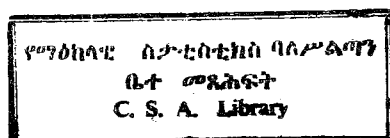TRANSITIONAL GOVERNMENT
OF ETHIOPIA
CENTRAL STATISTICAL AUTHORITY
POPULATION ANALYSIS AND STUDIES CENTER

THE 1990 NATIONAL FAMILY AND FERTILITY SURVEY REPORT

JUNE 1993
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P R E F A C E

The 1990 National Family and Fertility Survey is the first of its kind ever conducted in the country. This survey, among other information, attempted to collect data on basic socio-economic characteristics of the population in the sample households; detailed data on fertility levels and determinants (socio-economic characteristics of women 15-49, current and retrospective fertility performance or birth history; marriage history; health and breastfeeding practices; knowledge, attitude and practice concerning family planning; ... etc.); fertility preference; woman's work history; husband's background characteristics; sexual practices; ... etc.

The report is based on the data compiled from the analyses of the women's questionnaire. The report consists of ten chapters:

Chapter I - briefly discusses the history of demographic data collection in the country and presents the objectives of the survey. It also discusses the sample design and procedures; development of data collection instruments and quality control measures adopted in data collection and data management.

Chapter II - investigates the quality of the data collected during the survey.

Chapter III - briefly treats the background characteristics of the survey women such as age, marital status, literacy status, school attendance, work status ethnic and religious composition.

Chapter IV - describes the nuptiality pattern of the population and the attitudes about ideal ages at marriage.

Chapter V - deals with the fertility levels, patterns and differential and presents estimates of fertility levels.

Chapter VI - presents the levels and patterns of breast-feeding, post partum ammenorrhea and abstinence.

Chapter VII - deals with contraceptive knowledge and use, ever and current use of contraception, socio-economic differentials in the use of contraceptives and intention to use contraception in future.

Chapter VIII - treats family size preferences of women including number of children desired, additional number of children and preference for the sex of children.

Chapter IX - deals with Child health care and survival and investigates the levels and trends in infant and child mortality.

Chapter X - presents the summary of major findings and in conclusins it briefly points out the policy implications of the findings.

Appendix I - treates the methodology for calculation of sampling errors and presents estimates of sampling errors for selected variables.

The 1990 National family and fertility survey was undertaken with the assistance of many individuals and organizations. The survey would not have been successfully completed without the help of the 8,757 women aged 15-49 who have fully cooperated in giving responses to the numerous, difficult and at times too personal questions. The excellent contributions of the headquarters' staff and the regional office staff towards the success of the survey are recognized and highly appreciated. Also, the sincere efforts of the field staff (enumerators, field editors and supervisors) who have discharged their responsibilities in collecting the data under very difficult situations are deeply appreciated.

This report of the survey is mainly prepared by the staff of Population Analyses and Studies Center of Central Statistical Authority and their contributions are highly appreciated. Also, the Methodology Department of Central Statistical Authority, in addition to the preparation of "sample design and procedures" part of Chapter I and the sampling errors section presented in appendix I of this report, was involved in designing and drawing the sample for the survey. Their contributions are well recognized.

The technical assistance provided by the National Household Survey Capability Programme (NHSCP) of the United Nations Statistical Office and Population Branch of the United Nations Department of Technical Cooperation for Development (UNDTCD) are gratefully appreciated.

The survey was carried out with substantial financial assistance from the United Nations Fund for Population Activities (UNFPA). The assistance obtained from the UNFPA was very important in undertaking the project and their contributions are highly appreciated. The staff of the UNFPA office in Addis Ababa have given unreserved support in facilitating the procurement of equipment and supplies required for the project. As a matter of fact, without the active cooperation of these individuals it would have not been easy to carry out the survey on time and their contributions are well recognized.

Finally, the staff of Central Statistical Authority in general and Population Analyses and Studies Center in particular deserve heartfelt congratulations for successfully conducting the survey and preparing this report.

Abdulahi Hasen (Ph.D.)
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TABLE OF CONTENTS

Page

VIII

List of Tables

Chapter III

Chapter VI

XVIII

List of Figures

CHAPTER I

ORGANIZATION OF THE 1990 NATIONAL FAMILY

AND FERTILITY SURVEY

1.1   INTRODUCTION

1.1.1   History of Demographic Data Collection

Demographic data collection in Ethiopia began with the establishment of Central Statistical Office* (CSO) in 1960. The first ever involvement of CSO in the collection of socio-demographic data were the population and housing census of Addis Ababa and Asmara cities in 1961 and 1963 respectively. These censuses were conducted by respective city authorities under the technical guidance of CSO. In these operations, basic demographic data on fertility, mortality and migration have been collected (Municipality of Addis Ababa, 1961 and CSO, 1971: 54). Following these two operations, CSO launched the first-round of multi-purpose National Sample Survey in 1964. The operations of these surveys continued only for four years, i.e., 1964-1967.   These surveys covered the settled rural population of all the regions (except Eritrea and Bale) and 195 urban centers (CSO, 1971a:1). The second round of the National Sample Survey was conducted during 1969-1970 and covered the settled rural population in all the regions (except Eritrea) and 91 major urban centers (CSO, 1974:3). Both the first and the second rounds multi-purpose National Sample Surveys covered various topics such as agriculture (crop and livestock

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* Currently Central Statistical Authority.

production, size of landholding, land tenure, utilization of land
... etc), demography, indebtedness,...etc.

In 1976 CSO carried out a Manpower and Housing Survey in
Addis Ababa. Similar surveys were conducted by the Office (CSO) in
17 other major urban centers of the country in 1978. Further, the
Office undertook a demographic survey of the capital city, Addis
Ababa in 1978. These surveys collected basic demographic data
including data on fertility, mortality and migration (CSO, 1980 and
CSO, 1979).

At the beginning of the 1980's, due to the fundamental
socio-economic changes in the country, there was a great need for
statistical information for the preparation of socio-economic
plans, and for monitoring and evaluation of development programs.
The demand for data further increased with the launching of the
national socio-economic development campaigns and the preparation
of the medium and long term development plans for the country. To
meet this data need, CSO in 1980 conceived a National Integrated
Household Survey Program to collect socio-economic data on a
continuous basis. Under this program, the Office (CSO) has carried
out surveys on agriculture; demography; manpower; health;
nutrition; household income, consumption and expenditure; prices;
and community level variables. The 1981 demographic survey that was
carried out under this program covered the settled rural population
of all the regions (except Eritrea and Tigray).

In order to further fulfill the demand for socio demographic data particularly the latter, the government through CSO made the necessary preparations to carry out the first ever National Population and Housing Census. This was carried out in 1984 with May 9th serving as the "census night." The census field work was completed, in about two weeks, on the 25th of May 1984. The analysis of the results of the census was presented in a preliminary report produced in 1984 (CSO, 1984) and various regional analytical reports. The analytical report at national level was produced in 1991 (CSA, 1991) and presents the size and characteristics of the population, which include age and sex distribution, ethnic and religious distribution, education, disability, migration, economic activity, fertility, mortality, housing characteristics and population projection.

After the 1984 census, the office (CSA) has carried out a number of socio-economic surveys one of which is the 1986/87 Rural Labour Force Survey. This survey was carried out on quarterly basis for a period of one year, and covered the rural population of all regions, except for Eritrea and Tigray. In this survey basic population data along with data on economic activity, occupation, industry, employment, ... etc. were collected.

The censuses and the demographic surveys conducted so far revealed that as in most of the other developing countries, fertility and mortality levels in Ethiopia are high. The total fertility rate was estimated to be 7.5 children per woman, the

crude death rate was about 18.00 per 1000 population, and the rate of growth of the population was found to be around 3.0 percent per annum. In July 1990, the population of Ethiopia was estimated to have reached 51.0 million, and if it continues to increase at the observed rate of growth, it is expected to reach about 67.8 million by the turn of the century. The estimated rate of growth poses a serious challenge to the nation, particularly in the provision of health, educational services, employment, and environmental degradation, both in medium and long term perspectives. Thus, the annual rate of population growth must be moderated by reducing the prevailing high fertility. The government has realized the adverse effect of rapid population growth on the national economy and has recently formulated a draft population policy. Although the existing data suggest that fertility is high, there is still a great need for detailed information on the underlying causes of high fertility, fertility variation among regions, and reproductive processes prevailing in different sectors of the society. Such data are needed for the formulation and evaluation of population policies and programs.

To fill in this data gap and to generate a wealth of information on fertility, infant and child mortality and its determinants, CSA in 1990 conducted National Family and Fertility Survey (FFS). The survey was conducted with the financial assistance from UNFPA and technical support from UNDTCD.

1.1.2   Objectives of the Survey   (FFS)

The major objectives of the survey, in the short term, (were):
i)   to obtain reliable information on the current level of fertility, mortality and contraceptive use.

ii)   to collect information on variations in fertility, infant/child mortality and contraceptive use by geographical domain, socio-economic status and other characteristics.

In the long term, it is expected that the 1990 FFS will form the basis upon which similar but more specialized enquiries can be designed. It is hoped that this survey will be the first of a series of similar surveys to be conducted at regular intervals of five years.

1.2 METHODOLOGY

1.2.1   The Sample Design and Procedures

Introduction

The 1990 FFS was designed to provide data on relevant socio-economic and demographic characteristics for the nation as a whole with urban and rural breakdown and separately for each of the specified domains.   A total of eight domains were identified -two urban and six rural.

The prime target of the study were women aged 15-49 found in non-institutionalized households. In addition, husbands currently married to women aged 15-49, community leaders and communities were also covered by the survey. The survey coverage was designed to be national excluding Eritrea, Tigrai, Asseb and Ogaden autonomous regions. These areas were not considered for inclusion at the survey design stage, because of security and other reasons. However, on the other hand, Northern Gondar, Southern Gondar, Northern Wello, and Southern Wello that were expected to be covered by the survey during the survey design stage, couldn't actually be covered at the field operation level, due to security problems. Nomadic areas and areas that were not covered during the 1984 National Population and Housing Census were also not covered during the 1990 FFS.

The sample size at the national level was fixed at 14,680 women aged 15-49 with an allocation of 4,300 and 10,380 women for urban and rural domains, respectively, including allowance for non-response. Roughly equal size sample was then allocated to the domains with consideration of providing equally reliable estimates for each of the domains.

The sample design for the survey was a multi-stage stratified design and self-weighing within domains. The ultimate sampling unit was the household which served as a means for accessing women and husbands to be interviewed.

Sampling Frame

At the time of undertaking the 1990 FFS, the country was divided into 25 administrative regions and five autonomous regions, which in turn is divided into awrajas (sub-administrative regions). Farmers' Associations (FA) and Urban Dwellers' Associations (Kebeles) constitute the lowest administrative unit in rural and urban areas, respectively. These area units, having recognized and distinct boundaries, have been adopted as a base in the formation of the area sampling frame required for the 1990 FFS.

