of women of reproductive age 15-49 years reported that they are employed. Only 4.7 percent are unemployed, however, almost 1 in 3 (29.4%) are inactive. Figure 3.4 shows women's reported mean parities for children ever-born and those surviving by their economic activity status and residence. The figure shows that in both urban and rural areas women who are employed has higher parity than those who are unemployed or inactive. Childbearing among the inactive population is very low. This could indicate that a high proportion of inactive women are likely to be young and presently in school and also not married.

Figure 3.4: Women's reported mean parities by economic activity status and residence
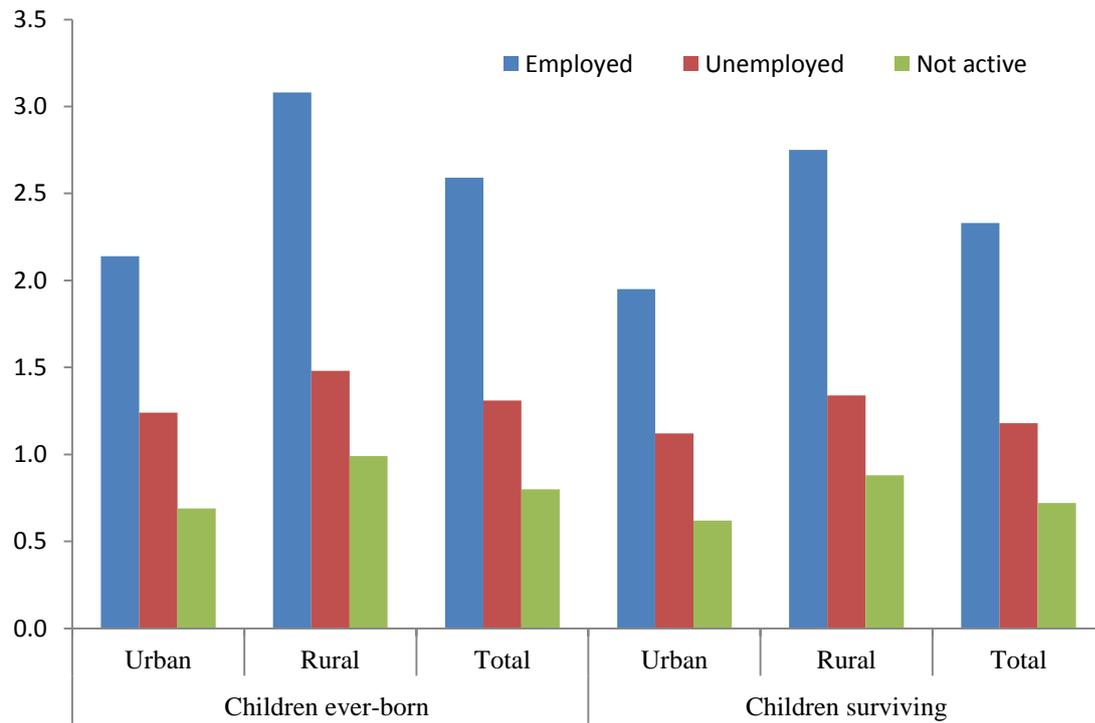
Source: Ghana Statistical Service, 2010 Population and Housing Census

CHAPTER FOUR
RECENT FERTILITY

4.1   Introduction

This section of the report examines the levels, trends and differentials in women's recent fertility. Recent fertility is investigated by examining the Crude Birth Rates (CBR), General Fertility Rates (GFR), Age Specific Fertility Rates (ASFR), Total Fertility Rates (TFR), Gross Reproduction Rates (GRR) and Net Reproduction Rates (NNR) using data on births in the 12 months preceding the 2010 PHC and children ever-born to women age 15-49 years. Similar data from the 2000 PHC is used to examine trends in recent fertility.

Analysis of the 2010 PHC revealed that children born 12 months preceding the Census were more likely to have a mother aged 20-34 years, with 69.1 percent of mothers being in this age group. A further 15 percent were born to women aged 35-39 years. Only 6.6 percent of women who had a birth in the 12 month preceding the Census were adolescents aged 15-19, while 9.2 percent of the births were to mother age 40-49 years.

4.2   Crude Birth Rate and General Fertility Rate

Figure 4.1 shows the CBR and GFR by residence. The CBR is measured as the number of births in a year per 1000 mid-year population. For the computation of fertility measures for the Census year, the census count of the population is commonly used in place of the mid-year population. Although the CBR is a very important and well known measure of fertility, particularly for its contribution to assessing population growth rate (the difference between the CBR and crude deaths rate is the rate of natural increase), its use in practical terms is very limited because it is affected by a number of factors. The CBR is strongly affected by the population composition with respect to the age and sex structure, as well as other factors such as customs and family size expectations which vary between populations. The CBR is particularly not a good measure for comparing fertility between population and across time. However, its contribution to population growth estimation and simplicity makes it a worthwhile measure, particularly in census analysis.

The CBR for Ghana is 24.9 births per 1000 persons (Figure 4.1). The CBR for rural areas (26.9 births per 1000 persons) is slightly higher than the CBR for urban areas (23.0 births per 1000 persons). Comparing with the CBRs reported in the 2008 GDHS, there is an indication that births in the 2010 Census were under-reported. The 2008 GDHS reported a national CBR of 30.8, 27.1 for urban areas and 33.6 for rural areas, suggesting that the CBR at the national level was under reported by 5.9 births per 1000 persons, 4.1 births per 1000 person for urban areas and 6.7 births per 1000 person for rural areas.

The GFR is the first step towards a more refined measure of fertility (Rowland, 2003). The GFR is less affected by differences in age and sex structures. It is measured as the number of births per 1000 women of reproductive age. A limitation of this measure is that the denominator considers all births, regardless of the mother's age, whilst the numerator considers only women of reproductive age 15-49 years. Similarly to CBR, it conceals the variation of birth by age, since only small proportions of births occur in the younger and older ages in the reproductive age-group 15-49 years. The improvement of the GFR in comparison to CBR is that it relates births to prospective mothers in the population. In Ghana, the GFR for the 2010 PHC is 96.6 births for every 1000 women of reproductive age (15-49 years) in the population (Figure 4.1). The GFR

for rural areas (116.2 births per 1000 women of reproductive age) is higher than urban areas (81.1 births per 1000 women of reproductive age).

Figure 4.1: Crude birth rates and general fertility rate by residence
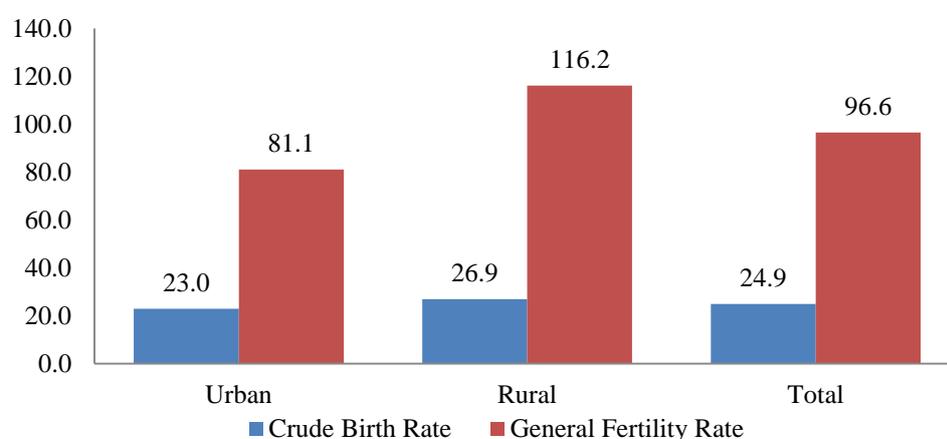
Table 4.1 shows the reported CBR and GFR by region and residence. At the regional level there is not much variation in the reported CBR. The Western, Central, Eastern, Ashanti and Brong Ahafo regions reported CBRs greater than the national average of 24.9 births per 1000 persons. Although the Northern and Upper East regions are known to have high fertility rates (6.8 and 5.0, respectively) (GSS, GHS and ICF Macro, 2009), they have a lower CBR compared to other regions of the country. This demonstrates the impact of age and sex structure on CBR and the dangers of cross-population comparison.

With regards to GFR, there are notable variations between the regions. The Greater Accra region has the lowest GFR of 75.7 births per 1000 women of reproductive age, while the Brong Ahafo region has the highest GFR of 105.9 births per 1000 women of reproductive age. Comparing with the TFR estimates from the 2008 GDHS, it is evident that the GFR does not also capture adequately the differentials in fertility, since it does not account for the variations in births by age.

Table 4.1: Crude birth rate and general fertility rate by region and residence

Region and residence	Crude Birth Rate			General Fertility Rate		
	Total	Urban	Rural	Total	Urban	Rural
Western	26.8	24.2	28.8	105.8	87.9	121.1
Central	26.5	24.7	28.1	105.3	90.8	120.4
Greater Accra	22.7	22.3	26.6	75.7	73.4	100.5
Volta	24.2	22.1	25.3	99.2	82.2	109.2
Eastern	25.4	22.7	27.4	103.9	85.3	120.5
Ashanti	25.7	23.6	29	96.4	81.8	124.2
Brong Ahafo	26.3	23.8	28.3	105.9	87	124.2
Northern	24	21.2	25.1	101.9	82.8	111.3
Upper East	22.7	21.5	23	97.5	80.7	102.8
Upper West	23.1	20.8	23.5	97.4	73.3	103.3

4.2 Age Specific and Total Fertility Rates

As indicated earlier, the likelihood of having a birth differs greatly by age (Rowland, 2003). Fertility differentials by age are very important in explaining patterns in fertility and family-building. Table 4.2 shows the direct and indirect estimates of ASFR and TFR derived from reported data on childbearing using the 2010 PHC. The direct (reported) TFR for the 2010 PHC is 3.28 children per woman. Compared to the estimated TFR from the 2008 GDHS of 4.0, the reported TFR for the 2010 PHC is lower than expected.

To obtain an accurate measure of fertility, the robustness of indirect estimation procedures for the 2010 PHC were investigated. The indirect measures examined were the Brass P/F Ratio technique, the Arriaga 2 method and the Relational Gompertz model technique. Table 4.2 shows the reported TFR, the estimated TFR from the Brass P/F Ratio, Arriaga 2 and the Relational Gompertz model. The TFR for Arriaga 2 was estimated using ASFR and children ever-born data from the 2000 and 2010 PHC. The TFRs from the Relational Gompertz Model is based on the combined ASFR and CEB 2+2 point estimates of the average of women age 25-29 to 35-39 years. The Brass P/F Ratio technique and Relational Gompertz model yielded TFRs that are close to each other compared to the Arriaga method. For consistency and comparability with the previous census and survey estimates, the estimate from the Relational Gompertz Model is preferred. This is further used to examine urban-rural and regional differentials in TFR. It is also used to examine the demographic and socioeconomic differentials in TFR.

Table 4.2: Comparison of direct and indirect estimates of age-specific fertility rates (ASFR) and total fertility rates (TFR)

Age group	Direct estimates	Brass P/F Ratio	Arriaga 2	Relational Gompertz Model
ASFR				
15-19	0.03	0.05	0.04	0.04
20-24	0.10	0.16	0.12	0.14
25-29	0.15	0.22	0.17	0.21
30-34	0.15	0.21	0.16	0.21
35-39	0.12	0.17	0.14	0.17
40-44	0.07	0.09	0.07	0.09
45-49	0.03	0.04	0.03	0.04
TFR	3.28	4.71	3.69	4.57

Source: Ghana Statistical Service, 2010 Population and Housing Census

Figure 4.2 shows the adjusted TFR for urban and rural areas. The figure shows that women resident in rural areas of Ghana have higher fertility that their urban counterparts. The estimated TFR for Ghana is 4.57, 3.92 for urban areas and 5.44 for rural areas. This indicates that women in rural areas on average have 1.52 children more than those in urban areas.