The construction of the area frame was based on the 1984 population census results, with further up-dating of the rural-parts to take into account changes, due to the re-settlement programs that took place after 1984.

Sampling Plan and Implementation

a) Sampling Domains

Taking into account the size of the country and heterogeneity of its population with respect to socio-economic and demographic characteristics as well as with consideration of its varying ecology believed to have differential effects on fertility behaviour and therefore, to provide a firm basis for evolving appropriate policies and programs, it was felt necessary to divide the country into eight (two urban and six rural) domains.

Urban areas were divided into two domains, that is, A) Addis Ababa and B) other urban areas. The other urban areas were further classified into three groups using the 1989 projected population size:

i) Urban areas with population of over 50,000 excluding Addis Ababa (#11)

ii) Urban areas with population of between 10,000 and 50,000 (#58)

iii) urban areas with population of less than 10,000 (#213)

When it comes to the rural areas, six domains were created by considering geographical location and type of area. The first five domains are composed of highland areas and the remaining covered lowland areas. These domains include the following administrative and autonomous regions:-

A. Central highlands: North Shewa, Addis Ababa (rural), East Shewa, South Shewa and West Shewa.

B. South - west highlands: Wellega and Illubabor.

C. Southern highlands: Keffa, Sidamo, North Omo and South Omo.

D. East and South-east highlands: West Hararghe, East Hararghe, Arssi and Bale.

E. North - east and North - west highlands: North Wello, South Wello, East Gojjam West Gojjam, North Gondar and South Gondar.

F.   Low land areas: Assosa, Metekel, Gambela, Borena and Dire Dawa.

b)   Sample Size

The sample size planned for the survey was determined with critical considerations of the number of domains for reporting the survey results, cost, logistical feasibility and the need for data of high quality. In light of this, a decision was made to cover a total sample of 14,680 women, of which 4,300 women were allocated to the urban domains and 10,380 to the rural domains. These were expected to be found in 14,682 households.

Under the urban domain category, a sample of 2,150 women was assumed for each of the domains. In view of this, about 3,702 households had to be sampled of which 1,654 were from Addis Ababa and 2,048 from other urban areas.

For the rural survey, the planned sample size per domain was about 1,730 women. To achieve this size, a sample of 1,830 households per domain was targeted, giving around 11,000 households for the entire rural domains.

c)   Sampling Stages

In selecting the sample, a multi-stage stratified design

was adopted for reasons of administrative convenience and economy. The number of stages varied from urban to rural areas. For the urban domain, two sampling procedures were put into effect with consideration of varying population size and number of kebeles of the urban areas. Addis Ababa had a two stage design:- selection of kebeles at the first stage and selection of households at the second stage. Before selection, kebeles were stratified by Higher Kebeles.

In the urban areas, categorized as "other urban areas," a two stage design was used (selection of kebele at the first stage and selection of households at the second stage) except for the group of urban areas with population of less than 50,000 which had a three stage design: selection of urban areas at the first stage, selection of kebeles at the second stage and selection of households at the third stage. The basis of stratification was population size of urban areas as defined above.

In the rural areas, a two stage design was applied: selection of Farmers' Associations at the first stage and selection of households at the second stage.

Farmers' Associations in rural areas and Kebeles in urban areas were sampled with probability proportional to size, size being the number of households obtained from the 1984 population census result. Using this sampling procedure, a

total of 153 Kebeles (urban) and 308 Farmers' Associations were selected.

In each covered Kebele and Farmers' Association, a listing of non-institutionalized households was carried out by going from house to house. Using the household lists, a systematic sample of households was drawn randomly based on a pre-determined household sampling interval, with a view to achieving a self-weighted design within domains. The household sampling interval, applied in each of the sampled Kebele and Farmers' Association, was provided to the enumerators at the time of field deployment.

An interview of selected households, prior to the individual interview, was used as a means for identifying eligible women and husbands to be included in the survey. Individual questionnaires were then filled in for all women aged 15-49 found in the selected households.

d)   Sample Implementation

Details of the sample implementation, against what was planned, are presented in Table 1.1. From the table, considerable differences between the targeted and actual size of sample, can be observed. The FFS proposed to cover 14,680 women aged 15-49, although it succeeded in covering only 9,104

Table 1.1 The Planned and Actual Sample Size for the FFS

Domain	Expected Sample PA/Kebele	Covered Sample PA/Kebele	Household			Women		
			Planned	Sampled	Interviewed	Planned	Sampled	Interviewed
Urban	153	123	3702	2735	2576	4300	3022	2844
I	56	56	1654	1394	1314	2150	1663	1551
II	97	67	2048	1341	1262	2150	1359	1293
Rural	308	248	10980	6679	6530	10380	6082	5913
I	55	48	6830	1479	1445	1730	1373	1316
II	44	44	1830	1432	1402	1730	1400	1378
III	53	52	1830	1410	1368	1730	1234	1234
IV	55	53	1830	1190	1180	1730	1029	980
V	53	16	1830	516	506	1730	406	400
VI	48	35	1830	652	629	1730	620	605
Total (Urban + Rural)	461	371	14682	9414	9106	14680	9104	8757

women or 62% of the expected number. This was mostly due to non-coverage of sampled areas due to security problems. Thirty Kebeles from the urban domain (other urban areas category) and 60 Farmers' Associations from the rural domain (mostly from the north-east and north-west highlands domain) selected for the survey could not be covered because of security reasons.

e) Response Rate

Table 1.2 shows the response rates (i.e., ratios of actually interviewed households/women to sampled expressed in 100) for each of the domains. From the table it appears that the response rates are relatively higher in the rural than in the urban areas and, generally, all are quite of reasonable magnitude.

Table 1.2:   Response Rate by Domain

Domain		Households (%)	Women (%)
		Response Rate	
Urban			
	A	94.3	93.6
	B	94.4	95.4
Rural			
	A	97.8	95.7
	B	97.9	98.6
	C	97.1	98.5
	D	99.2	95.2
	E	98.4	98.5
	F	96.9	97.9

Taking all together, the reduction in sample size would of course have an effect on the precision of the survey results. However, no serious loss of precision is anticipated,

since most of the results are to be presented in terms of rates, ratios, proportions and percentages and the rural areas are treated as a group instead of separately.

Weighing of the Sample Results

In tabulating the survey results, weights are applied to the sample cases. The weights are developed by taking into account the probability of selection (basic weight) and the non-response rate of the sample units. Non-responses were identified at three levels: area unit level, household level and individual (woman) level.

The weight adjustment is done separately for each of the domains at Kebele and Farmers' Association level, using the following procedure:-

$$W_A = W_b * \frac{m}{m'} * \frac{S_H}{I_H} * \frac{S_W}{I_W}$$

Where:-

W_b = basic weight of a given domain.

m = number of Kebeles/Farmers' Associations selected for the survey.

m = number of sampled Kebeles/Farmers' Associations covered by the survey.

S_H = number of households selected (sampled) from Kebele/Farmers' Association for the survey.

I_H = number of sampled households from Kebele/Farmers' Association actually interviewed.

S_W = number of women selected (sampled) from Kebele/Farmers' Association for the survey.

I_W = number of sampled women from Kebele/Farmers' Association actually interviewed.

W_A = adjusted weight of a given domain.

In the case of a three-stage design, since urban areas were selected at the first stage, adjustment for the non-coverage of the area is required. Hence, n/n' is applied to W_A which is given above, where:-

n = number of urban areas selected (sampled) for the survey.

n' = number of sampled urban areas actually covered by the survey.

1.2.2 Development of Data Collection Instruments

The National Family and Fertility Survey administered as many as six questionnaires for data collection. These were:-

a. Household questionnaire,

b. Socio-economic characteristics of the household questionnaire,

c. Woman's questionnaire,

   d. Husband's questionnaire,

   e. Community leader's questionnaire and

   f. Community questionnaire.

   a. <u>The Household Questionnaire</u>

It was primarily designed to identify women eligible for the individual interview.   All usual members of the household, including those away temporarily and visitors present on the previous night, were listed on a joint <u>dejure</u> and <u>defacto</u> basis. For each person listed in the household schedule, information on age, sex, marital status, relationship to head of the household, ... etc, were recorded.

   b. <u>The Questionnaire on the Socio-economic Characteristics of the Household</u>

This was administered mainly to obtain picture of household's overall socio-economic situation.   It included questions on socio-demographic characteristics of the household, household's sanitary conditions, sources of drinking water, possession of livestock by type; ownership of other household's consumer durables and type and quality of housing unit, ... etc.

   c. <u>The Woman's Questionnaire</u>

It was exclusively administered to women in the reproductive

ages, 15-49 years. It has seven sections and these are:

   i. Respondent's background (age, sex, educational attainment, ... etc);

  ii. Marriage history;

 iii. Birth history;

  iv. Health and breastfeeding practices;

   v. Knowledge, attitude and practice of family planning;

  vi. Fertility preference; woman's work history; husband's background characteristics and sexual practices of

d. The Husband's Questionnaire

This was administered to husbands of selected group of women who were already covered in the survey. The husband's questionnaire also has the following four sections:

   i. Respondent's background (age, sex, educational attainment, occupation, marriage history, etc);

  ii. Knowledge, attitude and practice of family planning,

 iii. Knowledge and practice of abortion and;

  iv. Fertility preferences and sexual practices.

e. The Community Leader's Questionnaire

It was addressed to the chairperson of a Kebele or Farmer's Association and chair person of the Ethiopian Women's Association

at Kebele or Farmers Association level. It consists of questions that help to generate information on the attitude of the community leaders towards the size of the population and population growth of the country and population size and growth of their own community. If they think that the observed population growth for the country or their own community poses a problem, then they were further asked what the government and what they themselves should do to resolve this problem. Information on knowledge, attitude and practice of family planning of community leaders as well as information on social and cultural aspects of the community were ascertained.

f. The Community Questionnaire This was administered at the Kebele or Farmers' Association level. It consists of questions that are meant to generate information on the size of the population of the community, the settlement pattern in the community, the natural resources such as forest, river, lakes, minerals, ...etc., the availability of all weather or dry weather roads, health facilities, educational facilities, information on recent outbreak of famines and communicable diseases, ..., etc.