Figure 4.2: Total fertility rates by residence, 2010
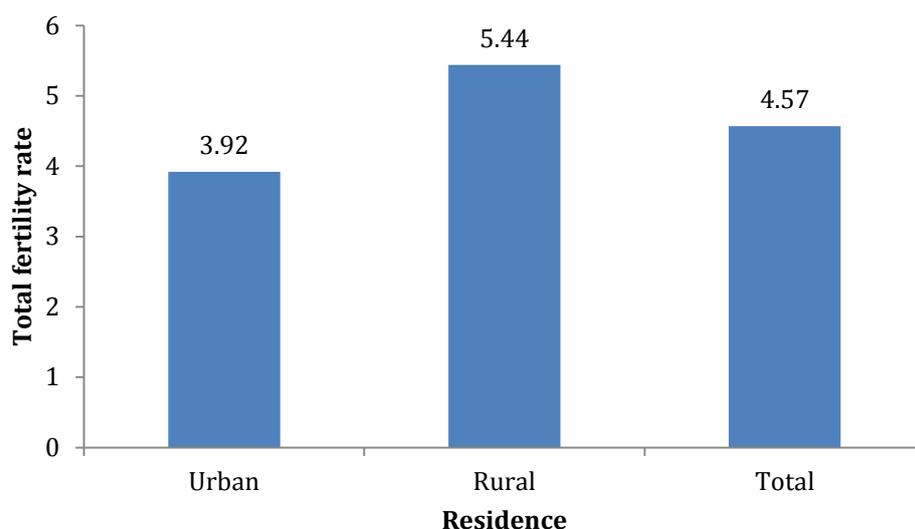
Table 4.3 shows the adjusted TFR by region and residence. There are substantial regional variations in TFR. The Northern region has the highest TFR of 6.01 children per woman, while the Greater Accra region has the lowest of 3.51. The three northern regions (Northern, Upper East and Upper West) recorded the highest TFRs and were the only regions where TFR was greater than 5.0. The TFR in rural areas for the all the regions are higher than those for urban areas. Contraceptive use is one of the main determinants of fertility. The regional fertility estimates correlates with the contraceptive prevalence rates reported in the 2008 GDHS. According to the 2008 GDHS, the Eastern and three Northern regions have the lowest contraceptive prevalence rates in the country (GSS, GHS and ICF Macro, 2009). Also, contraceptive use is higher in urban areas compared to rural areas (GSS, GHS and ICF Macro, 2009).

Table 4.3: Adjusted total fertility rates by region and residence

Region	Urban	Rural	Total
Western	4.20	5.26	4.79
Central	4.44	5.14	4.78
Greater Accra	3.45	4.20	3.51
Volta	3.82	4.85	4.48
Eastern	3.98	4.98	4.53
Ashanti	3.99	5.24	4.28
Brong Ahafo	4.44	5.48	5.01
Northern	5.05	6.45	6.01
Upper East	4.31	5.60	5.31
Upper West	4.47	5.67	5.48

Table 4.4 shows the trends in women's reported age-specific fertility rate, total fertility rate, crude birth and general fertility rates by residence for the 2000 and 2010 PHC. The estimates show a decline in fertility between 2000 and 2010. The reported TFR at the national level declined from 3.99 to 3.28, while the CBR and GFR declined from 31.1 to 24.9 and 130.0 to 96.6, respectively. The decline in TFR in urban areas was 0.22 births compared to 0.96 for rural

areas. Similarly, the decline in CBR and GFR were more pronounced in rural areas than urban areas.

Table 4.4: Trends in women's reported age-specific fertility rate, total fertility rate, general fertility and crude birth rate, 2000-2010

Age group	2000 Census			2010 Census		
	Urban	Rural	Total	Urban	Rural	Total
ASFR						
15-19	0.02	0.06	0.04	0.02	0.04	0.03
20-24	0.09	0.18	0.13	0.07	0.15	0.10
25-29	0.13	0.21	0.17	0.13	0.18	0.15
30-34	0.14	0.20	0.17	0.13	0.16	0.15
35-39	0.11	0.17	0.14	0.11	0.14	0.12
40-44	0.07	0.11	0.09	0.06	0.08	0.07
45-49	0.05	0.07	0.06	0.03	0.04	0.03
TFR	3.00	4.90	3.99	2.78	3.94	3.28
CBR	26.7	33.8	31.1	23.0	26.9	24.9
GFR	100.1	155.5	130.0	81.1	116.2	96.6

Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 4.5 shows the trends in adjusted TFR for 2000 and 2010. The regional patterns in fertility have not changed substantially between 2000 and 2010, although fertility has decline in all regions (Table 4.6). The correlation between the 2000 and 2010 TFR is 0.96. Ghana's TFR declined from 5.66 to 4.57, representing a decline of 1.09 births per woman on average. The Upper West region had the highest TFR in 2000 with a TFR of 6.97; however in 2010 the Northern region recorded the highest TFR of 6.01. The Ashanti and Upper West regions recorded the highest declines of 1.41 and 1.49 births per woman on average, respectively. The Eastern and Greater Accra regions recorded the lowest declines of 0.77 and 0.79 births per woman on average, respectively.

Table 4.5: Trends in adjusted total fertility rate, 2000 - 2010

Region	2000	2010	Change
Western	6.10	4.79	-1.31
Central	5.76	4.78	-0.98
Greater Accra	4.30	3.51	-0.79
Volta	5.47	4.48	-0.99
Eastern	5.30	4.53	-0.77
Ashanti	5.69	4.28	-1.41
Brong Ahafo	5.97	5.01	-0.96
Northern	7.03	6.01	-1.02
Upper East	6.47	5.31	-1.16
Upper West	6.97	5.48	-1.49
All	5.66	4.57	-1.09

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.3 Gross and Net Reproduction Rates

The gross and net reproduction rates are two demographic measures for examining the rate of reproduction and changes in population from one generation to another. They are used to compare the sizes of the population of daughter's generation to that of their mother's. The Gross Reproduction Rate (GRR) is the average number of daughters that would be born to a woman

during her lifetime if she passed through her child-bearing years conforming to the age-specific fertility rates of a given year. The limitation of this measure is that it ignores the fact that some women will die before completing their childbearing years (Rowland 2006; Hinde 2009).

The Net Reproduction Rate (NRR) is a more refined measure of population reproduction which considers that not all women will survive to the end of their reproductive age (Rowland 2006; Hinde 2009). The NRR is the average number of daughters that would be born to a woman if she passed through her lifetime conforming to the age-specific fertility and mortality rates of a given year. An NRR greater than one will indicate that the child's generation is larger than that of the mother's, implying that the population is growing.

Figure 4.3 shows the NRR and GRR for the 2010 PHC. The NRR and GRR for both urban and rural areas are greater that one indicating that the population is growing. Given that the mean age at childbearing for Ghana is 31.7, the estimated NRR of 1.45 suggest that if the present generation of daughters conform to the age-specific fertility and mortality rates reported for the 2010 PHC, then the next generation of daughters (that is in 31.7 years) will be 45 percent more than the present generation of mothers. In urban areas, the next generation of daughters (in 32.3 years) will be 23 percent higher than the present generation of mothers and 72 percent higher (in 31.2 years) in rural areas.

Figure 4.3: Gross and Net Reproduction Rates by residence, 2010
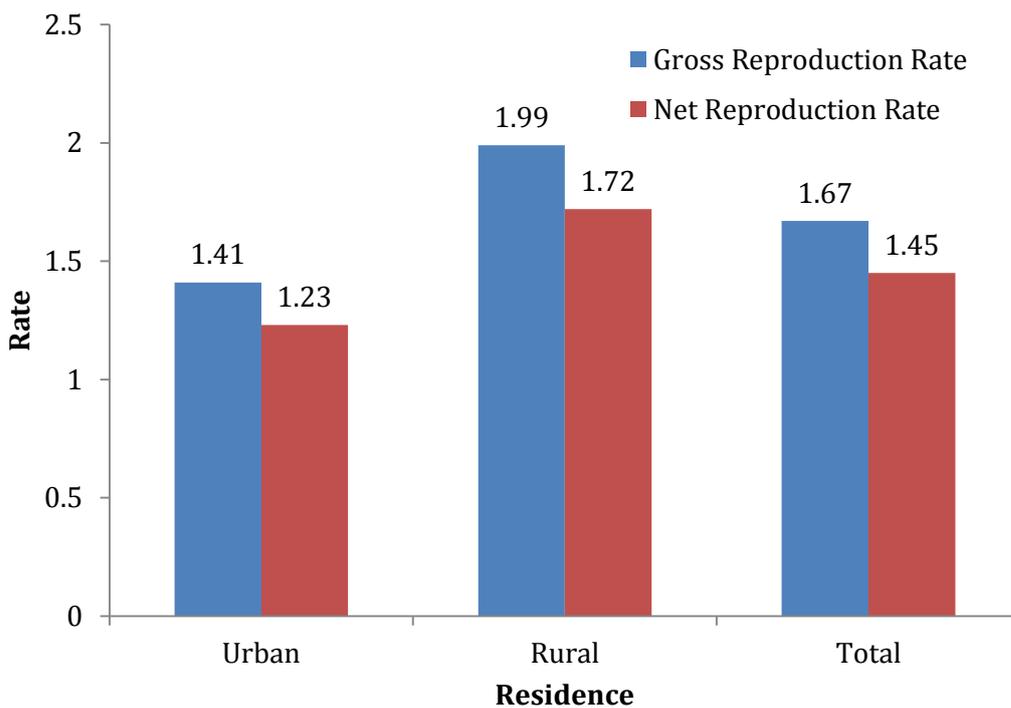
Table 4.6: Gross and Net Reproduction Rates by region, 2010

Region	Gross Reproduction Rate			Net Reproduction Rate		
	Total	Urban	Rural	Urban	Rural	Total
Western	1.81	1.54	2.04	-	-	-
Central	1.84	1.60	2.10	-	-	-
Greater Accra	1.30	1.27	1.69	-	-	-
Volta	1.74	1.46	1.90	-	-	-
Eastern	1.80	1.50	2.07	-	-	-
Ashanti	1.65	1.43	2.09	-	-	-
Brong Ahafo	1.80	1.51	2.09	-	-	-
Northern	1.79	1.47	1.95	-	-	-
Upper East	1.75	1.43	1.85	-	-	-
Upper West	1.75	1.41	1.85	-	-	-
All	1.67	1.41	1.99	-	-	-

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.4 Demographic and Socioeconomic Differential

Studies investigating the determinants of fertility have reported significant differentials by demographic and socioeconomic characteristics. This section of the report examines the differentials in adjusted TFR by women's marital status, ethnicity, religious affiliation, literacy status, educational attainment and economic activity status.

4.4.1 Marital status

Table 4.7 shows the adjusted TFR by marital status of women and residence. The results show that women who have never married have the lowest fertility rate. Widowed women recoded the highest TFR of 4.51 (4.06 for those in urban areas and 5.04 for their counterparts in rural areas). The high TFR among widowed women may reflect the fact that these are more likely to be older women who have completed childbearing. The TFR of married women is 4.43, 3.88 for those in consensual unions and 3.21 and 2.98 for those who are divorced and separated, respectively.

Table 4.7: Adjusted Total Fertility Rate by marital status and residence

Marital status	Total	Urban	Rural
Never married	1.62	1.50	2.14
Consensual union	3.88	3.37	4.53
Married	4.43	3.75	5.19
Separated	2.98	2.77	3.40
Divorced	3.21	3.19	3.52
Widowed	4.51	4.06	5.04

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.4.2 Ethnicity

Table 4.8 shows the adjusted TFR by ethnicity and residence. There are substantial variations in TFR by ethnicity. The Guruma ethnic group have the highest TFR of 6.13. The Mole-Dagbani, Grusi and Mande ethnic groups all have TFRs greater than 5.0. The Ga-Dangme have the lowest TFR of 3.98. Similar patterns are evident for urban and rural areas, however for all the ethnic groups fertility is higher in rural areas compared to urban areas.