1.2.3 Quality Control

A number of quality control steps were taken to ensure quality of data of this survey. The first step taken in this direction was to prepare questionnaires which were precise,

conceptually clear and easy to comprehend. A careful review of questionnaires employed by major international demographic and health surveys such as WFS,DHS and PAP-CHILD, was made before designing the survey instruments of the present survey. On the basis of the critical assessment of previous survey questionnaires in the socio-cultural context of Ethiopia and in view of the needs of the country, a first draft of the questionnaires was prepared in English. After critical assessment of the contents of the first draft some improvements, re-wording and re-ordering of the contents, were made and a second draft of the questionnaires was prepared. After the second draft of the questionnaires was prepared, a one-day seminar was organized to receive comments and suggestions from experts in the field and/or data users on the draft questionnaires. The seminar was attended by 30 participants, drawing representatives from various departments of CSA; MCH Department and Planning and Programming Bureau of the Ministry of Health; Statistics Department and Medical Faculty of Addis Ababa University; Population Division and Statistics Division of ECA; UNICEF; FAO;... etc. The participants had a day long discussions and useful comments and suggestions were made on the contents of the draft questionnaires. On the basis of these comments and suggestions, the questionnaires were revised and a third draft was prepared in English, and was translated into <u>Amharic</u> for pre-test. Further, based on these draft questionnaires, instruction manuals for enumerators, field editors and supervisors were prepared. The pre-test was carried out in rural and urban areas of three regions (Addis Ababa, Arssi and Gojjam) involving 15 female enumerators, 6

field editors and 6 male supervisors. Supervisors and field editors were drawn from regular field staff of CSA while female enumerators were recruited exclusively for the purpose of pre-testing only. The enumerators have completed an educational level of grade 12 and above and were aged 20 years and above and could speak the language of the region where they were expected to be deployed. The minimum educational qualification of the field editors and supervisors were high school education and above. The members of the team were subjected to a rigorous training, given by senior staff members of Population Analysis and Studies Center (PASC), before they were sent out to the field for pre-testing. The training period was organized for a period of two-weeks (15-31 December 1989). The training included classroom discussions, mock interview and field practice in filling out the questionnaires in urban and rural areas. The field staff, who have successfully completed the training, were organized into three teams-one each for Addis Ababa, Arssi and Gojjam. Each team was composed of four female enumerators, one female field editor and one male supervisor. The data collection operation was undertaken during the first two weeks of January, 1991. At the time of data collection, each team was accompanied by a senior research staff of the center who has closely monitored administering each questionnaire. This has helped in identifying questions that required re-wording and those which were difficult to administer or received poor responses. The pilot survey has successfully administered 193 household questionnaires, 181 socio-economic characteristics of the household questionnaires, 205 women's questionnaires and 12

Husbands' questionnaires. On the basis of lessons learnt during the pre-testing period and the discussions that followed thereafter, the questionnaires were, then, finalized in English and subsequently, translated into <u>Amharic</u>. The manuals of enumerators, field editors and supervisors were also revised and finalized.

1.2.4   <u>Recruitment and Training of Field Staff</u>

The selection criteria of enumerators, particularly age and education, for the main survey were the same as that of pilot survey, excepting the enumerators in the main survey included only those who have completed their high school education through regular day school and belong to age-group 20-30 years. Pilot survey included some enumerators who were students of night schools and/or aged 40 years and above. These interviewers (i.e., those who received high school education by attending night schools and those aged 40 years and above) were found to be poor performers and therefore, were excluded while recruiting new batch of enumerators for the main survey. For every enumerator needed, 3-4 candidates were enlisted. The senior staff members of the center were involved in the selection of the top ones from the roster of enlisted candidates for three-week training.

The number of persons selected for training were higher than the number actually required as enumerators. This was to compensate for the losses due to failure to cope with the

requirements of training and for other reasons. Following these procedures, 120 enumerators were selected for training from 10 out of 14 regions of the country. The major responsibilities of the female enumerators were to administer the household questionnaire, the questionnaire on the socio-economic characteristics of the household and the woman's questionnaire. To monitor the tasks of enumeration, and to ensure that the field work is done properly, field supervisors and field editors were assigned to work with each team of enumerators. The female field editors were selected from the regular pool of female enumerators of the regional offices of CSA. Thus, a total of 30 best female enumerators were selected from a group of over 100 female regular enumerators to serve as field-editors. The responsibilities of the female field editors were to check whether all the questions were asked and the responses were recorded properly and to make consistency checks i.e., whether responses are in logical sequence, and if need arises to instruct the enumerators to return to the household (respondent) to make the necessary corrections or obtain information on items in the questionnaire not answered. In order to ensure the collection of higher quality data, the field-editors were also required to make spot-checking during the interview, and re-interviewing some households covered in each peasant or urban dwellers' association. They were also responsible for preparing a one page summary of the woman's questionnaire.

A total of 30 best supervisors were selected among 85 regular field supervisors working in the regional offices of CSA. The responsibilities of the supervisors, in addition to handling the administrative and financial management of field work, were to administer the husband's questionnaire, the community leader's and the community questionnaires and prepare a one page summary of the husband's questionnaire. A comprehensive training program was organized for 120 female enumerators, 30 female field-editors, 30 field supervisors, 12 regional coordinators, a number of support staff and junior professional staff of the center, a number of support and professional staff of other departments of CSA. The training was organized in four centers: <u>Addis Ababa</u>, <u>Jimma</u>, <u>Awassa</u> and <u>Harar</u>. The field staff of Shewa, Addis Ababa, and Gojjam regions were given training in Addis Ababa; those of Wellega, Keffa and Illubabor regions were trained in Awassa; and those of Hararge region were trained in Harar.

The training was given by 15 senior staff of CSA (10 from the center, three from field operations division, one from agricultural department, and one from the methodology department of CSA) and six support staff of the center. The woman's questionnaire included some sensitive questions, like frequency of sexual practices, that can only be asked by females and in order to ensure that these questions and similar other sensitive questions are properly asked by female enumerators, each classroom had a senior female professional staff trainer. The training consisted of discussions in classroom, filling in the questionnaires in the classroom

through mock interview, and actual field testing of the questionnaires.

The classroom discussion concentrated on the elaboration of the terms and concepts used in the various questionnaires, discussions and elaboration of the contents of each questionnaire ... and encouraging the trainees to raise issues and questions. Also the classroom sessions included half a day lecture on description of methods of family planning and its use, given by senior staff of the Ethiopian Family Guidance Association. This lecture included demonstration of the various types of family planning devices (the Pill, the IUD, Diaphragm, Condom, Injectable,... etc) including showing video film on the subject.

The mock interview constituted filling in all the questionnaires by the trainers in the classroom, whereby one of the trainees acted as an enumerator and another trainee or one of the trainers acted as respondent. While this interview session was in progress, the other trainees were also given a copy of the relevant questionnaire to fill-in simultaneously. Through this practice the trainees were given the necessary guidance in the act of interviewing. Also, the filled-in questionnaires were checked and corrections were made and the omissions were pointed out to the trainees, so that these were not repeated.

Considering the importance of field practices in administering questionnaire in real life situation, each trainee was asked to fill-in at least five sets of questionnaires in urban and rural areas. Then the filled-in questionnaires were checked by the trainers and its mistakes were discussed in the classroom. At the end of the training, a final examination was given to the trainees and only the successful candidates were deployed to carry-out the survey.

1.2.5 Field Work

a. Deployment of Field Staff

The field staff was organized into teams and each team consisted of four female enumerators, a female field-editor, a supervisor, a cook and a driver. The team was provided with a four-wheel drive vehicle, camping equipment, cooking utensils, ...etc. The number of teams deployed in a region was dependent on the size of a region. For example, as many as seven teams were deployed in Shewa while only one such team was assigned each for Bale and Arssi. Each team was assigned to cover about 4-5 enumeration units, on average. Each region had a Coordinator who served as a liaison officer between the team(s) deployed in the region and the head office in Addis Ababa. The coordinators were responsible for handling survey equipment, documents and supplies (questionnaires, forms, stationery, bags,...etc) and thereby for the distribution of these materials to the field staff. They were

also responsible for the collection of these materials from the field staff and dispatch them onward to the head office after the completion of the field work.

Prior to deployment of the teams, the head of the trainers in each center, divided the number of farmers' associations and urban dwellers' association areas and thereby the number of households equally among the teams deployed in the region.

b. Data Collection

The data collection started around mid-May 1990. The trainers accompanied the team during the first 4-5 weeks of data collection operation. This early supervision on the part of trainers was necessary to ensure that the core members of the enumeration teams have clearly understood their roles and can accomplish their tasks efficiently and take remedial measures, if necessary, at the early stage of data collection, to avoid any pitfalls at the later stage. The data collection activities that have started in mid-May 1990 were completed in most of the regions by mid August and in some of the regions it was completed by the end of August 1991. During this period of data collection, the senior staff of the center and the field operations division of the CSA made a number of supervisory field trips to visit the survey field staff and to check on the quality of their work.

1.2.6 Data Management

All completed questionnaires were brought back to Addis Ababa for final editing, coding and processing. A task force was created to edit, code and process the Family and Fertility Survey data during the last quarter of 1990. At the beginning, summary data collected from woman's and husband's questionnaires were edited and coded. However, only the summary data obtained from woman's questionnaire were processed to bring out the Preliminary Report of the survey that was printed in August, 1991 (CSA, 1991).

The analysis of the data of the main questionnaires started with manual editing and coding. The coding and editing activity was performed by the coding editing staff of the office with close supervision by senior professionals. Data entry was made using the ISSA (Integrated System for Survey Analysis) computer package program using personal computers. Senior data entry staff of the office were utilized for this purpose and close supervision of the activities of the data entry staff was maintained. This was possible because only three personal computers were used during data entry. Tabulation of the results was made using SPSS programs.

CHAPTER II

DATA QUALITY

2.1   Introduction

This chapter examines the quality of data collected in the 1990 Family and Fertility Survey of Ethiopia. It is very pertinent to assess the quality of data, particularly with respect to age, births and deaths reported by women in the reproductive ages, 15-49 years, before the estimates of fertility and mortality are provided. These estimates may be seriously distorted by mis-reporting of age and omissions of births and deaths.

2.2   Age Reporting

Age is one of the most important variables in the demographic analysis. The quality of age data is usually in suspect in developing countries, and Ethiopia is no exception to it. Although an utmost care was taken in the collection of age data in the 1990 Family and Fertility Survey, it is very difficult to ensure its quality, particularly in a situation where the absolute majority of the respondents are illiterate. A very few Ethiopian women could report their exact date of birth either in terms of year or month of birth. Data in Table 2.1 shows that only 7 percent of women aged 15-49 could report the year in which they were born. The proportion of women who could report their year of birth is lowest in rural areas while this was highest in Addis Ababa, the capital

city followed by 'other urban areas'. These proportions were 3.9,
14.6 and 31.5 percent in rural, "other urban areas" and Addis Ababa

Table 2.1 Distribution of Responses to Question, "In What Month
and Year Were You Born?" by Type of Residence, 1990 FFS

Residence	Date of Birth Reported (% Distribution)	
	Year	Month
Total	6.6	13.2
Rural	3.9	10.4
Addis Ababa	31.5	41.7
Other Urban	14.6	19.3
Urban	21.4	28.5

respectively. The reporting of exact date of birth marginally
improves if women were asked to report their ages in terms of month
rather than year in which they were born. And this finding holds
for each place of residence. The proportion of women who could
report the month in which they were born rises form lowest 10.4
percent in rural areas to 41.7 and 19.3 percent in Addis Ababa and
'other urban centers' respectively. In a situation where the over-
whelming majority of the respondents couldn't state their exact
date of birth, the accuracy in age reporting is in serious suspect.
An evidence of this can be clearly seen in the single year age
distribution of women. The single year age distribution, in the
absence of drastic reduction in mortality and exodus of population
and given that age is accurately reported, is expected to assume a
descending pattern of distribution as age increases. However, the
age data of respondents don't fit-in with the general trend as the

heaping at ages ending in zero and five is clearly evident from Figure 2.1 and Table 2.2. The heaping is also marked, although to

Table 2.2 Single Year Age Distribution of Women Aged 15-49 Years, 1990 FFS.

Age	Number weighted)	Percent
15	247,986	4.2
16	296,104	5.0
17	223,792	3.8
18	305,207	5.1
19	164,632	2.8
20	343,293	5.8
21	118,547	2.0
22	205,310	3.4
23	152,710	2.6
24	158,276	2.7
25	337,376	5.7
26	149,311	2.5
27	151,269	2.5
28	232,004	3.9
29	109,663	1.8
30	386,280	6.5
31	140,032	2.4
32	206,057	3.5
33	118,583	2.0
34	138,741	2.3
35	314,771	5.3
36	125,125	2.1
37	121,679	2.0
38	168,618	2.8
39	84,050	1.4
40	269,760	4.5
41	67,865	1.1
42	92,483	1.6
43	72,624	1.2
44	46,149	0.8
45	159,474	2.7
46	65,606	1.1
47	48,898	0.8
48	90,865	1.5
49	41,697	0.7
Total	5,945,838	100.0

FIGURE 2.1

PERCENTAGE DISTRIBUTION OF WOMEN BY SINGLE YEAR OF AGE, ETHIOPIA, 1990

Percentage

Age

── NATIONAL

a lesser degree, at ages ending in even numbers, particularly at ages ending in 2 and 8. A similar pattern of age-heaping was noted in the earlier findings reported in 1981 Demographic Sample Survey and 1984 Population Housing Census. The peaks and troughs observed in the single year age distribution of the respondents clearly indicate preferences and dislikes for ages, ending in certain digits respectively rather than for any other genuine reason(s).

The quality of age data is also assessed employing Myers' blended index[1]. This index measures the preferences and dislikes for each of the digits from 0 to 9. The theoretical values of Myers' index range between 0 and 90; value 0 represents no age heaping, while value would be 90 if all ages are reported as numbers ending in the same digit. In other-words, the lower the value of Myers' index, the higher the quality of age data. Table 2.3 presents Myers'Blended Index of Digit preference by place of residence. The indices have been culculated over the age range that extended from 20 to 49 years. The data show a tendency for women in the reproductive ages (20-49 years) in all study areas, to over-state their ages ending in 0; 5 and 8 and under-state their ages ending in 1, 9, 3, 6 and 7. The highest age heaping occured at ages ending in 0 and terminal digit 5 received the second highest preference. The most avoided ages are those ending in digits 9 and 1. It is to be further observed from summary index

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[1]/ Myers,R.J. 1940. "Errors and Bias in the Reporting of Ages in Census Data", Transactions, Actuarial Society of America, 41, pt.2(104): pp.411-415

Table 2.3   Myers' Blended Index of Terminal Digit Preference by
             Type of Residence, 1990 FFS.

Terminal Digit(x)	Deviation of Percent from 10.0				
	Rural	Urban	Addis Ababa	Other Urban Areas	Total
0	+7.8	+7.7	+6.3	+8.6	+8.3
1	-3.9	-5.1	-6.0	-4.5	-3.8
2	-0.8	+0.2	+0.8	+0.3	-0.4
3	-3.4	-3.9	-2.6	-4.7	-3.3
4	-3.2	-3.0	-1.8	-3.8	-3.0
5	+7.2	+9.1	+7.5	+10.2	+8.0
6	-2.2	-3.2	-2.6	-3.6	-2.2
7	-2.5	-2.6	-2.1	-2.9	-2.3
8	+1.7	+4.5	+5.2	+4.1	+2.4
9	-0.7	-3.7	-4.7	-3.1	-3.7
Summary Index	16.7	21.5	19.8	22.9	18.7

that quality of age reproting is better in rural than in urban
areas, better in Addis Ababa than in 'other urban areas'. These
tests clearly show that the single year age data collected by 1990
FFS are subject to digit preference.

2.3   Sex Ratio at Birth

     Examination of sex-ratios at birth will give us some idea of
completeness of births reported by women. The sex-ratio at birth
is found to be commonly around 105 males per 100 females and varies
within a narrow range for countries having reasonably good vital
registration system (United Nations, 1973). The sex ratio at birth
that was universally observed is also found in Ethiopia as the data
of the present survey testify. Among births that occured in the
past 12 months preceding the survey, the sex ratio at birth was 105

males per 100 females (see Table 2.4). This overall finding also
holds for rural Ethiopia. However, for urban areas in general and
Addis Ababa in particular the sex-ratios at birth are not
consistent with the expected pattern in that the ratios are
unexpectedly low indicating under-reporting of male births in these
areas. The finding of unexpectedly low sex-ratio in Addis Ababa
could also result from small sample size[2] on which Addis Ababa
observation was based upon. The sex ratio at birth observed in
urban areas, either in Addis Ababa or other urban areas, has always
been off the expected value irrespective of the time period
preceding the survey one uses to arrive at this ratio, except for
the period 1-4 years preceding the survey (see Table 2.4). The
sex-ratio observed between 1-4 years before the survey for urban
areas, either for Addis Ababa or for other urban areas, was within
the expected value. This could be an exception rather than the
rule. It is also evident from the table that in rural areas and

Table 2.4 Sex Ratios at Birth for Ethiopia as a Whole and
Places of Residence by Years Before the Survey,
1990 FFS.

Years Before the Survey	Rural	Urban	Addis Ababa	Other Urban	Total
Less than 1 year	105.7	101.9	90.2	107.4	105.4
1-4 Years	107.4	105.4	107.0	104.7	107.3
5-9 Years	105.3	100.7	111.8	95.5	104.8
10-14 Years	96.7	95.1	98.8	93.1	96.5
15-19 Years	126.9	123.0	132.1	118.7	126.40
More than 20 Years	111.4	122.9	113.1	129.4	111.10

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[2] Addis Ababa observation was based on 1551 women in the reproductive ages (15-49 years).

for the whole of Ethiopia, sex-ratios at birth occurring between 1-9 years preceding the survey were also within the expected pattern: the values ranging between 105 and 107. However, deviation from this expected pattern is also observed for rural areas and for the whole country for those births which occurred 10 years or more preceding the survey, due mainly to recall lapse.

2.4 Reporting of Births

In the survey, two independent measures of fertility were provided: cumulative fertility and current fertility. Cumulative fertility is derived from information on number of children ever born while current fertility is obtained from birth history.

Table 2.5 compares the reported number of children ever born and the number estimated from synthetic births last year. If these two measures of fertility don't coincide with each other. this has to be explained either due to omission in reporting of births or decline in fertility. The cumulative fertility, based on information on number of children ever born, usually tends to be downwardly biased due to memory lapse of women, particularly among women of higher ages. The older women tend to omit children who either died very young or are no longer living with them at the time of the survey. On the other hand, synthetic estimates of children ever born, based on recent births, are likely to be more complete. Examination of data in Table 2.5 and Figure 2.2 show that synthetic estimate of mean number of children ever born for

Table 2.5 Reported Mean Number of Children Ever Born and the
Number Derived from Synthetic Births in the Past
12 Months by Single-Year of Currently Married Women
Aged 15-49, 1990 FFS.

Age of Women	Reported CEB (a)	Synthetic CEB (b)	Difference (a)-(b)
15	0.045	0.0191	+0.03
16	0.109	0.0917	+0.02
17	0.190	0.1639	+0.03
18	0.386	0.3008	+0.09
19	0.619	0.4893	+0.13
20	1.095	0.7559	+0.34
21	1.666	1.0423	+0.62
22	1.765	1.2647	+0.50
23	1.888	1.5439	+0.34
24	2.557	1.8837	+0.67
25	2.582	2.1769	+0.41
26	3.144	2.4905	+0.65
27	3.682	2.7395	+0.94
28	3.724	3.0293	+0.69
29	4.442	3.3468	+1.10
30	4.395	3.6337	+0.76
31	4.912	3.9131	+1.00
32	5.147	4.1495	+1.00
33	5.559	4.3574	+1.20
34	5.584	4.5936	+0.99
35	5.434	4.8154	+0.62
36	6.204	5.0595	+1.14
37	6.080	5.3366	+0.74
38	6.140	5.4412	+0.70
39	6.297	5.5716	+0.73
40	6.335	5.7021	+0.63
41	6.928	5.7809	+1.15
42	6.803	5.8930	+0.91
43	7.481	5.9582	+1.52
44	6.631	6.0080	+0.62
45	6.863	6.0920	+0.77
46	6.658	6.1060	+0.55
47	7.593	6.1310	+1.46
48	7.503	6.1580	+1.35
49	7.135	6.2847	+0.85

FIGURE 2.2

Reported and Synthetic Number of Children Ever Born by Single Year of Age of Women, Ethiopia, 1990 FFS

Age at Survey

—□— Reported   —+— Synthetic

each age of women are consistently lower than the reported number, although the differences between reported and synthetic estimates are small at adolescent ages, 15-19 years but it increases thereafter with age, reaching its highest at ages 29 years and above. At these ages(i.e., 29 years and above) the differences are at least one child per woman. The finding of synthetic values lower than reported values can be explained, as stated earlier, either by omissions in the reporting of births or decline in fertility. Since the latter is difficult to accept given the low contraceptive use[3] and universal marriage[4] that are prevailing in the country, the former i.e., omission of births may be considered more plausible explanation of finding synthetic estimate of mean number of children ever born at each age lower than the reported numbers. This omission in reporting of births appears to be of major concern in urban Ethiopia than in rural Ethiopia, as indicated by greater disparity between synthetic and reported estimates of mean number of children in the former than in the latter (see Figures 2.3 and 2.4).

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[3]

Only 4.0 percent of currently married women in the reproductive ages (15-49 years) were reported to be currently practicing contraception in 1990 (See Chapter 4 of the present report).

[4] According to 1984 Population & Housing Census, there are few persons remaining unmarried past the age of 40 years, indicating universal marriage pattern. It is not only that marriage is universal but also begins at an early age. The singulate mean age at marriage as estimated from 1984 census turned out to be 17.6 years for females (CSA, 1991). In a non-contraceptive society where marriage is universal and begins early, ceteris paribus, fertility is likely to be high.