Table 4.8: Adjusted Total Fertility Rate by ethnicity and residence

Ethnicity	Urban	Rural	Total
Akan	3.94	5.06	4.36
Ga-Dangme	3.55	4.99	3.98
Ewe	3.59	4.76	4.11
Guan	4.28	5.40	4.84
Guruma	4.69	6.57	6.13
Mole-Dagbani	4.50	5.73	5.26
Grusi	4.10	5.80	5.11
Mande	4.33	5.97	5.05
Other	4.19	6.19	4.91

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.4.3 Religious affiliation

There are considerable differentials in fertility rates by religious affiliation (Table 4.9). Women with traditional belief, those who belong to the Islamic religion and those with no religious affiliation have TFR greater 5 children per woman. Those with traditional belief reported the highest TFR of 5.93, followed by Islamic women (5.22) and then those with no religion (5.06). The Protestants have the lowest TFR of 4.14. In rural areas, only Protestant have TFR below 5.0.

Table 4.9: Adjusted total fertility rate by religion and residence

Religion	Urban	Rural	Total
No religion	4.28	5.51	5.06
Catholic	3.71	5.05	4.44
Protestant	3.65	4.89	4.14
Pentecostal/Charismatic	3.79	5.13	4.25
Other Christians	4.16	5.31	4.64
Islam	4.56	5.98	5.22
Traditionalist	4.65	6.09	5.93
Other	3.86	5.04	4.37

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.4.4 Literacy

The 2010 Census collected information on the literacy status of women. Women were asked about their literacy in English, French and Ghanaian language. Those literate in a combination of the languages were also recorded. Table 4.10 shows the adjusted TFR by literacy status and residence. The results show that literacy status has an impact on fertility. Illiterate women have the highest TFR of 5.41 children per woman of reproductive age on average, whilst those literate in only Ghanaian language have TFR of 4.30. The fertility rate for all women who are literate in English language is below 4.0.

Table 4.10: Adjusted total fertility rate by literacy and residence

Literacy	Urban	Rural	Total
Not literate	4.68	5.81	5.41
English only	3.53	4.76	3.81
Ghanaian language only	3.90	4.86	4.30
English and Ghanaian language	3.67	4.64	3.96
English and French	2.98	4.08	3.23
English, French and Ghanaian language	3.74	4.20	3.80

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.4.5 Educational attainment

Educational attainment is one of the socioeconomic determinants that have consistently been associated with contraceptive use and fertility. Table 4.11 shows the adjusted TFR by women's educational attainment and residence. The results show that education has an effect on fertility. The higher the level of education, the fewer the number of children a woman has. Women with no education have the highest TFR of 5.41 (urban = 4.68 and rural = 5.81), while those with tertiary education have the lowest TFR of 3.00 (urban = 2.96 and rural = 3.41). The difference in the mean number of children between women with no education and those with tertiary education is more than two (2.41) children per woman of reproductive age, on average.

Table 4.11: Adjusted Total Fertility Rate by educational attainment and residence

Educational attainment	Urban	Rural	Total
No education	4.68	5.81	5.41
Primary	4.16	5.30	4.66
Middle/JSS/JHS	3.67	4.57	3.95
Secondary/SSS/SHS	3.25	3.98	3.38
Commercial/Technical/Vocational	2.96	3.45	3.01
Post-Secondary	3.33	4.06	3.46
Tertiary	2.96	3.41	3.00

Source: Ghana Statistical Service, 2010 Population and Housing Census

4.4.6 Economic activity status

Figure 4.3 shows the adjusted TFR by economic activity status of women and residence. The estimates show that the fertility of women employed and those who are not active are not substantially different. At the national level, the TFR of women who are employed is 4.49, while that for those inactive is 4.77. For women in rural areas, the fertility rate of those who are employed (5.35) and those who are not active (5.25) are also not markedly different. However, in urban areas, women who are inactive have a noticeably higher fertility (4.46) compared to those who are employed (3.83).

Figure 4.3: Adjusted total fertility rate by economic activity status and residence
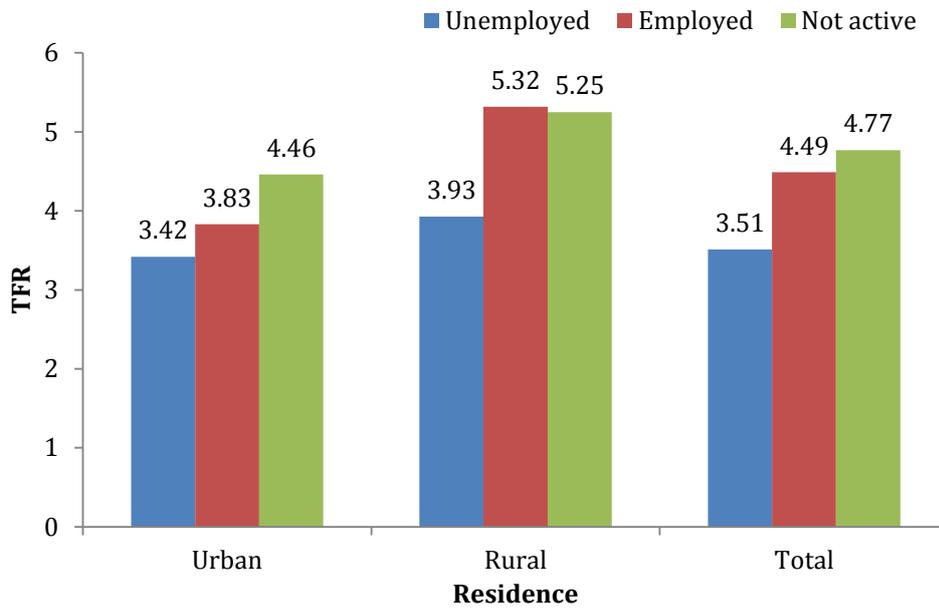
Source: Ghana Statistical Service, 2010 Population and Housing Census

CHAPTER FIVE
HIGH FERTILITY

5.1   Introduction

This section of the report examines recent childbearing among adolescents and older women aged 45 years and older. Early childbearing as well as late childbearing are considered risky to both the mother and baby. Childbearing in these age-groups are considered high risk because they are strong associated with prenatal and delivery complication as well as pregnancy related morbidities and deaths (Phipps and Sowers, 2002; Reynolds, Wong and Tucker, 2006; Blanc, Winfrey and Ross, 2013). Research evidence shows that adolescent and older mothers are more likely to suffer anemia, excessive bleeding, obstructed labour and premature birth, whist their children are more susceptible low birth weight, stillbirth and neonatal deaths (Reynolds, Wong and Tucker, 2006; Christiansen, Gibbs and Chandra-Mouli, 2013; Blanc, Winfrey and Ross, 2013). Many pregnancies amongst adolescents also end in abortions, often unsafe abortions because they are unplanned and unwanted (Christiansen, Gibbs and Chandra-Mouli, 2013). Adolescent mothers are also more likely to lose out on educational opportunities and future prospects. Adolescent fertility in this report refers childbearing to women aged 12-19 years, whilst late fertility refers to childbearing to women aged 45 years and older, in the 12 months preceding the Census.

5.2   Levels and Trends

The 2010 PHC enumerated 12,633,978 women, of which 2,130,178 representing 16.9 percent were adolescents' aged 12-19 years and 2,107,112 representing 16.7 percent were older women aged 45 years or older. The Census enumerated 41,224 adolescents who gave birth in the 12 months preceding the Census, representing 1.94 percent of adolescents and 16, 669 births amongst women aged 45 years and older, representing 0.79 percent of that population (Figure 5.1). Adolescent fertility was mainly concentrated in women aged 15-19 years, of whom 3.10 percent had a birth in the 12 months preceding the Census compared to 0.11 percent of those aged 12-14 years. Adolescent fertility is higher in rural areas, compared to urban areas. Among adolescents in rural areas, 2.62 percent (0.14 percent of 12-14 year olds and 4.33 of 15-19 year olds) gave birth in the 12 months preceding the Census, compared to 1.34 percent in urban areas (0.08 percent of those age 12-14 years and 2.09 of those age 15-19 years). With regards to late fertility, there is higher childbearing among women aged 45-49 years (2.29 percent) compared to those 50 years and older (0.34 percent). Late fertility amongst 45-49 year olds is higher in rural areas (2.90 percent) compared to urban areas (1.74 percent), however childbearing in women aged 50 years and older does not vary between rural and urban areas.

Figure 5.1: Percentage of women who gave birth in the past 12 months in the high risk age-group by residence, 2010
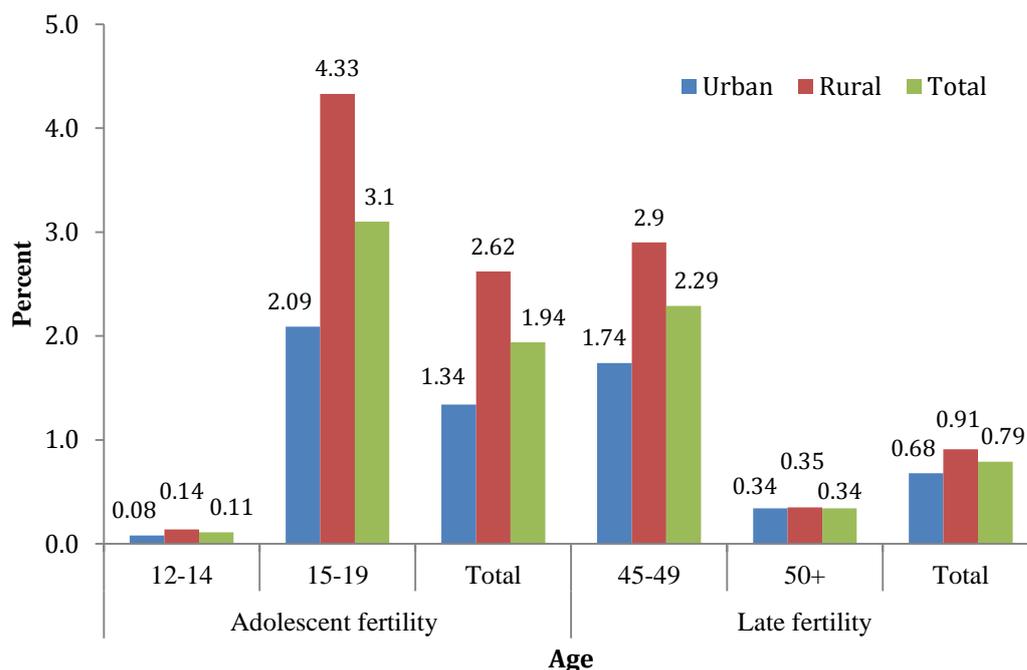
Source: Ghana Statistical Service, 2010 Population and Housing Census

The regional variations in adolescent and late fertility are presented in Table 5.1. In all regions, adolescent fertility is high amongst those aged 15-19 years, whilst late childbearing is predominant amongst women aged 45-49 years and also in rural areas. There are substantial regional variations in adolescent childbearing. Adolescent childbearing ranges from 1.08 percent in the Greater Accra region to 2.67 percent in the Eastern region. Considering adolescents aged 15-19 years, those in the Greater Accra region reported the lowest of rate of childbearing of 1.66 percent, whilst those in the Eastern region reported the highest rate of 4.37 percent. Childbearing in the age-group 12-14 years is very low in all regions.

Table 5.1: Percentage of women who gave birth in the past 12 months in the high risk age-group by region and residence

Region and residence	Adolescent fertility			Late fertility		
	Total	12-14	15-19	Total	45-49	50+
Western						
Urban	1.48	0.07	2.36	0.67	1.61	0.36
Rural	2.77	0.12	4.62	0.95	2.64	0.35
Total	2.17	0.10	3.56	0.82	2.17	0.36
Central						
Urban	2.04	0.10	3.18	0.59	1.78	0.26
Rural	3.07	0.16	5.05	0.63	2.27	0.21
Total	2.56	0.13	4.10	0.62	2.04	0.23
Greater Accra						
Urban	0.98	0.06	1.49	0.80	1.81	0.44
Rural	2.05	0.15	3.28	0.80	2.19	0.36
Total	1.08	0.07	1.66	0.80	1.84	0.43
Volta						
Urban	1.89	0.10	3.00	0.56	1.71	0.23
Rural	2.84	0.17	4.63	0.73	2.61	0.26
Total	2.49	0.15	4.01	0.67	2.30	0.25
Eastern						
Urban	1.84	0.12	2.93	0.51	1.36	0.27
Rural	3.44	0.14	5.76	0.83	2.65	0.31
Total	2.67	0.13	4.37	0.68	2.07	0.29
Ashanti						
Urban	1.03	0.07	1.61	0.62	1.53	0.31
Rural	2.77	0.11	4.72	0.78	2.53	0.28
Total	1.66	0.09	2.69	0.69	1.91	0.30
Brong Ahafo						
Urban	1.71	0.09	2.73	0.64	2.01	0.23
Rural	2.74	0.19	4.56	1.05	2.99	0.45
Total	2.23	0.14	3.64	0.86	2.54	0.34
Northern						
Urban	1.13	0.06	1.72	0.92	2.59	0.46
Rural	1.83	0.14	2.91	1.69	5.01	0.75
Total	1.60	0.11	2.51	1.43	4.20	0.65
Upper East						
Urban	1.37	0.10	2.13	0.75	2.30	0.31
Rural	1.95	0.07	3.28	0.81	3.04	0.28
Total	1.82	0.08	3.02	0.80	2.89	0.28
Upper West						
Urban	0.97	0.13	1.42	1.01	2.71	0.53
Rural	1.63	0.17	2.62	0.92	3.21	0.37
Total	1.51	0.17	2.39	0.93	3.13	0.39

Source: Ghana Statistical Service, 2010 Population and Housing Census

5.2 Demographic and Socioeconomic Differentials

5.2.1 Marital status

Table 5.2 shows the percentage of women in the high risk age-group who gave birth in the past 12 months by their marital status. The results reveal that adolescent childbearing is prevalent among those who are currently married or ever married. Adolescents in consensual unions are more likely to have a child compared to the other groups. Amongst adolescent's aged 12-14

years, 3.04 percent of those in consensual unions and 0.69 percent of those married had a child in the 12 months preceding the Census, compared to only 0.06 percent of those who are never married. The rates are even higher for those aged 15-19 years. Amongst those in consensual union, more than one-fifth (24.3 percent) had a birth in the 12 months preceding the Census. With regards to those currently married, 15.0 percent had a birth. Adolescent childbearing is also high amongst those separated (18.5 percent) and divorced (13.2 percent). This clearly indicates that early marriages and co-habitations lead to early childbearing.

Late fertility is higher amongst married women and those in consensual unions. Amongst those in consensual unions and those married, 1.39 percent and 1.23 percent, respectively had a birth in the 12 months preceding the Census. The rates are higher for those in the age-group 45-49 years, 2.59 percent of those in consensual unions and 2.69 percent of those married had a birth in the 12 months preceding the Census.

Table 5.2: Percentage of women who gave birth in the past 12 months in the high risk age-group by marital status

Marital status	Adolescent fertility			Late fertility		
	Total	12-14	15-19	Total	45-49	50+
Never married	0.6	0.06	0.97	0.45	1.07	0.23
Consensual union	21.94	3.04	24.25	1.39	2.59	0.63
Married	11.16	0.69	14.95	1.23	2.69	0.55
Separated	18.51		18.51	0.63	1.38	0.37
Divorced	13.23		13.23	0.43	1.13	0.25
Widowed	3.99		3.99	0.19	1.27	0.1

Source: Ghana Statistical Service, 2010 Population and Housing Census

5.2.2 Ethnicity

Table 5.3 shows the ethnic distribution of adolescent and late fertility in the 12 months preceding the Census. The results show that there is not much variation amongst the ethnic groups with regards to the percentage of adolescents and women aged 45 years and older who had a birth. The Ewe ethnic group reported the highest percentage (2.13 percent) of adolescents who had a birth, whilst the Guruma reported the highest percentage (1.25 percent) of late childbearing. Childbearing amongst adolescent's age 12-14 years is low for all the ethnic groups. The Ewe and Guruma ethnic groups reported the highest rates (0.13 percent each) of childbearing among adolescents age 12-14 years, whilst the Guan reported the lowest rate of 0.08 percent. Amongst adolescents' age 15-19 years, the Ewe's reported the highest rate (3.38 percent) of childbearing, whilst the Mande reported the lowest rate (2.02 percent). Late fertility is substantially low amongst all the ethnic groups. The Guruma's reported the highest rate of childbearing amongst women aged 45-49 years (3.90 percent) and those 50 years and older (0.5 percent), whilst the Akan's reported the lowest rates of 1.33 percent and 0.16 percent, respectively.

Table 5.3: Percentage of women who gave birth in the past 12 months in the high risk age-group by ethnicity

Ethnicity	Adolescent fertility			Late fertility		
	Total	12-14	15-19	Total	45-49	50+
Akan	1.98	0.11	3.2	0.43	1.33	0.16
Ga-Dangme	1.96	0.11	3.1	0.45	1.35	0.17
Ewe	2.13	0.13	3.38	0.53	1.71	0.17
Guan	1.69	0.08	2.73	0.57	1.73	0.24
Guruma	1.9	0.13	3.09	1.25	3.9	0.5
Mole-Dagbani	1.75	0.1	2.77	0.88	2.76	0.34
Grusi	1.74	0.12	2.75	0.73	2.46	0.23
Mande	1.28	0.15	2.02	0.76	2.38	0.32
Other	1.99	0.04	3.22	0.82	2.59	0.28

Source: Ghana Statistical Service, 2010 Population and Housing Census

5.2.3 Religious affiliation

The distribution of adolescent and late childbearing amongst women by their religious affiliation is shown in Table 5.4. Adolescent women with no religious affiliation reported the highest percentage of childbearing in the 12 months preceding the Census. Adolescent childbearing amongst women aged 15-19 years is substantially higher for those with no religious affiliation when compared with the other groups. Although the Ahmadis' reported the lowest percentage of adolescent childbearing, they reported the highest percentage of old age childbearing.

Table 5.4: Percentage of women who gave birth in the past 12 months in the high risk age-group by religion

Religion	Adolescent fertility			Late fertility		
	12-14	15-19	Total	45-49	50+	Total
No religion	0.23	6.96	4.45	3.09	0.37	0.91
Catholic	0.11	2.78	1.74	2.03	0.31	0.67
Protestant	0.10	2.63	1.65	1.82	0.28	0.60
Pentecostal/Charismatic	0.11	3.06	1.90	1.97	0.37	0.82
Other Christians	0.12	3.92	2.39	2.20	0.31	0.77
Ahmadi	0.09	2.51	1.60	3.25	0.45	1.08
Islam	0.18	3.08	1.97	2.09	0.37	0.73
Traditionalist	0.17	4.16	2.49	3.72	0.37	0.96
Other	0.11	3.11	1.93	2.59	0.48	0.98

Source: Ghana Statistical Service, 2010 Population and Housing Census

5.2.4 Literacy

Table 5.5 shows the percentage distribution of women who gave birth in the 12 months preceding the Census in the high risk age-groups by literacy. The results show that adolescent childbearing is higher amongst illiterate women (4.55 percent) and those literate in Ghanaian language only (3.33 percent). The rates are particularly higher for those age 15-19 years. Overall, late childbearing is higher amongst women literate in English and French (0.95 percent), however the rate is much higher for illiterate women aged 45-49 years (3.05 percent).

Table 5.5: Percentage of women who gave birth in the past 12 months in the high risk age-group by literacy

Literacy	Adolescent fertility			Late fertility		
	Total	12-14	15-19	Total	45-49	50+
Not literate	4.55	0.35	6.2	0.78	3.05	0.31
English only	1.69	0.08	3.02	0.92	1.88	0.44
Ghanaian language only	3.33	0.16	6.09	0.84	1.95	0.36
English and Ghanaian language	1.45	0.09	2.26	0.76	1.63	0.39
English and French	1.48	0.15	2.09	0.95	2.07	0.38
English, French and Ghanaian language	0.59	0.04	0.81	0.68	1.19	0.43

Source: Ghana Statistical Service, 2010 Population and Housing Census

5.2.5 Educational attainment

Table 5.6 shows some evidence of a link between educational attainment and adolescent childbearing. Childbearing amongst adolescents is higher amongst women with no formal education. The results show that 4.56 percent of adolescents (0.35 percent of 12-14 year olds and 6.22 percent of 15-19 years olds) with no formal education gave birth in the 12 months preceding the Census. Late childbearing among women aged 45-49 years is also higher (3.05 percent) amongst women with no education. The percentages do not vary substantially amongst those age 50 years and older.

Table 5.6: Percentage of women who gave birth in the past 12 months in the high risk age-group by educational attainment

Educational attainment	Adolescent fertility			Late fertility		
	Total	12-14	15-19	Total	45-49	50+
No formal education	4.56	0.35	6.22	0.78	3.05	0.31
Primary	1.43	0.09	4.33	0.85	2.3	0.33
Middle/JSS/JHS	2.08	0.09	3.03	0.8	1.65	0.4
Secondary/SSS/SHS	0.76	0.34	0.78	0.87	1.62	0.5
Commercial/technical/vocational	1.81		1.81	0.76	1.22	0.53
Post-secondary	1.1		1.1	0.65	1.46	0.41
Tertiary	0.11		0.11	0.9	1.61	0.51

Source: Ghana Statistical Service, 2010 Population and Housing Census

5.2.6 Economic activity status

Figure 5.2 shows the percentage of adolescents and older women who gave birth in the 12 months preceding the Census by their economic activity status. The results show that childbearing is substantially higher amongst unemployed adolescents. Almost one-tenth (9.74 percent) of unemployed adolescents gave birth in the 12 months preceding the Census, compared to 4.19 percent of those employed and 1.11 percent of those inactive. Overall, late fertility is higher for women who are employed, however for those age 45-49 years, the rate is higher amongst those inactive.