FIGURE 2.3

Reported and Synthetic Number of Children Ever Born by Single Year of Age of Women ,Rural Ethiopia, 1990 FFS

CEB

□ Reported   + Synthetic

FIGURE 2.4

Reported and Synthetic Number of Children Ever Born by Single Year of Age of Women ,Urban Ethiopia, 1990 FFS

CEB

□ Reported   + Synthetic

2.5 Age at Death

Experiences from other surveys suggest that infant deaths are subject to omission and misplacement (Goldman, et. al., 1979; Thapa and Retherford, 1982; Gobhaju., et.al., 1987). Data with these types of errors are likely to under-estimate infant mortality rate. Omission of infant death is more severe which could lead to both under-reporting of births as well as infant deaths in a situation when a child died soon after birth and remain un-reported.

Under-reporting of infant death can also arise due to misplacement of age of deaths. Examination of survey data on age at death in months from other countries shows heaping of deaths in certain months. Ethiopia is no exception to it . The distribution of deaths in months for first two years of life occurred before the survey presented in Table 2.6 and Figure 2.5 reveals heapings of deaths reported at age 12 and 24 while a few deaths were reported at ages 11 and 23. There is no a priori reason to believe that only few deaths will take place at 11 and 23 months while these will be shot up at 12 and 24 months. The heapings of deaths at 12 and 24 months were due to mis-placement of events i.e., some of the deaths which took place before or after age 12 and 24 months were reported to have taken place at 12 and 24 months. The misplacement of events will have the effect of distorting infant mortality rate. For example, children who have died at 10 or 11 months but were reported to have died at 12 months will lead to an under estimation of infant mortality rate. It, therefore, calls for taking due

FIGURE 2.5

PERCENT DISTRIBUTION OF DEATHS BY MONTHS
(Deaths at '0'month are not shown)

considerations of misplacement of age at death while estimating infant mortality rate.

Table 2.6   Percent Distribution of Age at Death in Months
             Ethiopia, FFS 1990

Months	Number (weighted)	Percent
0	1,313,049	35.5
1	307,952	8.3
2	232,721	6.3
3	203,436	5.5
4	116,181	3.1
5	117,549	3.2
6	199,864	5.4
7	96,488	2.6
8	95,100	2.6
9	66,602	1.8
10	31,566	0.9
11	10,679	0.3
12	325,357	8.8
13	8,733	0.2
14	10,346	0.3
15	12,157	0.3
16	8,231	0.2
17	6,042	0.2
18	60,470	1.6
19	4,321	0.1
20	9,060	0.2
21	3,015	0.1
22	636	0.0
23	5,151	0.1
24	450,947	12.2
Total	3,695,655	100.0

CHAPTER III

CHARACTERISTICS OF HOUSEHOLD AND INDIVIDUAL SAMPLE

3.1 Introduction

In this chapter information are provided on some background characteristics of the FFS sample to enable the readers to place the findings presented in the subsequent chapters in its proper perspective. These information were collected using Household and Individual Survey Questionnaires. The primary purpose of the household enumeration, as stated earlier, was to identify women in the reproductive ages, 15-49 years, who were eligible for the individual interview. In the course of household enumeration some basic information of all persons in each selected household were collected. These include data on age and sex composition of the population and those on marital status of all enumerated persons aged 10 years and above. In the following section (3.2) we discuss only the data on age/sex composition of the population and compare those with similar data collected by the 1984 Population and Housing Census.

The 1990 FFS has collected a wide array of socio-economic, cultural and demographic information at household and individual level for every selected woman using the questionnaire on Household Socio-economic Characteristics and that of Woman's Questionnaire respectively. Some of these characteristics will be discussed in section 3.3 of the present chapter.

3.2   Population Characteristics

3.2.1   Age/Sex Composition of the Population

The 1990 FFS enumerated all the members of the household, including those away temporarily and visitors present on the previous night, on a joint defacto and dejure basis. Under defacto approach people were counted as the residents of the place (i.e., household) where they were found i.e., slept in the household on the night prior to the enumeration, while under dejure approach, people were counted in their usual place of residence (i.e., the place where they have been living at least for six months continuously), even if they were temporarily away. The 'visitors' present on the night prior to the enumeration were counted in the house where they were found in the case of defacto and in their usual place of residence in the case of dejure. Analysis of data in this chapter and all subsequent chapters are based on dejure population.

The total (unweighted) dejure population enumerated in the 1990 FFS were 46,489, of whom 23,035 were males and 23,454 were females - resulting in a sex-ratio of 98 males per 100 females. The overall sex-ratio observed in the 1990 FFS was somewhat lower than that of the sex-ratio noted in the 1984 Population and Housing Census, which was 100.6. The average household size reported in the 1990 FFS was higher compared to that obtained in the 1984 Population Census result. These figures reported by 1990 FFS and

1984 Census were 5.1 and 4.8 respectively. Better count in the survey than in the census may explain this finding of higher average family size in the former than in the latter.

Age data are very important not only for demographic analysis but also for social and economic planning of a country. The perspective planning of a country, to large extent, is based on the present and future age distribution of the population. Given the many and varied use of age data, information regarding age has been one of the core items canvassed in most censuses and surveys, and also in the 1990 Family and Fertility Survey. Table 3.1 shows the distribution of the dejure population of 1990 FFS with the corresponding census results for comparison. The pattern of age distribution obtained by 1990 FFS and 1984 census closely resembles each other (see Table 3.1). Both show a pattern of age distribution, with a large proportion of children under 15 years and a very small proportion of elderly persons. This is the typical age structure of the population of a developing country characterised by high fertility and decling but high mortality. The young age structure of the population is vividly depicted in the population pyramid presented in Figure 3.1. Children under 15 accounted for 50 and 48 percent of the population enumerated by the 1990 FFS & 1984 Census respectively, while the elderly population 65 years and above accounted for 7 and 6 percent of the population enumerated by 1984 Census and 1990 FFS.

Table 3.1   Percentage Distribution of the Enumerated (DEJURE)

Population by Age and Sex, 1984 Census and 1990 FFS.

Age Group	Percentage Distribution of Population					
	Males		Females		Both	
	1984	1990	1984	1990	1984	1990
0-4	18.7	17.7	18.4	16.4	18.5	17.0
5-9	18.7	17.5	17.1	17.4	17.9	17.5
10-14	12.4	15.0	11.0	16.3	11.7	15.6
15-19	8.1	10.4	8.0	8.1	8.0	9.2
20-24	5.8	5.5	6.5	6.3	6.2	5.9
25-29	5.3	2.4	7.0	4.1	6.1	3.2
30-34	5.1	4.4	6.5	6.3	5.8	5.3
35-39	5.3	4.8	5.6	5.2	5.5	5.0
40-44	4.4	4.2	4.6	3.5	4.5	3.9
45-49	3.5	3.7	3.1	2.5	3.3	3.1
50-54	3.1	2.9	3.5	3.6	3.3	3.2
55-59	2.2	2.4	1.9	2.7	2.0	2.6
60-64	2.4	2.3	2.5	2.2	2.4	2.3
65+	5.0	6.8	4.4	5.4	4.8	6.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Although the pattern of age/sex distribution of the population obtained by the 1990 FFS and 1984 Population Census is the same, there are some differences between the two distributions. The main difference between the two distributions is that the 1990 FFS enumerated fewer children under 10 particularly those under 4 than the 1984 Census while the former over counted the adolescents (10-19 years) particularly the early adolescents (10-14 years) than the

FIGURE 3.1 POPULATION PYRAMID OF ETHIOPIA, 1990 FFS

AGE GROUP

	MALE	FEMALE

75+

70-74

65-69

60-64

55-59

50-54

45-49

40-44

35-39

30-34

25-29

20-24

15-19

10-14

5-9

0-4

10 8 6 4 2 0 2 4 6 8 10

adolescent and young adult ages (10-24 years). Children under 10 years form a higher proportion in the rural areas, compared to Addis Ababa, the capital city, and other urban areas. The proportion of children below 10 years in the total population constitutes the lowest in Addis Ababa followed by other urban centers. On the other hand, persons in the adolescent and young adult ages constitute the highest in Addis Ababa followed by other urban centers and rural areas. Various reasons could be adduced to explain these differences in age structure by place of residence. The finding of a lower proportion of children in Addis Ababa and other urban centers, particularly the former than in the rural areas, may result from lower fertility in the urban areas, particularly Addis Ababa. The finding of a higher proportion of adolescents and young adults in Addis Ababa and other urban centers, particularly the former than in the rural population, may be attributed to the exodus of people in the adolescent and young adult ages from the rural to the urban areas, particularly Addis Ababa in search of jobs, pursuing education/training, ... etc. The proportion of persons in the working age groups particularly in the adult ages (25-59) are about evenly distributed between places of residence excepting that this proportion for males in Addis Ababa is higher than the corresponding proportion in rural and other urban areas. This could still be attributed to higher exodus of adult males from rural and other urban centers to Addis Ababa in search of employment and pursuing higher education. It should be further noted here that the proportion of adolescents and young adults (10-24 years) are not only higher in Addis Ababa and other

urban centers compared to rural areas but also this proportion is higher for females than males, indicating predominance of females among migrants into urban areas. These findings are also consistent with those reported in 1984 Census.

3.2.3 Sex Ratio: General Pattern

In normal circumstances, the overall sex ratio is expected to be 100. Evidence suggests that at birth there are more males than females which will produce a sex ratio at birth of over 100. This will, however, cancel out as the age advances. At higher ages males tend to die more frequently than females which will produce a sex ratio below 100. As a result, the overall sex-ratio is expected to be 100. The data collected by 1990 Family and Fertility Survey yielded a sex-ratio of 98.2 for the country as a whole, indicating a slight excess of females. Although for rural areas, there shows a slight excess of males (100.3). Substantial deficit of males is also noticed in Addis Ababa (85.5) and other urban areas (84.8) (see Table 3.3). The lower sex ratio for urban areas could be due to female dominated migrants into urban areas. The sex ratios reported in the 1990 Family and Fertility Survey slightly differ from those reported in 1984 census, particularly in terms of overall sex ratio. Unlike the 1990 FFS, the 1984 Census reported a sex ratio of little over 100 (100.6) for the country as a whole. Except, for this departure the pattern of sex ratio is observed to be the same for 1990 FFS and 1984 Census in rural, Addis Ababa and other urban areas, although the magnitude of sex

ratio varied by sources (see Table 3.3). The expected pattern of sex ratio at birth (i.e., slight excess of males over females) is confirmed by data obtained by both sources (census and survey) excepting the ratio reported in Addis Ababa by 1990 FFS.