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Figure 5.2: Percentage of women who gave birth in the past 12 months in the high risk age-group by economic activity status, 2010
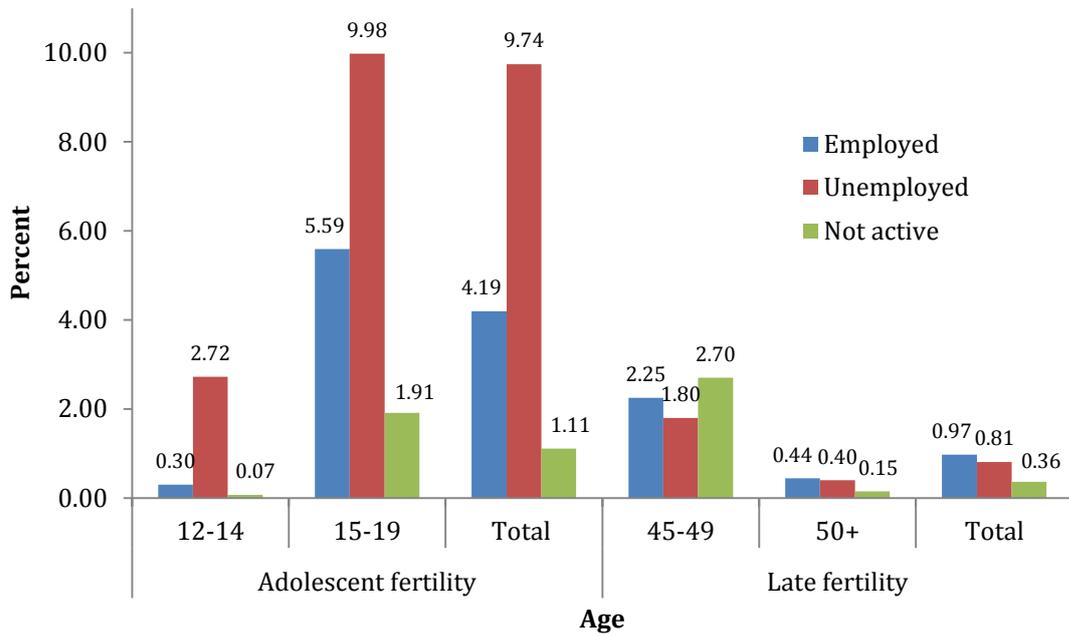
Source: Ghana Statistical Service, 2010 Population and Housing Census

CHAPTER SIX
NUPTIALITY

6.1   Introduction

This section of the report examines the levels, trends and differentials in marital status and age at entry into marriage using the singulate mean age at marriage. Marriage is considered one of the important demographic factors. In most societies, exposure to risk of pregnancy and childbearing takes place predominantly in marital unions. Research evidence shows that shifts in the age at marriage have contributed substantially to fertility changes (Jones, 2007). Societies that have experienced delayed marriages have also experienced a decline in fertility. Marriage is not only an important demographic factor because of its contribution to fertility and population growth but also family formations and living arrangements as well as their changes and impacts, particularly on women and children.

In Ghana, there are three main types of marriage that are recognised - customary, ordinance and Islamic marriage. The consummation of customary marriage involves performance of a traditional rite which involves the family of the bridegroom paying a bride-price or dowry to the bride's family. Marriage rites vary among ethnic groups. In 1985, the Government of Ghana regularised customary marriages through the enactment of PNDC Law 112 (Hawkins, 2002). The law mandates that all customary marriages are registered with the state; however there is no prohibition of polygamy. It has to be noted that, although by law all customary marriages are supposed to be registered with the State, this is not always the case. Ordinance marriage conversely is decreed under the law to be monogamous (Bond, 2008). In pre-modern Ghana, customary marriage was the dominant form of marriage, however in recent times customary marriage is a prerequisite for ordinance marriage in most Ghanaian societies. Islamic marriage which is the prescribed system of marriage for Muslims is conducted in accordance with Islamic rules and guided by the doctrines of the Koran and the Hadith.

6.2   Marital Status

6.2.1   Levels and trends

The 2010 PHC collected information on the current marital status of all persons aged 12 years and older. Respondents were disaggregated into six categories - never married; informal, consensual unions or living together; married; separated; divorced and widowed. In this report, informal, consensual unions and living together is simply referred to as 'consensual unions'. Table 6.1 shows the percentage distribution of the population aged 12 years and older by marital status, sex and residence. The table shows that the majority of the population aged 12 years and older are either married (42.9%) or never married (42%). Five percent reported being in consensual unions, 1.9 percent were separated, while 3.4 percent and 4.9 percent were divorced and widowed, respectively. The main differentials in marital status between urban and rural residents are the percentage married and never married. Marriage is higher in rural areas (46.9%) compared to urban areas (39.4%). The percentage in consensual unions, separated and divorce does not vary between urban and rural areas. However, widowhood is slightly higher in rural areas (5.4%) compared to urban areas (4.4 %).

With regards to male-female differentials, Table 6.1 shows that females are more likely to have ever married, however the percentage currently married does not vary substantially between males (41.7%) and females (43.9%). The main differentials are in the proportions widowed.

Widowhood is more likely amongst women (8.1%) compared to men (1.3%). With regards to urban-rural differentials, there is a clear indication that both males and females in rural areas are more likely to have ever married compared to their urban counterparts. Widowhood in both urban and rural areas is more predominant among females than males.

Table 6.1: Percentage aged 12 years or older by marital status, sex and residence

Current marital status	Male			Female			Both sexes		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Never married	48.9	52.1	45.4	35.6	40.4	29.9	42	45.9	37.4
Consensual union	4.6	4.7	4.5	5.4	5.3	5.6	5	5	5
Married	41.7	38.9	44.8	43.9	39.8	48.9	42.9	39.4	46.9
Separated	1.3	1.3	1.4	2.4	2.5	2.2	1.9	1.9	1.8
Divorced	2.2	2	2.4	4.5	4.7	4.3	3.4	3.4	3.4
Widowed	1.3	1.2	1.5	8.1	7.3	9.1	4.9	4.4	5.4

Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 6.2 shows the percentage of the population aged 12 years and older by marital status and region. The percentage married is higher in the three Northern regions (Northern=54.3 percent, Upper East = 49.2 percent and Upper West = 51.1 percent) compared to the other regions. The results further show that consensual unions are rare in the three Northern regions. In all the three Northern regions, less than one percent of the population aged 12 years and older are in consensual unions, compared to a national average of five percent. The Central region recorded the highest divorce rate of five percent, while widowhood was highest in the Upper East region.

Table 6.2: Percentage aged 12 years or older by marital status and region

Region	Never married	Consensual union	Married	Separated	Divorced	Widowed
Western	41.0	3.9	45.3	1.7	4.2	3.8
Central	40.9	5.8	40.6	2.0	5.0	5.7
Greater Accra	46.3	5.6	39.1	2.3	2.9	3.7
Volta	37.8	4.6	44.6	2.8	3.4	6.8
Eastern	39.7	7.0	40.6	2.4	4.6	5.7
Ashanti	44.2	6.7	39.2	1.7	3.8	4.4
Brong Ahafo	42.3	6.3	41.9	1.5	3.7	4.3
Northern	38.9	0.8	54.3	0.9	1.1	4.1
Upper East	39.3	0.6	49.2	1.1	1.2	8.6
Upper West	40.0	0.7	51.1	0.8	0.9	6.6
All	42.0	5.0	42.9	1.9	3.4	4.9

Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 6.3 shows the percentage of the population aged 12 years or older by marital status, age, sex and residence. As expected, the results show that the percentage never married decreases with age, whilst the percentage married increase with age. The proportions separated, divorced and widowed also increases with age. There are clear differentials in the marital status of males and females by age 20-24 years. At 20-24 years, only 11.0 percent of males are married, compared to 32.5 percent of females and by age 25-29 years more than half (56.4%) of females are married compared to about one-third (31.7%) of their male counterparts.

Considering urban-rural differentials, the results reveal that rural residents marry earlier than their urban counterparts. For example, of males age 25-29 years in urban areas, only 34.1 percent were either currently married (24.1%), in consensual union (8.6%) or have ever married (0.7

percent separated, 0.6 percent divorced and 0.1 percent widowed), compared to 54.4 percent in rural areas (42.5 percent married, 9.3 percent in consensual unions, 1.2 percent separated, 1.2 percent divorced and 0.2 percent widowed). The differences are even more pronounced for females. In urban areas about 3 out of every 5 women aged 25-29 years was either currently married or have ever married, compared to more than 4 out of every five for rural areas.

Table 6.3: Percentage of population aged 12 years or older by marital status, age, sex and residence

Current marital status and residence	Total	Age (years)								
		12-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+
					Females					
Urban										
Never married	40.4	94.7	90.4	65.5	37	17.5	9.5	5.9	4.3	3.4
Consensual union	5.3	0.6	2.6	9.1	10.1	7.8	6.2	4.6	3.5	1.7
Married	39.8	4.8	6.4	23.3	48.3	65.8	70.8	69.6	66.4	43.2
Separated	2.5	0	0.3	1.1	1.9	3.1	4	4.8	5.4	4.6
Divorced	4.7	0	0.2	0.8	2.1	4.3	6.6	9.2	11.2	12.1
Widowed	7.3	0	0.2	0.3	0.6	1.6	2.9	5.8	9.2	35.1
Rural										
Never married	29.9	93.7	82.5	39.5	16.1	6.5	3.5	2.3	1.9	2
Consensual union	5.6	0.7	3.9	11.3	10.6	7.9	6.7	5	4.2	1.9
Married	48.9	5.7	12.6	45.4	67.6	77	78.8	76.4	72.5	46.1
Separated	2.2	0	0.5	1.8	2.3	2.7	2.9	3.3	3.5	3.3
Divorced	4.3	0	0.3	1.4	2.5	3.9	5	6.6	8.2	10.2
Widowed	9.1	0	0.2	0.5	0.8	1.9	3.2	6.4	9.7	36.6
All Localities										
Never married	35.6	94.2	86.8	54.7	28.2	12.7	6.8	4.3	3.1	2.7
Consensual union	5.4	0.6	3.2	10	10.3	7.8	6.4	4.8	3.8	1.8
Married	43.9	5.2	9.2	32.5	56.4	70.7	74.4	72.8	69.3	44.6
Separated	2.4	0	0.4	1.4	2.1	2.9	3.5	4.1	4.5	3.9
Divorced	4.5	0	0.2	1.1	2.3	4.1	5.8	8	9.7	11.1
Widowed	8.1	0	0.2	0.4	0.7	1.7	3.1	6.1	9.4	35.8

Source: Ghana Statistical Service, 2010 Population and Housing Census

6.1.2 Demographic and socioeconomic differentials

Ethnicity

Table 6.4 shows the distribution of marital status of the population aged 12 years and older by ethnicity. The results show that amongst the Guruma and Mole-Dagbani ethnic groups about half of the population aged 12 years and older are married. The Akan's and Ga-Dangme reported the lowest marriage rates of 39.7 percent and 38.4 percent, respectively. Consensual unions however, are more pronounced among the Akan's and Ga-Dangme's, but less amongst the Guruma and Mole-Dagbani's. Divorce and separation rates are higher among the Akan, Ga-Dangme, Ewe and Guan, compared to the Guruma, Mole-Dagbani, Grusi and Mande. Widowhood however, does not vary amongst the ethnic groups.

Table 6.4: Percentage aged 12 years or older by marital status and ethnicity

Ethnicity	Never married	Consensual union	Married	Separated	Divorced	Widowed
Akan	42.8	6.2	39.7	2.0	4.6	4.7
Ga-Dangme	42.2	7.6	38.4	3.1	3.2	5.5
Ewe	40.9	5.7	42.5	2.5	3.3	5.1
Guan	42.2	4.2	42.3	2.1	3.4	5.8
Guruma	41.4	1.9	50.4	0.9	1.3	4.1
Mole-Dagbani	40.2	1.9	50.8	1.0	1.3	4.9
Grusi	42.1	2.3	47.1	1.5	1.9	5.2
Mande	44.4	2.4	45.5	0.9	1.8	5.0
Other	47.0	1.5	45.2	1.0	1.5	3.8

Source: Ghana Statistical Service, 2010 Population and Housing Census

Religious affiliation

The theology of particularity posits that religious groups consciously act on the doctrines, beliefs and values of their religion, which influences their behaviour and lifetime choices (Micikas, 2010). In this regard, the doctrines and teachings of many religious groups prohibit divorce and separation, as well as informal and premarital sexual unions. Also, the relationship between region and marital status is very important to understand at the population level, given that, most births in Ghana occur in marriage and contraceptive choices are influenced by religion (Gyimah; Adjei and Takyi, 2011).

Table 6.5 shows the percentage of the population aged 12 years and older by marital status and religion. The results show that the proportion never married is lower for Traditionalist and those with no religion. The Traditionalist reported the highest percentage of currently married and the lowest percentage of consensual unions. Consensual unions are highest for the population with no religious affiliation; with almost 1 in 10 of those aged 12 years and older being in consensual unions. Protestants, Pentecostals and Charismatics reported separation and divorce rates either higher or similar to the national averages of 1.9 and 3.4 percent, respectively. Women of other Christian faiths and those with no religion also reported separation and divorce rates either higher or similar to the national averages.

Table 6.5 Percentage aged 12 years or older by marital status and religion

Religion	Never married	Consensual union	Married	Separated	Divorced	Widowed
No religion	33.5	9.4	43.3	2.9	5.7	5.3
Catholic	43.8	4.6	41.0	1.8	3.3	5.5
Protestant	43.1	5.2	39.6	2.2	4.1	5.8
Pentecostal/Charismatic	44.9	6.2	39.9	2.0	3.4	3.7
Other Christians	41.8	6.4	41.2	1.9	4.1	4.6
Islam	41.9	1.9	49.5	1.0	1.6	4.1
Ahmadi	41.7	3.5	45.4	1.5	2.9	4.9
Traditionalist	27.4	1.7	58.0	1.5	2.4	8.9
Other	40.1	4.9	44.3	2.0	4.0	4.8

Source: Ghana Statistical Service, 2010 Population and Housing Census

Literacy

Table 6.6 shows the distribution of marital status for the population aged 12 years and older by literacy. The table shows that a higher percentage of those who are illiterate and those literate in Ghanaian language only are currently married, compared to other literacy groups. The percentage never married is very small for those who are illiterate. The table also shows that consensual unions are more likely amongst those literate in a Ghanaian language only. Separation and divorce is higher amongst the illiterate and those literate in Ghanaian language only. Separation and divorce rates for this population are higher than the national average. It is worthwhile noting that, widowhood is substantially high amongst the illiterate population.

Table 6.6 Percentage aged 12 years or older by marital status and literacy

Religion	Never married	Consensual union	Married	Separated	Divorced	Widowed
Not literate	17.5	3.6	59.9	2.3	4.7	12.2
English only	55.6	5.5	33.1	1.6	2.4	1.8
Ghanaian language only	30.6	8.3	48.5	2.8	5.3	4.5
English and Ghanaian language	51.5	5.2	36.7	1.6	2.8	2.1
English and French	52.7	5.3	36.9	1.5	2.3	1.3
English, French and Ghanaian language	62.2	3.7	29.6	1.2	2.0	1.3

Source: Ghana Statistical Service, 2010 Population and Housing Census

Educational attainment

Similar to literacy, those with no formal education reported the highest percentage ever married, with 79.1 percent ever married (59.9 percent currently married, 2.3 percent separated, 4.7 percent divorced and 12.2 percent widowed) and 3.6 percent in consensual union. Those with primary and secondary, SSS or SHS are more likely to have never married. It is worthwhile noting that middle school education was abolished in Ghana in the mid-1980s, therefore the population with middle school education are more likely to be older and married compared with those with JSS or JHS of whom some are likely to be recent graduate and young. This could potentially explain the high percentage married amongst those with middle, JSS or JHS. The results also show that education has the potential to delay marriage and lower fertility, given that more than half of those who have tertiary education have never married. Divorce is particularly high among those with no formal education and the high widowhood rate among the illiterate is confirmed by educational attainment. Similarly, widowhood is about two and half times higher among those with no education compared to the national average.

Table 6.7: Percentage aged 12 years or older by marital status and educational attainment

Educational attainment	Never married	Consensual union	Married	Separated	Divorced	Widowed
No formal education	17.4	3.6	59.9	2.3	4.7	12.2
Primary	58.0	5.0	30.2	1.5	2.7	2.7
Middle/JSS/JHS	44.5	6.7	40.5	2.1	3.7	2.5
Secondary/SSS/SHS	64.0	4.4	28.1	1.1	1.5	0.9
Commercial/ Technical/vocational	34.1	5.5	50.4	2.6	4.2	3.2
Post-Secondary	45.8	3.5	44.3	1.5	2.3	2.5
Tertiary	51.3	2.2	43.6	0.8	1.2	0.9

Source: Ghana Statistical Service, 2010 Population and Housing Census

Economic activity status

Table 6.8 shows the percentage distribution of the marital status of the population aged 12 years and older by economic activity status. In some societies economic activity status is a prerequisite to marriage, particularly for men, as they have to demonstrate their ability support their family financially. The results show that marriage is more pronounced (52.0%) amongst those employed, while the majority (70.9%) of those who are not economically active have never married. Less than one-fifth (17.9%) of those not economically active are married. Consensual unions are higher (8.0%) amongst those unemployed compared to the employed (6.4%) and inactive (2.2%). Separation and divorce is higher amongst those employed (2.3 and 4.2 percent, respectively), while widowhood is higher for those inactive (6.1%).

Table 6.8: Percentage aged 12 years or older by economic activity status

Activity Status	Never married	Consensual union	Married	Separated	Divorced	Widowed
Employed	25.4	6.4	57.2	2.3	4.2	4.4
Unemployed	52.0	8.0	32.7	2.1	3.1	2.1
Not active	70.9	2.2	17.9	1.0	1.9	6.1

Source: Ghana Statistical Service, 2010 Population and Housing Census

6.2   Singulate Mean Age at Marriage

As indicated early in the report, entry into marriage is when childbearing becomes socially acceptable in Ghana, although a small proportion of births continue to occur outside marriage. A number of studies have also reported a strong correlation between age at entry into marriage and fertility, with a positive correlation between early entry into marriage and high fertility (Westoff, 2003). This section of the report using data from the 2010 PHC, examines the levels, trends and differentials in age at entry in marital union using the Singulate Mean Age at Marriage (SMAM). SMAM is the average length of single life before entry into a marital union for the first time. A low SMAM implies early entry into marriage, while a high SMAM indicates late entry into marriage.

The SMAM is calculated from the proportions single by age-group applying the following steps:

Step 1: Calculation of the person years lived in a single state, denoted by γ:

$$\alpha = \sum_{k=15-19}^{45-49} \lambda_k * 5$$

Where λ_k is the proportion single in each age-group

Step 2: Estimation of the proportion remaining single at age 50, denoted by β:

$$\beta = \frac{(\lambda_{45-49} + \lambda_{50-54})}{2}$$

Step 3: Estimation of the proportion ever marrying by age 50, denoted by γ:

$$\gamma = 1 - \beta$$

Step 4: Calculation of the number of person-years lived by the proportion not marrying, denoted by δ:

$$\delta = 50 * \beta$$

Step 5: Calculation of SMAM:

$$SMAM = \frac{\alpha - \delta}{\gamma}$$

For detailed information on computing the singulate mean age at marriage, the reader is referred to Hinde (2009).

6.2.1 Levels and trends

Figure 6.1 shows the SMAM by sex and residence. The results show that the mean age at first marriage in Ghana is 26.2 years, 28.6 years for males and 24.1 years for females. This result indicates that women on average enter into marriage four and half years earlier than males. The mean age at first marriage is lower (24.4 years) in rural areas, compared to urban areas (27.5 years). Males in rural areas enter into marriage 2.8 years earlier than their urban counterparts, while females in rural areas enter into marriage 3.4 years earlier than those in urban areas. The mean difference in the age at entry into marriage between males and females in urban areas is 4.3 years and 4.9 years in rural areas.

Figure 6.1: Singulate mean age at marriage by sex and residence
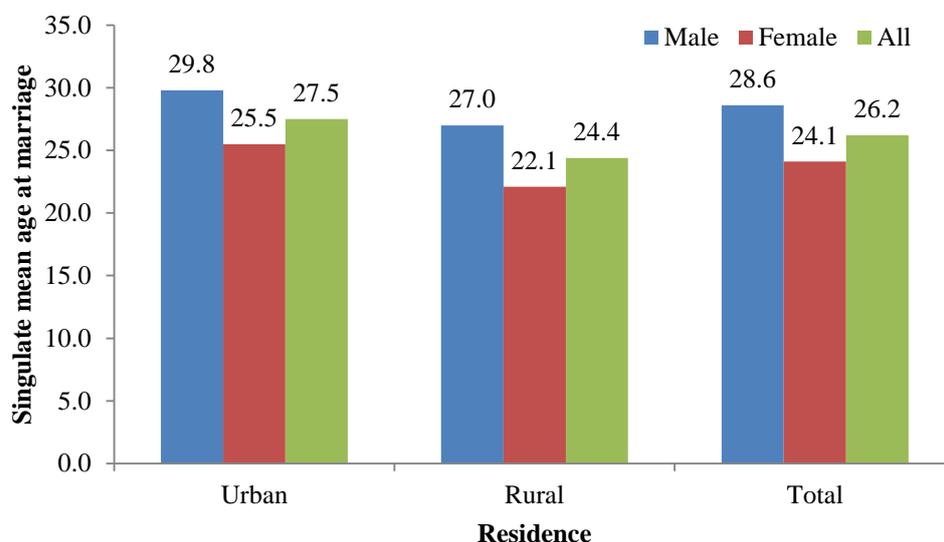
Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 6.9 shows the SMAM by sex, region and residence. The Greater Accra region reported the highest SMAM of 28.2 year (30.1 years for males and 26.4 years for females), whilst the Northern region reported the lowest of 24.3 years (27.1 years for males and 22.0 years for females). The Greater Accra and Ashanti regions are the only regions where the mean age at first marriage is greater than the national average of 26.2 years. The Northern region also reported the highest male-female difference in mean age at first marriage of 5.1 years, compared to the Greater Accra region with the lowest gap of 3.7 years. Similar patterns are also evident for urban and rural areas (Table 6.9).

Table 6.9: Singulate mean age at marriage by sex, region and residence

Region	Urban			Rural			Total		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Western	27.3	27.3	25.4	24.2	26.7	21.9	25.6	27.9	23.5
Central	26.4	26.4	24.6	24.8	27.3	22.7	25.7	27.9	23.7
Greater Accra	28.4	28.4	26.6	26.1	28.3	24.1	28.2	30.1	26.4
Volta	26.1	26.1	24.1	24.4	26.9	22.2	25.0	27.5	22.9
Eastern	27.0	27.0	25.1	24.6	27.1	22.3	25.7	28.1	23.7
Ashanti	28.0	28.0	25.9	24.5	27.3	22.2	26.8	29.3	24.7
Brong Ahafo	26.8	26.8	24.7	24.7	27.6	22.1	25.7	28.4	23.4
Northern	26.0	26.0	23.5	23.5	26.2	21.3	24.3	27.1	22.0
Upper East	26.3	26.3	24.0	24.4	27.0	22.1	24.9	27.5	22.6
Upper West	26.9	26.9	24.7	24.4	26.9	22.2	24.9	27.5	22.7
All	27.5	27.5	25.6	24.4	27.0	22.1	26.2	28.6	24.1

Source: Ghana Statistical Service, 2010 Population and Housing Census

Table 6.10 shows the trends in SMAM by sex, region and residence for the 2000 and 2010 PHC and the changes over time. The results show that the mean age of entry into first marital union has increased from 24.6 years in 2000 to 26.2 years in 2010, representing an increase of 1.6 years. In 2000, the Upper East and Upper West regions reported the lowest mean age at first marriage of 23.0 years; whilst in 2010 the Northern region reported the lowest of 24.3 years. The Greater Accra region reported the highest mean age at first marriage for both 2000 (26.7 years) and 2010 (28.2 years). For males, the mean age of entry into first marriage has increased from 27.1 years in 2010 to 28.6 years in 2010, whilst for female it has increased from 22.4 years to 24.1 years, representing an increase of 1.5 years and 1.7 years, respectively. The Western region recorded the highest increase in the mean age at entry into first marital union of 2.0 years, whilst the Northern and Volta regions recorded the lowest of 0.8 years each. For males in the Northern region, the SMAM increased by only 0.4 years, whilst that for females increased by 1.3 years. The highest increases in the female SMAM was in the Western and Upper West regions, where the SMAM increased by 2.1 years.