Table 3.3 Sex-ratio of Total Population and Sex-ratio of Children Under One Year from 1990 FFS and 1984 Census by Place of Residence

Residence	Sex-ratio	
	1990 FFS	1984 Census
Overall Sex ratio		
Ethiopia	98.2	100.6
Rural	100.3	102.3
Addis Ababa	85.5	92.8
Other Urban Areas	84.5	92.8
Urban	85.06	88.2
Sex-ratio Under One Year		
Ethiopia	105.4	102.1
Rural	105.7	102.3
Addis Ababa	90.2	107.1
Other Urban Areas	107.4	101.0
Urban	101.9	101.0

3.2.4 Sex Ratio by Age and Rural/Urban Areas

Table 3.4 and Figure 3.2 present sex ratios by five year age-group and rural/urban areas. In normal situation sex ratio will decrease from high to low with increasing age in populations which

Table 3.4 <u>Sex Ratio of Addis Ababa, Other Urban, Rural and Total</u>

<u>Population, 1990 FFS.</u>

Age Group	Place of Residence			
	Addis Ababa	Other Urban	Rural	Total
Under 1	78.2	101.6	105.8	104.8
1-4	100.3	102.5	107.1	106.6
5-9	99.9	93.1	99.9	98.9
10-14	72.1	86.7	91.8	90.1
15-19	92.4	76.4	136.5	125.4
20-24	63.7	73.2	89.4	86.3
25-29	57.0	64.1	74.8	72.9
30-34	75.9	58.1	68.8	68.3
35-39	99.6	73.8	93.2	91.8
40-44	135.8	123.0	118.3	119.5
45-49	158.0	157.2	141.1	143.1
50-54	53.4	61.8	80.9	77.8
55-59	68.7	79.7	89.4	87.6
60-64	116.2	67.4	105.5	102.7
65-69	88.6	77.6	139.7	130.6
70+	99.0	85.0	149.5	139.2
Total FFS	85.5	84.8	100.3	98.2
1984 Census	92.8	86.3	102.7	100.6

have not experienced substantial migration (Shryrock and Siegel,
1973: 105-110). However, this is not supported by data collected
by 1990 FFS which shows a considerable variation in sex-ratios by
age groups (see Table 3.4). The sex ratios in rural areas reveal
excess of males in the early age groups i.e., under 1 and 1-4 years
and also in the late adolescent (15-19 years) age group. However,
the sex ratios are lower than 100 (indicating deficit of males) in
the age-group 5-9 years and also in early adolescent (10-14 years),
young adult and early middle ages (i.e., from 20-24 to 35-39

FIGURE 3.2 SEX RATIO OF ADDIS ABABA, OTHER URBAN, RURAL AND TOTAL POPULATION

years). Similarly, the sex ratios are lower than 100 in the age groups 50-54 and 55-59 years. In the remaining ages i.e., in the early and late forties and in the ages 60 years and above, the ratios are over 100 indicating excess of males. In the urban areas, whether this is in Addis Ababa or other urban centers, the data reveal excess of females over males in most of the age groups except for the age-groups 40-44 and 45-49, and in early age-groups (under 1 and 1-4 years) in other urban areas and in age-groups 1-4 and 60-64 years in Addis Ababa, where there is excess of males over females. The lower sex ratios for urban areas have to be explained largely by the higher proportion of females among the migrants into urban areas. On the other hand, the finding of markedly low ratio in the young adult and early middle ages (20-24 to 35-39 years) may be attributed to excess male mortality and/or heavy exodus of males from these age groups due to war that was prevailing in the country for over the last 15 years. Some of these deficits could also result from mis-reporting of ages of males of young adult ages to avoid conscription in the army. The fratricidal war that was pravailing in the country not only took heavy toll of life of young men but also forced them to flee away from the country to avoid military conscription. The excess of females in the absolute majority of the age-groups in urban areas and deficit of males in the young adult and early middle ages in rural areas observed in 1990 FFS were also reported in the 1984 Census (see National Analytical Report, CSA 1991).

3.3 Characteristics of the Individual Sample

This section provides some key socio-economic and demographic characteristics of the respondents of 1990 FFS. The background characteristics of women are closely associated with their fertility performance, contraceptive use, breast-feeding practices and chances of child survival,... etc. For example, age and duration of marriage are positively related to fertility. The higher the age of women, the higher the fertility. Age at marriage is expected to be negatively related to fertility. Similarly, a woman's exposure to formal education is likely to have a profound effect on her contraceptive use, fertility performance and chances of survival of her children. Females participation in labour force is expected to have a depressing effect on her fertility behaviour. Likewise, cultural identity of a woman, such as religion and ethnic origin, is likely to have a bearing on various aspects of life including reproductive behaviour. It is, therefore, of paramount importance to study the background variables regarding the women covered in this study.

The 1990 Family and Fertility Survey had collected a wide range of socio-economic, cultural and demographic information about each selected woman and her household using woman's questionnaire and questionnaire on household's socio-economic characteristics. Some of these characteristics will be discussed here. We include here only those characteristics which are often discussed in various chapters of this report. The selection of these

characteristics are based on the criteria of their broad descriptive value, their relevance to policy formulations and expected bearings on demographic outcomes. The key socio-economic and demographic variables examined here include age, education of respondent, education of respondent's husband, labour force participation, occupation, religion and ethnicity,... etc. These are presented by three major areas of residence (Addis Ababa, Capital city, Other Urban Areas and Rural). The characteristics of the study population examined here are also compared with those of the national population data provided by 1984 Population and Housing Census. A comparison of this kind will give us an idea how far the sample population represent the national population.

3.3.1 Age Distribution

The age distribution of the women who were interviewed during the survey showed a typical pattern observed in a rapidly growing population (Table 3.5). The distribution indicates a large proportion in the lower age groups and a decreasing proportion as age advances. Each successive age group showed a smaller proportion of women except in the age-group 30-34, which showed a slightly larger number compared to those in the 25-29 year age range in rural areas. It is to be also noted that there is no marked difference in the age distributions between residential categories, excepting that in the urban areas there are proportionately more women in the adolescent ages (15-19 years) than in the rural areas. While in the early middle (25-34 years)

and higher ages (40-49 years) there are proportionately more women in rural than in urban areas. The finding of higher proportion of women in the adolescent ages (15-19) in urban than in rural areas may be attributed to migration of young women from the latter to the former.

Table 3.5   Percentage Distribution of Women Aged 15-49 by Age Group and Place of Residence, 1990 FFS

Age Group	Rural	Addis Ababa	Other Urban	Total
15-19	20.0	27.0	30.0	21.0
20-24	16.5	19.4	14.4	16.5
25-29	16.6	14.9	14.8	16.3
30-34	16.9	13.4	14.0	16.4
35-39	13.6	12.8	13.8	13.7
40-44	9.5	7.1	7.7	9.1
45-49	6.9	5.4	5.3	7.7

3.3.2   Socio-economic Characteristics

Socio-economic characteristics of the successfully interviewed women in the reproductive ages (15-49 years) are presented in Table 3.6. The data are presented by place of major residential areas: rural; urban; Addis Ababa, other urban areas and for the country as a whole. Out of 8757 successfully interviewed women, 84.8 percent

originated from the rural areas while the remaining 15.2 percent were from the urban areas. Addis Ababa and 'other urban areas' accounted for 6.1 and 9.1 percent of the successfully interviewed women. The pattern of rural-urban distribution of the study population appears to be in accord with the rural/urban distribution of the national female population in reproductive ages reported in the 1984 census, although the component of the rural population is higher in the former than in the latter. In other-words, rural female population is slightly over-represented in the sample[1].

As expected, the overwhelming majority (85%) of the respondents are illiterate. Only a small minority (15%) of them are literate (i.e., this proportion includes those who had completed formal education of grade six and above including those who had completed some formal education (less than grade six) or attended non-formal education programmes and were able to read and write a letter or simple statement in any language easily). There shows a striking difference in level of education between rural and urban respondents. The majority (59.4%) of the urban women are literate while the absolute majority (92.9%) of the rural women are illiterate. As consistent with <u>a prior</u> expectation, the absolute majority (71.0%) of the respondents from capital city, Addis Ababa,

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[1] According to 1984 census, the female population at reproductive age groups (15-49) in the rural areas accounted for 84 percent of the total female population enumerated at these age groups. The corresponding proportion in the sample was 85 percent.

Table 3.6 Distribution of the Respondents According to Some Selected Background Characteristics by Rural/Urban Residence, FFS 1990 (Percentage Distribution and Number of Women)

Characteristics	Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Literacy Status (Respondent)					
Illiterate	92.9 (4690998)	40.6 (367594)	28.8 (103811)	48.4 (263783)	85.0 (5058592)
Literate	7.1 (357363)	59.4 (537741)	71.2 (256854)	51.6 (280887)	15.0 (895104)
Not Stated	0.0 (1142)	– –	– –	– –	0.0 (1142)
Total	100.0 (5049503)	100.0 (905335)	100.0 (360665)	100.0 (544670)	100.0 (5954838)
Educational Attainment (Respondent)					
Primary (1-6 grade)	3.8 (193607)	20.0 (180587)	20.0 (72086)	19.9 (108501)	6.3 (374194)
Junior Secondary (7-8 grade)	1.4 (72317)	13.0 (118187)	12.9 (46683)	13.1 (71504)	3.2 (190504)
Senior Secondary (9-12 grade)	0.9 (47252)	22.9 (207329)	33.1 (119260)	16.2 (88069)	4.3 (254581)
University and higher	0.1 (3227)	1.5 (13738)	3.4 (12407)	0.2 (1331)	0.3 (16965)
Non-Formal Education	0.8 (40960)	2.0 (17900)	1.8 (6418)	2.1 (11482)	1.0 (58860)
Illiterate	92.9 (4690998)	40.6 (367594)	28.8 (103811)	48.4 (263783)	84.9 (5058592)
Not Stated	0.0 (1142)	–	–	–	0.0 (1142)
Total	100.0 (5049503)	100.0 (905335)	100.0 (360665)	100.0 (544670)	100.0 (5954838)

Table 3.6 (Contd.)

Characteristics	Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Husband's Education					
Illiterate	75.6	27.7	19.4	32.4	70.0
	(3275090)	(160030)	(39886)	(120144)	(3435120)
Literate	24.4	72.2	80.6	67.5	30.0
	(1054555)	(416601)	(165855)	(250746)	(1471156)
Not Stated	0.0	0.1	–	0.1	0.0
	(780)	(536)	–	(536)	(1316)
Total	100.0	100.0	100.0	100.0	100.0
	(4330425)	(577167)	(205741)	(371426)	(4907592)
Husband's Educational Attainment					
Primary (1-6 grade)	10.7	26.7	26.8	26.6	12.5
	(461355)	(153999)	(55114)	(98885)	(615354)
Junior Secondary	2.4	9.5	9.2	9.6	3.2
(7-8 grade)	(102432)	(54806)	(18990)	(35816)	(157238)
Higher Secondary	1.7	19.9	24.6	17.3	3.9
(9-12 grade)	(74892)	(114804)	(50537)	(642267)	(189696)
University/Higher	0.1	5.6	9.5	3.4	0.8
	(4720)	(32422)	(19633)	(12789)	(37142)
Illiterate	75.6	27.7	19.4	32.4	70.0
	(3275089)	(160030)	(39886)	(120144)	(3435119)
Non-formal	9.5	10.5	10.5	10.5	9.6
	(411157)	(60570)	(21581)	(38989)	(471727)
Not Stated	0.0	0.1	–	0.1	0.0
	(780)	(536)	–	(536)	(1316)
Total	100.0	100.0	100.0	100.0	100.0
	(4330425)	(577167)	(205741)	(371426)	(4907592)

Table 3.6 (Contd.)