Table 6.10: Trends in singulate mean age at marriage by sex, region and residence

Region	Male			Female			Both sexes		
	2000	2010	Change	2000	2010	Change	2000	2010	Change
Western	26.1	27.9	1.8	21.4	23.5	2.1	23.6	25.6	2.0
Central	26.5	27.9	1.4	22.0	23.7	1.7	24.0	25.7	1.7
Greater Accra	28.7	30.1	1.4	24.8	26.4	1.6	26.7	28.2	1.5
Volta	26.7	27.5	0.8	22.1	22.9	0.8	24.2	25.0	0.8
Eastern	26.7	28.1	1.4	22.2	23.7	1.5	24.4	25.7	1.3
Ashanti	27.4	29.3	1.9	22.7	24.7	2.0	24.9	26.8	1.9
Brong Ahafo	26.9	28.4	1.5	21.8	23.4	1.6	24.2	25.7	1.5
Northern	26.7	27.1	0.4	20.7	22.0	1.3	23.5	24.3	0.8
Upper East	25.9	27.5	1.6	20.7	22.6	1.9	23.0	24.9	1.9
Upper West	25.9	27.5	1.6	20.8	22.7	1.9	23.0	24.9	1.9
All	27.1	28.6	1.5	22.4	24.1	1.7	24.6	26.2	1.6

The trends in SMAM by sex, region and residence for the 2000 and 2010 PHC is shown in Table 6.11. In urban areas, the Western region recoded the highest increase in mean age at first marriage of 1.9 years, whilst the Volta and Northern regions recorded the lowest of 0.7 years

each. In rural areas, the highest increases were in the Upper East and Upper West regions (2.0 and 2.1 years, respectively), with lowest increase in the Volta region (0.7 years).

Table 6.11: Trends in singulate mean age at marriage by sex, region and residence, 2000-2010

Region	Urban			Rural		
	2000	2010	Difference	2000	2010	Difference
Western	25.4	27.3	1.9	22.5	24.2	1.7
Central	25.1	26.4	1.3	23.2	24.8	1.6
Greater Accra	27.0	28.4	1.4	24.3	26.1	1.8
Volta	25.4	26.1	0.7	23.7	24.4	0.7
Eastern	25.8	27.0	1.2	23.3	24.6	1.3
Ashanti	26.3	28.0	1.7	23.0	24.5	1.5
Brong Ahafo	25.3	26.8	1.5	23.4	24.7	1.3
Northern	25.3	26.0	0.7	22.7	23.5	0.8
Upper East	25.2	26.3	1.1	22.4	24.4	2.0
Upper West	25.4	26.9	1.5	22.3	24.4	2.1
All	26.2	27.5	1.3	23.1	24.4	1.3

Table 6.12 shows the male-female by urban-rural differentials in the singulate mean age at marriage by region for the 2000 and 2010 PHC. The distributions reveal that for males in urban areas the mean age at first marriage has increase from 28.4 years to 29.8 years (increase of 1.4 years) and 24.1 years to 25.6 years (increase of 1.5 years) for their female counterparts. For those in rural areas, the mean age at first marriage increased from 25.7 years to 27.0 years (increase of 1.3 years) for males and 20.7 years to 22.1 years (increase of 1.4 years) for females. With regards to the regional differentials, in urban areas, the Western region reported the highest increase in mean age first marriage for both males (1.7 years) and females (2.0 years). For rural areas, the Greater Accra, Upper East and Upper West regions, recorded the highest increase in SMAM of 1.7 years each, whilst the Upper West region recorded the highest increase for females of 2.1 years.

Table 6.12: Trends in singulate mean age at marriage by sex, region and residence, 2000-2010

	Male			Female		
Region	2000	2010	Change	2000	2010	Change
		Urban				
Western	27.7	29.4	1.7	23.4	25.4	2.0
Central	27.4	28.5	1.1	23.2	24.6	1.4
Greater Accra	28.9	30.3	1.4	25.1	26.6	1.5
Volta	27.7	28.4	0.7	23.4	24.1	0.7
Eastern	28.3	29.3	1.0	23.8	25.1	1.3
Ashanti	28.7	30.3	1.6	24.1	25.9	1.8
Brong Ahafo	27.9	29.4	1.5	23.1	24.7	1.6
Northern	28.5	28.9	0.4	22.4	23.5	1.1
Upper East	28.0	29.0	1.0	22.8	24.0	1.2
Upper West	28.1	29.3	1.2	23.0	24.7	1.7
All	28.4	29.8	1.4	24.1	25.6	1.5

	Rural					
Western	25.1	26.7	1.6	20.1	21.9	1.8
Central	25.8	27.2	1.4	21.1	22.7	1.6
Greater Accra	26.6	28.3	1.7	22.1	24.1	2.0
Volta	26.2	26.9	0.7	21.5	22.2	0.7
Eastern	25.7	27.0	1.3	21.1	22.3	1.2
Ashanti	25.7	27.3	1.6	20.7	22.2	1.5
Brong Ahafo	26.2	27.6	1.4	20.9	22.1	1.2
Northern	25.9	26.2	0.3	20.0	21.3	1.3
Upper East	25.3	27.0	1.7	20.2	22.1	1.9
Upper West	25.2	26.9	1.7	20.1	22.2	2.1
All	25.7	27.0	1.3	20.7	22.1	1.4

6.2.2 Differentials in singulate mean age at marriage

a. Ethnicity

Table 6.13 shows that the Guruma ethnic group reported the lowest mean age at first marriage of 24.6 years, while the Ga-Dangme reported the highest mean age at first marriage of 26.7 years. Amongst females, the Ga-Dangme reported the highest (24.9 years) mean age at first marriage, whilst the Guruma reported the lowest (22.2 years). In urban areas, the Mande ethnic group marry latest, compared to all the other ethnic groups, while the Mole-Dagbani marry earliest, with a mean difference between the two ethnic groups of one and half years. With regards to rural areas, the Guan's reported the highest SMAM of 25.0 years, whilst the Mole-Dagbani reported the lowest of 23.7 years.

Table 6.13: Singulate mean age at marriage by sex, ethnicity and residence, 2010

	Urban			Rural			Total		
Ethnicity	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
Akan	29.9	25.9	27.8	27.4	22.6	24.8	29.0	24.7	26.7
Ga-Dangme	29.7	26.0	27.8	27.0	22.4	24.6	28.8	24.9	26.7
Ewe	29.7	25.9	27.7	27.0	22.3	24.5	28.5	24.3	26.3
Guan	30.0	25.5	27.5	27.6	22.8	25.0	28.8	24.2	26.3
Guruma	29.6	24.6	27.0	26.4	21.3	23.7	27.3	22.2	24.6
Mole-Dagbani	29.1	24.2	26.5	26.5	21.4	23.8	27.6	22.6	25.0
Grusi	29.5	25.0	27.0	27.3	22.1	24.6	28.3	23.4	25.7
Mande	30.1	25.6	28.0	27.1	21.9	24.3	29.2	24.2	26.2
Other	30.7	24.6	27.5	26.5	20.8	23.3	29.4	23.3	26.1

b. Religious affiliation

Table 6.14 shows the SMAM by sex, religion and residence. The results shows that Traditionalist enters to into marriage at an earlier age (23.4 years) compared to the other religious groups. This is also the case for males and females as well as in urban and rural areas. For all the religious groups, females enter into marriage earlier than their male counterparts. The difference in mean age at first marriage between males and females is highest for those with no religious affiliation (5.6 years) and those of the Islamic faith (5.3 years) and lowest for Protestants (4.1 years). Similar patterns are also observed for urban and rural areas. In urban areas, the difference between males and females SMAM ranges between 3.6 years for Protestants and 5.3 years for those with no religion and also those of Islamic faith. In rural areas the differences are slightly

wider. It ranges between 4.7 years for Protestants to 5.6 years for those with no religious affiliation.

Table 6.14: Singulate mean age at marriage by sex, religion and residence, 2010

	Urban			Rural			Total		
Religion	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
No religion	28.2	22.9	26.3	26.1	20.5	23.9	27.1	21.5	24.9
Catholic	30.2	26.2	28.2	27.6	22.8	25.0	28.9	24.5	26.6
Protestant	30.3	26.7	28.4	27.7	23.0	25.1	29.3	25.2	27.1
Pentecostal/ Charismatic	29.8	25.8	27.6	27.1	22.3	24.4	28.9	24.6	26.5
Other Christians	29.4	25.0	27.0	27.2	22.1	24.4	28.5	23.8	25.9
Islam	29.8	24.5	27.0	26.7	21.4	23.9	28.5	23.2	25.7
Traditionalist	27.0	22.1	24.7	25.8	20.9	23.2	26.0	21.1	23.4
Other	29.7	25.4	27.5	27.1	22.1	24.4	28.7	23.9	26.2
Not stated	29.8	25.6	27.5	27.0	22.1	24.4	28.6	24.1	26.2

c. Literacy

Table 6.15 shows evidence of the impact of literacy on age at entry into marriage. The results show that early entry into marriage is associated with low levels of literacy. The illiterate population enter into marriage earlier than those who are literate in at least English. Those who are illiterate enter into marriage one and half years earlier than those literate in Ghanaian language only, 4.3 years earlier than those literate in English only, 5.0 year earlier than those literate in English and Ghanaian language, 5.7 years earlier than those literate in English and French and 6.7 years earlier than those literate in English, French and Ghanaian language. Similar patterns are also evident for both urban and rural areas and also by sex.

Table 6.15: Singulate mean age at marriage by sex, literacy and residence, 2010

	Urban			Rural			Total		
Literacy	Male	Female	Both sexes	Male	female	Both sexes	Male	female	Both sexes
Not literate	27.1	22.2	23.8	25.4	19.9	22.1	25.9	20.7	22.6
English only	29.8	25.8	27.7	27.4	22.9	25.1	29.1	24.9	26.9
Ghanaian language only	28.4	23.4	25.2	25.9	21.1	23.1	27.1	22.2	24.1
English and Ghanaian language	30.2	26.5	28.4	27.9	23.8	26.0	29.4	25.6	27.6
English and French	30.5	27.0	29.0	27.9	22.3	25.8	29.8	26.0	28.3
English, French and Ghanaian language	30.7	28.6	29.7	28.6	26.4	27.7	30.2	28.2	29.3
Not stated	29.8	25.6	27.5	27.0	22.1	24.4	28.6	24.1	26.2

d. *Educational attainment*

Educational attainment also shows strong association with age at first marriage. Increase education for both males and females delays age at first marriage. The effect of education on age at first marriage is particularly stronger for females. At the national level, the mean age at first marriage for females with no education is 20.6 years, compared to 29.3 years for their counterparts with tertiary education. Those with no education enter into marriage 1.8 years earlier than their counterparts with primary education, 3.3 years earlier than those with Middle,

JSS or JHS, 6.0 years earlier than those with commercial, technical or vocational, 6.2 years earlier than those with secondary, SSS or SHS, 7.6 years earlier than those with post-secondary and 8.6 years earlier than those with tertiary. This pattern is also evident for both urban and rural areas. The pattern of marriage by age observed in this analysis gives a clear indication that education has the potential to delay marriage and the onset on childbearing with a resultant effect on fertility.

Table 6.16: Singulate mean age at marriage by sex, educational attainment and residence, 2010

Educational attainment	Urban			Rural			Total		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
No formal education	27.1	22.2	23.8	24.4	19.9	22.1	25.9	20.7	22.6
Primary	28.3	23.6	25.3	26.3	21.3	23.5	27.2	23.7	24.4
Middle/JSS/JHS	29.0	24.8	26.7	26.9	22.6	24.7	28.1	23.9	25.9
Secondary/SSS/SHS	30.4	27.4	29.1	29.0	25.9	27.9	30.0	27.1	28.8
Commercial/Technical/ Vocational	30.7	27.5	29.0	28.6	25.6	27.2	30.2	27.1	28.6
Post-Secondary	31.5	28.8	30.3	30.1	28.2	29.4	31.2	28.7	30.2
Tertiary	31.9	29.8	31.2	31.4	29.1	30.8	31.9	29.7	31.2

e. Economic activity status

Table 6.17 shows the SMAM by sex, economic activity status and residence. The results show that the population employed on average marry earlier (25.1 years) than those who are unemployed (27.3 years) and those who are inactive (28.2 years). For females, the SMAM for those employed is 22.8 years compared to 24.2 years and 25.7 years for their unemployed and inactive counterparts, respectively. For males, it is 27.6 years for the employed and 31.6 years and 32.3 years, respectively for the unemployed and inactive. Considering the urban-rural differentials, employed females in rural areas on average marry earlier (21.1 years) than their counterparts in urban areas (24.5 years). A similar pattern is also evident for their male counterparts.

Table 6.17: Singulate Mean Age at Marriage by sex, economic activity status and residence, 2010

Economic activity status	Urban			Rural			Total		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
Employed	28.8	24.5	26.5	26.2	21.0	23.5	27.6	22.8	25.1
Unemployed	32.3	25.1	28.2	29.4	22.0	25.0	31.6	24.2	27.3
Not active	32.9	26.6	29.0	31.1	24.2	26.7	32.3	25.7	28.2

CHAPTER SEVEN
CONCLUSIONS

7.1 Key Findings

The evaluation of the 2010 Ghana Population and Housing Census data on recent and lifetime fertility shows that there is under-reporting of both recent and lifetime births, suggesting the need for applying adjustment procedures in the estimation of fertility rates. Comparison of the reported mean parities, ASFR and TFR from the 2010 PHC with those from the 2008 GDHS confirmed the under-reporting of births in the Census. Further investigation, comparing the number of births in the 12 months preceding the Census with children under one year of age, also revealed under-reporting of births. However, it is important to note that the data is free of impossible and implausible parities and also the distribution of mean parities follows the expected sigmoid curve, with lower mean parities at lower ages and a steady increase by age.

Levels, trends and differentials in cumulative fertility were examined by computing mean parities, parity progression ratios and mean age at childbearing. The mean parity of children ever-born is 2.00, 1.61 in urban areas and 2.51 in rural areas, whilst the mean parity of surviving children is 2.24, 1.80 in urban areas and 1.46 in rural areas. At the national level, mean parities of children ever-born varies from 0.11 for women aged 15-19 years to 4.71 for those aged 45-49 years, while the mean parities of surviving children varies between 0.09 to 4.13. Women's reported mean parity has declined from 2.63 to 2.24 between 2000 and 2010. The decline was also observed across all age-groups. With regards to parity progression, the results show that the probability of transition from parity 1 to parity 2 is very high in Ghana, with transition from the first parity to the tenth or higher decreasing from 0.93 to 0.54. Analysis of the trends between 2000 and 2010 revealed that the probability of transition to higher order parities has decline, however the differences are trivial.

The analysis also revealed that the average age of mother at the birth of the children is 31.7 years, 32.3 years for urban residents and 31.2 years for their rural counterparts. The high mean age at childbearing could reflect continuing childbearing in older-ages, particularly in rural areas and postponement of births in urban areas. There has not been much change in the mean age at childbearing between 2000 and 2010, both at the national level and between urban and rural areas. With regards to demographic and socioeconomic differentials in cumulative fertility, the results show that childbearing is higher among women who are currently married, in union or have ever been married, those from the Guruma, Mole-Dagbani and Grusi ethnic groups, those with traditional beliefs and those with no religion. There is evidence that literacy and educational attainment are strongly associated with childbearing. Illiterate women and those with no formal education reported the highest mean parities. As reported by many studies in sub-Saharan Africa, there is a clear indication that education of women has the potential to reduce fertility in Ghana.

Analysis of the levels, trends and differentials in recent fertility was conducted by examining Crude Birth Rates (CBR), General Fertility Rates (GFR), Age Specific Fertility Rates (ASFR), Total Fertility Rates (TFR), Gross Reproduction Rates (GRR) and Net Reproduction Rates (NNR) using data on children ever-born and births in the 12 months preceding the Census. The CBR for Ghana is 24.9 births per 1000 persons, 26.9 births per 1000 persons in rural areas and 23.0 births per 1000 persons in urban areas. A comparison of the CBR from the 2010 PHC with those from the 2008 GDHS shows that births in the 2010 Census were under-reported. The GFR which account for the age and sex of the population, revealed a birth rate of 96.6 births for every

1000 women of reproductive age (15-49 years) in the population, 116.2 births per 1000 in rural areas 81.1 births per 1000 in urban areas.

The estimate net and gross reproduction rates are greater that one indicating that the population is growing. The net reproduction rate of 1.45 suggest that if the present generation of daughters conform to the age-specific fertility and mortality rates reported for the 2010 PHC, then the next generation of daughters will be 45 percent more than the present generation of mothers. In urban areas, the next generation of daughters will be 23 percent higher than the present generation of mothers and 72 percent higher in rural areas.

The reported TFR for the 2010 PHC is 3.3, 3.1 for urban areas and 3.9 for rural areas. A comparison with the estimates from the 2008 GDHS clearly shows that births are under-reported in the Census as confirmed by the evaluation of the data presented in section 2.3 of the report. To obtain accurate measure of fertility, the robustness of indirect estimation procedures for the 2010 PHC were investigated. The indirect measures examined were the Brass P/F Ratio technique, the Arriaga 2 method (based on data from the 2000 and 2010 PHC) and the Relational Gompertz model technique. For consistency and comparability with the previous census and survey estimates, the estimates from the Relational Gompertz Model were preferred. The estimated TFRs were based on the combined ASFR and CEB 2+2 point estimates of the average of women age 25-29 to 35-39 years. The adjusted TFR for Ghana is 4.57, 3.92 for urban areas and 5.44 for rural areas, indicating that women in rural areas on average have 1.52 children more than those in urban areas. There are substantial regional variations in TFR. The Northern region has the highest TFR of 6.01 children per woman, while the Greater Accra region has the lowest of 3.51 children per woman. A comparison of estimates from the 2000 PHC with the 2010 PHC shows that fertility has declined in all regions, however the patterns remain similar. The highest declines in TFR of 1.41 and 1.49 births per woman were observed in the Ashanti and Upper West regions, respectively, whilst the Eastern and Greater Accra regions recorded the lowest declines of 0.77 and 0.79, respectively. Analysis of the differentials in adjusted TFR revealed that unmarried women have lowest TFR of 1.62, whilst those married and widowed have the highest rates of 4.51 and 4.43, respectively. There are substantial ethnic differentials in TFR. The Guruma ethnic group has the highest TFR of 6.13. The Mole-Dagbani, Grusi and Mande ethnic groups all have TFRs greater than 5.0, whilst the Ga-Dangme's has the lowest TFR of 3.98. With regards to religious affiliation, women with traditional belief, those who belong to the Islamic religion and those with no religious affiliation have TFRs in excess of 5 children per woman. The results show that literacy status and educational attainment have a strong impact on fertility. All women literate in English have TFRs below 4.0, whilst those illiterate have TFR of 5.51 and 4.30 for those literate in Ghanaian language only. Similar patterns are evident for educational attainment. Considering economic activity status, the results show that TFR is markedly higher amongst women who are employed and those inactive, when compared with those unemployed.

The study also examined the rate of adolescent and late childbearing amongst women 12-19 years and those 45 years and older. Childbearing within these age-groups are considered high risk fertility because they are associated with prenatal and delivery complication as well as pregnancy related morbidities and mortality both for the child and mother. Adolescent fertility is mainly concentrated in women age 15-19 years, of whom 3.10 percent had a birth in the 12 months preceding the Census compared to 0.11 percent of 12-14 year olds. Adolescent fertility is higher in rural areas (2.62 percent), compared to urban areas (1.34 percent). With regards to late fertility, there is high childbearing among women aged 45-49 years (2.29 percent) compared to those 50 years or older (0.34 percent). Late fertility amongst 45-49 year olds is higher in rural areas (2.90 percent) compared to urban areas (1.74 percent), however childbearing in women age 50 years and older does not vary between rural and urban areas.

There are substantial regional variations in adolescent childbearing. Adolescent childbearing ranges from 1.08 percent in the Greater Accra region to 2.67 percent in the Eastern region. Amongst adolescents' age 15-19 years, those in the Greater Accra region reported the lowest of rate of childbearing of 1.66 percent, whilst those in the Eastern region reported the highest rate of 4.37 percent. Analysis of the demographic and socioeconomic differentials shows that adolescent childbearing is mainly within marriage and unions. Amongst those age 12-14 years, 3.04 percent of those in consensual unions and 0.69 percent of those married gave birth in the 12 months preceding the Census, compared to only 0.06 percent of those who are never married. The rates are even higher for those age 15-19 years. More than one-fifth (24.3 percent) of those in consensual union and 15.0 percent of those currently married had a birth. Also, 18.5 and 13.2 percent of those separated and divorced had a birth, respectively. There is a negative trajectory of higher levels of education and adolescent childbearing. Late fertility is also higher for those married and in consensual unions.

The analysis further examines the levels, trends and differentials in marital status and age at entry into marriage using the singulate mean age at marriage. The majority of the population age 12 years and older are either married (42.9%) or never married (42%). Five percent are in consensual unions, 1.9 percent are separated, while 3.4 percent and 4.9 percent are divorced or widowed, respectively. The percentage of cconsensual unions, separations and divorce does not vary between urban and rural areas, however, the percentage currently married is higher in rural areas (46.9 percent) compared to urban areas (39.4 percent), whilst widowhood is slightly higher in rural areas (5.4 percent) compared to urban areas (4.4 percent). The analysis further shows that females are more likely to be married compared to males. With regards to regional differentials, the results show that the percentage married is higher in the three Northern regions (Northern=54.3 percent, Upper East = 49.2 percent and Upper West = 51.1 percent). Marriage is also predominant amongst the Guruma and Mole-Dagbani, the illiterate and those with no formal education.

Analysis of entry into first marriage using the singulate mean age at marriage, show that the mean age at first marriage in Ghana is 26.2 years, 28.6 years for males and 24.1 years for females, 27.5 years for urban residents and 24.4 years for rural residents. The population aged 12 years and older in the Greater Accra region reported the highest singulate mean age at marriage at 28.2 year (30.1 years for males and 26.4 years for females), whilst those in the Northern region reported the lowest of 24.3 years (27.1 years for males and 22.0 years for females). Between 2000 and 2010, the singulate mean age at marriage increased by 1.6 years. For males it increased by 1.5 years and 1.7 years for females. The Western region recorded the highest increase in the mean age of entry into first marital union of 2.0 years, whilst the Northern and Volta regions recorded the lowest of 0.8 years each. Considering the demographic and socioeconomic differentials in mean age at entry into first marriage, the Guruma reported the lowest mean age at first marriage of 24.6 years, while the Ga-Dangme reported the highest of 26.7 years. The Traditionalist enters to into marriage at an earlier age (23.4 years) compared to the other religious groups. Those who are illiterate enter into marriage 4.3 years earlier than those literate in English only, 5.0 year earlier than those literate in English and Ghanaian language, 5.7 years earlier than those literate in English and French and 6.7 years earlier than those literate in English, French and Ghanaian language. Similarly, Those with no education enter into marriage 1.8 years earlier than their counterparts with primary education, 3.3 years earlier than those with Middle, JSS or JHS, 6.0 years earlier than those with commercial, technical or vocational, 6.2 years earlier than those with secondary, SSS or SHS, 7.6 years earlier than those with post-secondary and 8.6 years earlier than those with tertiary. The results further that the population employed on average marry earlier (25.1 years) than those who are unemployed (27.3 years) and those who are inactive (28.2 years).

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