Characteristics	Rural	Urban	Addis Ababa	Other Urban	Total
Ethnicity					
Amara	20.4	52.9	56.2	50.6	25.3
	(1027906)	(478798)	(202856)	(275942)	(1506703)
Oromo	42.1	21.3	19.5	22.4	39.0
	(2127690)	(192431)	(70420)	(122011)	(2320121)
Tigre	0.5	5.2	10.0	2.0	1.2
	(25892)	(46701)	(36016)	(10685)	(72593)
Kembata	3.5	0.5	0.5	0.5	3.0
	(174702)	(4666)	(1877)	(2789)	(179368)
Welayta	3.6	2.4	0.5	3.7	3.4
	(180738)	(21693)	(1743)	(19950)	(202432)
Sidama	5.8	0.6	-	1.0	5.0
	(295420)	(5523)	-	(5523)	(300943)
Gurage	6.6	10.0	10.6	9.6	7.1
	(334098)	(90373)	(38257)	(52116)	(424471)
Agew	1.0	1.9	0.1	3.1	1.2
	(52296)	(17093)	(240)	(16853)	(69389)
Gedeo	2.5	-	-	-	2.1
	(125432)	(410)	-	(410)	(125842)
Hadiya	4.5	-	-	-	3.8
	(225,375)	(411)	-	(411)	(225786)
Bencho	1.2	-	-	-	1.1
	(63577)	-	-	-	(63577)
Keffa	1.3	1.2	-	1.9	1.3
	(63922)	(10569)	-	(10569)	(74491)
Somali	0.4	1.3	-	2.2	0.5
	(20157)	(12075)	-	(12075)	(32232)
Damete	0.6	0.7	-	1.2	0.6
	(31748)	(6551)	-	(6551)	(38299)

Table 3.6 (Contd.)

Characteristics	Rural	Urban	Addis Ababa	Other Urban	Total
Gamo	1.8	0.0	–	–	1.5
	(91214)	(382)	–	(382)	(91596)
Dorze	–	0.4	1.0	–	1.0
	(2182)	(3453)	(3453)	–	(5635)
Others	3.9	1.4	1.4	1.4	3.5
	(197256)	(12681)	(5188)	(7493)	(209937)
Not Stated	0.2	0.2	0.2	0.2	0.2
	(9898)	(1525)	(615)	(910)	(11423)
Total	100.0	100.0	100.0	100.0	100.0
	(5049503)	(905335)	(360665)	(544670)	(5954838)
Religion					
Christian	62.7	86.3	93.2	81.6	66.3
(Total)	(3166587)	(780889)	(336244)	(444645)	(3947476)
Christian	47.7	81.03	87.2	77.0	52.8
(Orthodox)	(2409667)	(733592)	(314443)	(419149)	3143259)
Christian	12.1	3.4	4.6	2.6	10.8
(Protestant)	(612791)	(31007)	(16604)	(14403)	(643798)
Christian (Others)	2.9	1.8	1.4	2.0	2.7
	(144129)	(16290)	(5197)	(11093)	(160419)
Muslim	30.1	13.4	6.2	18.1	27.6
	(1521590)	(120818)	(22471)	(98347)	(1642407)
Animist/	3.5	–	–	0.1	3.0
Traditional	(177385)	(411)	–	(411)	(177796)
Atheist	0.3	–	0.1	–	0.2
	(13636)	(515)	(515)	–	(14151)
Other religion	3.3	0.3	0.3	0.2	2.9
	(169069)	(2385)	(1118)	(1267)	(171454)
Not Stated	–	–	–	–	–
	(1237)	(317)	(317)	–	(1554)
Total	100.0	100.0	100.0	100.0	100.0
	(5049503)	(905335)	(360665)	(544670)	(5954838)
Migration Status					
Non-Migrants	53.0	40.3	45.2	37.0	51.1
	(2677696)	(364366)	(162901)	(201465)	(3042062)
Migrants	47.0	59.7	54.6	63.0	48.9
	(2371155)	(540055)	(196850)	(343205)	(2911210)
Not Stated	–	–	–	–	–
	(652)	(914)	(914)	–	(1566)

Table 3.6   (Contd.)

Characteristics	Rural	Uraban	Addis Ababa	Other Urban	Total
Origin of Migrants					
Rural	96.5 (2288850)	63.7 (344069)	64.7 (127431)	63.1 (216638)	90.4 (2632919)
Urban	3.5 (82305)	36.3 (195986)	35.3 (69419)	36.9 (126567)	9.6 (278291)
Total	100.0 (2371155)	100.0 (540055)	100.0 (196850)	100.0 (343205)	100.0 (2911210)
Work History					
Never Worked	31.6 (1593753)	48.7 (441054)	52.8 (190350)	46.0 (250704)	34.2 (2034807)
Ever Worked	68.3 (3448978)	51.1 (462341)	46.8 (168911)	53.9 (293430)	65.7 (3911319)
Not Stated	0.1 (6772)	0.2 (1940)	0.4 (1404)	0.1 (536)	0.1 (8712)
Total	100.0 (5049503)	100.0 (905335)	100.0 (360665)	100.0 (544670)	100.0 (5954838)
Current Work Status					
Currently Working	62.3 (3144585)	42.0 (380208)	35.6 (128264)	46.3 (251944)	59.2 (3524793)
Currently Not Working	37.7 (1904918)	58.0 (525127)	64.4 (232401)	53.7 (292726)	40.8 (2430045)
Total	100.0 (5049503)	100.0 (905335)	100.0 (360665)	100.0 (544670)	100.0 (5954838)
Work Place of Currently Working Women					
At Home	13.5 (424000)	43.9 (166860)	33.6 (43042)	49.2 (123818)	16.8 (590860)
Away from Home	86.3 (2713182)	55.7 (211798)	65.9 (84517)	50.5 (127281)	83.0 (2924980)
Not Stated	0.2 (7403)	0.4 (1550)	0.5 (705)	0.3 (845)	0.3 (8953)
Total	100.0 (3144585)	100.0 (380208)	100.0 (128264)	100.0 (251944)	100.0 (3524793)

Table 3.6   (Contd.)

Characteristics	Rural	Urban	Addis Ababa	Other Urban	Total
Occupation Group (Working Women)					
Professional and Technical	0.2 (5458)	5.7 (21672)	9.7 (12405)	3.7 (9267)	0.8 (27130)
Administrative and Managerial	0.0 (1259)	0.7 (2715)	0.9 (1090)	0.6 (1625)	0.1 (3974)
Clerical & Related	0.2 (5993)	7.2 (27549)	12.4 (15888)	4.6 (11661)	1.0 (33542)
Sales Worker	16.5 (518834)	44.8 (170360)	16.5 (21183)	59.2 (149177)	19.6 (689194)
Social Service	0.9 (27429)	22.5 (85428)	39.1 (50189)	14.0 (35239)	3.2 (112857)
Agricultural & Related	78.5 (2466985)	4.4 (16763)	1.2 (1500)	6.1 (15263)	70.5 (2483749)
Production Transport & Related	3.5 (110930)	14.0 (53122)	19.1 (24545)	11.3 (28577)	4.7 (164052)
Not Stated	0.2 (7696)	0.7 (2599)	11.1 (1465)	0.5 (1134)	0.3 (10295)
Total Working Women	100.0 (3144585)	100.0 (380208)	100.0 (128264)	100.0 (251944)	100.0 (3524793)

Note: The figure in parenthesis refers to number (weighted) of cases.

are literate. A similar pattern of difference in level of literacy between rural and urban areas was reported in the 1984 census.

The level of education of husbands appears to be higher than that of the educational level of women. Thirty percent of husbands are literate compared to 15 percent of the successfully interviewed women. Again, husbands in the urban areas have higher literacy rate than their rural counterparts. These proportions were found to be 24.4, 80.6 and 67.6 in rural, Addis Ababa and other urban

areas respectively.

Women with formal education are very few in the sample. Only about one-sixteenth and one-twelfth of them have completed primary and middle level education and above. Formal education among urban women is also limited, although markedly higher than their rural counterparts. One-fifth and over one-third of urban women had completed primary level and junior secondary and higher level education. The corresponding figures in rural areas are about one out of twenty-five and one out of fifty respectively.

Women with formal education, as expected, is higher in Addis Ababa. Over one-third of selected women from Addis Ababa had completed senior secondary (9-12 grade) level education. The corresponding figures in rural and 'other urban areas' were 0.9 and 16.2 percent respectively.

The formal education level of husband, particularly at the lower level, is higher than that of women. For example, about one-eighth of husband completed primary level education while one-sixteenth of women have had the same level of education. However, at the higher level of education the differences, between men and women, are surprisingly not apparent. For example, only 7.9 percent of husbands and 7.8 percent of women completed junior secondary level education and above. Again, husbands in the urban areas have higher educational attainment than their rural counterparts. For example, nearly 20 percent of husbands in urban

areas have had completed higher secondary education compared to only 1.7 percent of rural husbands having the same level of education.

The data also show that husbands in the capital city have higher educational attainment compared to other areas. For example, one-tenth of husbands of capital city had completed university/higher level education. The similar level of education is attained by only 0.1 percent and 3.4 percent of husbands in rural and 'other urban areas' respectively. This is what one would also expect to find given the fact that a large proportion of formally educated men and women are usually concentrated in the urban areas particularly in the capital city for better opportunities in life.

The ethnic distribution of the respondents shows that Oromos constitute the single largest group (39.0%) in the sample followed by Amaras (25.3%), Gurages (7.1%) and Sidamas (5.0%). The pattern of ethnic distribution observed for the total sample population also holds, in general, for rural areas in which Oromos constitute the single largest group followed by Amaras, Gurages and Sidamas. However, this rank-order of ethnic distribution of sample population is reversed in urban areas except for the third position. In urban areas, Amaras constituted the single largest group followed by Oromos. Gurages still occupied the third position while the fourth position was occupied by Tigrawais.

The rank-order of the ethnic distribution, particularly the first and second position, observed in the sample population closely corresponds to the ethnic distribution of the national population reported in the 1984 census. However, the third and fourth largest ethnic groups noted in the census differed from those found in the sample population. The 1984 population census reported Tigrawais as the third largest ethnic group in both rural and urban areas. However, the Gurages constituted the third largest group in both rural and urban sample population[1]. The fourth largest ethnic group reported in the census were Somalies in rural areas and Gurages in urban areas. Tigrawais occupied the fourth largest group in the urban sample while this was occupied by Sidamas in rural sample. It is to be also noted here that Amaras and Tigrawais were under-represented while Oromos and Gurages were over-represented in the sample population compared to the national population. According to 1984 population census, Oromos, Amaras, Tigrawais and Gurages constituted 29.06, 28.29, 9.74 and 4.36 percent respectively of the national population. These proportions in the sample population are 39.0, 25.0, 1.2 and 7.1, in that order. The under-representation of Amaras and Tigrawais and the corresponding over-representation of Oromos and Gurages is due to under-coverage of Amara and Tigrawai areas[*] in the northern region

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[1] This was mainly due to the fact that areas inhabited by the Tigrawais (such as Tigray region, Northern Wello and Northern Gondar) were not covered by the sample.

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[*] Wello and Gondar regions, that are predominantly the Amara land, were not covered in the survey.

of the country in the sample due to security reasons. The <u>Oromo</u>
and <u>Gurage</u> areas are well covered in the sample.

The distribution of the sample population by religion shows
that Christians particularly Orthodox Christians constitute the
single largest group (52.8%) followed by Muslims (27.6%) and

Protestant Christians (10.8%). The data in table 3.6 shows that
over fifty percent of the respondents were Orthodox Christians
while about one-third and one-tenth of the respondents were Muslims
and Protestants respectively. The pattern of religious
distribution of the sample population observed for the country as
a whole also holds for rural and urban sample population. The
pattern of religious distribution observed in the sample population
clearly corresponds to that of the pattern of religious
distribution noted in the 1984 Population and Housing Census,
although differs in magnitude of representation. For example,
compared to national distribution, Christians particularly
Protestants were over-represented while Muslims were under-
represented in the sample population. The Christians, Protestants
and Muslims accounted for 60.5, 5.5 and 32.9 percent of the
national population respectively in the census. The corresponding
figures in the sample population are 66.3, 10.8 and 27.6 percent,
in that order.

Considering the migratory status of the respondents, the data
show that a majority (53.0%) of the respondents from rural areas

are non-migrants while the majority of respondents (59.7%) from urban areas are migrants. The proportion migrants among urban sample is higher in 'other urban areas' than in capital city, Addis Ababa. These proportions were 54.6 and 63.0 percent in Addis Ababa and 'other urban areas' respectively.

In the survey, data were also collected whether respondents were engaged in gainful activities and the data show that about three-fifths of the respondents were reported to be engaged in any gainful activities other than those of domestic chores at the time of the survey. Rural women tend to report participation in gainful activities more frequently than their urban counterparts. Over sixty two percent of the rural respondents reported to have participated in any gainful activities at the time of the survey. The corresponding proportions were 35.6 and 46.3 percent of respondents from Addis Ababa and 'other urban areas' respectively.

The majority of the currently working women from both rural and urban areas are engaged in gainful activities outside the house at the time of survey. However, the proportion of women working outside the home is higher in rural than in urban areas. Eighty-six percent of currently working women from rural areas are engaged in gainful activities outside the home. The corresponding proportions in Addis Ababa and 'other urban areas' are 65.9 and 50.5 percent respectively.

The absolute majority of the currently working women from rural areas are engaged in 'agriculture and related occupations' while the majority of working women from 'other urban areas' are engaged in 'sales works'. 'Social service' is the single most important occupation of the working women of Addis Ababa followed by 'Production, Transport' and 'Sales Works'.

3.3.3 Possession of Specified Household Items

The 1990 Family and Fertility Survey has not attempted to measure household income directly because it is difficult to measure income in one shot survey and moreover, it is mostly time consuming to arrive at a meaningful measure of income. Therefore, income was indirectly measured by ascertaining possession of specified household items. All respondents were asked whether their households possessed each of the 14 items. The nature of these items and percentage ownership are shown in Table 3.7. Economic condition, measured in terms of possession of household goods/items, is found to be very poor for the rural respondents compared to their urban counterparts. A very few rural households own consumer durable. Six out of 14 items were owned by less than one percent of rural households. These include all the electric items, excluding radio and tape-recorder, along with the possession of sofa set. Radio, the most important method of communication, is owned by only 9 percent of the rural households. Only two percent of the rural households own tape-recorders. The item that is owned by highest proportion of rural households is bed. This is also reported to be owned by only one-third of the rural respondents.

Table 3.7   Percentage of Women Who Have Specified Household
             Possessions, by Place of Residence, FFS 1990

Characteristics	Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Household Possession(%)	(5049503)	(905335)	(360665)	(544670)	(5954838)
Tape Recorder	2.0	22.0	52.9	36.6	8.3
Radio	8.6	64.9	79.0	55.5	17.2
Television	0.2	10.9	22.4	3.3	1.9
Telephone	0.2	12.4	24.9	4.1	2.1
Refrigerator	0.1	8.4	13.5	5.0	1.4
Electric Stove	0.3	4.7	7.9	2.7	1.0
Gas Stove	0.6	15.0	22.4	10.1	2.8
Electric Mitad	0.6	24.7	52.4	6.4	4.2
Kerosene Stove	1.8	52.0	87.4	28.5	9.4
Table	14.4	78.6	87.1	73.1	24.2
Chair	27.7	76.3	89.1	67.7	35.0
Sofa Set	0.6	20.6	38.2	8.9	3.7
Bed	33.7	91.4	98.0	87.1	42.5
Clock/Watch	15.5	70.3	80.1	63.7	23.8
Mean Possession of Animals					
Milking Cow	1.24	0.37	0.14	0.52	1.11
Pack Animals	0.45	0.08	0.02	0.12	0.40
Goat/Sheep	1.42	0.54	0.14	0.80	1.28
Camel	0.02	0.00	0.00	0.00	0.02
Poultry	2.22	0.91	0.38	1.27	2.02

Note: Figure in parenthesis refers to number (weighted) of cases.

The next popular item owned by rural household is chair followed by table and clock/watch. Chair is owned by over one-quarter of the respondents while Table and Clock/watch are owned by 15 percent of the rural households each.

The ownership of each item of consumer durables is higher in urban than in rural areas. In other-words, the proportion of households owning each unit of consumer durable is higher in urban than in rural areas. Over fifty percent of the urban housing units own six of the consumer items. These include radio, kerosene stove, table, chair, sofa set, bed and clock/watch. It is to be, however, noted that although possession of electric goods is higher for urban than rural households, this is also found to be still modest in urban areas. Most of these items were owned by only 5 to 25 percent of the households except for radio, electric mitad and tape recorder. Radio is owned by over three-fifths of the urban households while electric mitad and tape recorder is owned by 25 and 22 percent of the urban households respectively. It appears from these findings that the overall economic conditions of the households are poor and this is more glaring for rural than urban households.

The urban households in the sample seem to be slightly better off in terms of possession of some consumer durables such as radio, telephone and kerosene stove,... etc, compared to the urban households in the national population reported in 1984 census. The proportion of urban households in the sample owning radio,

telephone and kerosene stove accounted for 65, 12 and 52 percent. The corresponding proportions in the urban households reported in the 1984 census were 45.6, 8.4 and 26.4 percent respectively.

The mean possession of animals per household also shows a dismal picture. The average milking cow per household is found to be only 1.24 in rural and 0.37 in urban areas. Goat/Sheep available per household is 1.4 in rural areas and 0.54 in urban areas.

A household in rural and urban areas owns on average 0.45 and 0.08 pack animals respectively. The availability of camel is found to be the lowest while poultry is found to be the highest. A rural household, on average, owns 2.2 poultry compared to 0.91 owned by an urban household. As expected the mean possession of animals per household is lowest in Addis Ababa followed by 'other urban areas'.

3.3.4 Access to Safe Drinking Water Facilities, Sanitary and Housing Conditions of Households.

The absolute majority of the households particularly those of rural areas have had no access to safe drinking water and sanitary toilet facilities (see Table 3.8). Unprotected well/spring and river/lake are the major sources of drinking water of nearly 86 percent of rural households while 72 percent of the households have no toilet facilities. Contrary to rural situation, the majority of

urban households in the sample have had access to safe drinking water facilities and sanitary toilet facilities. Eighty-Six percent of urban households have had access to tap water facilities. These proportions were 98.7% and 77.5% in Addis Ababa and 'other urban areas' respectively. Seventy-three percent of urban households have had access to pit (shared and private) toilet facilities. These proportions were 77 and 71 percent in Addis Ababa and 'other urban areas' respectively. The urban households in the sample appear to have better toilet facilities than those of the urban households reported in the 1984 census. According to 1984 census, about half (49.7%) of the urban housing units reported to have had no toilet facilities. This proportion for the urban households in sample was only 21 percent. It should be also noted here that only 2 percent of rural and 4 percent of urban households reported to have had treated water before drinking.

The data reveal that only 30 percent of rural households have had access to soap as against 74 percent of urban households. The proportion of households reported to have had access to soap were 92 and 62 percent in Addis Ababa and 'other urban centers' respectively.

Table 3.8 further showed that only two percent of rural households reported to have had access to electricity as against 74 percent of households in urban areas. The proportion of households reported to have had access to electricity were 98 and 75 percent in Addis Ababa and 'other urban areas' respectively.

In the survey data were has also collected on the principal materials used in the construction of wall, roofs and floors. An evaluation of these data will provide an indication of the physical quality of housing units and indirectly economic conditions of the households. Data on housing units by structural type is shown in Table 3.8. It may be observed from the table that an absolute majority of the housing units in the sample, particularly those of rural areas, are temporary or semi-temporary in nature i.e., their walls are mostly made of wood and mud, while their roofs are mostly thatched. The walls of about four-fifths of rural housing units are made of wood and mud. A similar proportion (80 percent) of housing units in rural areas are with thatched roofs. Wood and mud were also used in the construction of wall of the absolute majority (84%) of the housing units in urban areas, while the roof of the absolute majority (93%) of housing units in urban areas was made of corrugated iron sheet.

The majority of the housing units in the sample had earth/mud floor. However, this proportion is higher in rural than in urban areas. For example, 98 percent of housing units in rural areas had earth/mud floor compared to only 56.5 percent of housing units in urban areas. Twenty-percent of urban housing units in the sample had cement/cement tile floor while only about one percent of rural housing units had cement/cement tile floor. The proportion of urban housing units with floor made of earth/mud varies between 42.3 percent in Addis Ababa to 66.0 percent in 'other urban areas. About one-third of housing units in Addis Ababa had wooden floor

Table 3.8 Access to Safe Drinking Facilities, Sanitary and Housing
Conditions of the Households of Selected Women, FFS 1990
(Percentage Distribution).

Characteristics	Residence				
	Rural	Urban	Addis Ababa	Other Urban Areas	Total
Total Number of Women	(5049503)	(905335)	(360665)	(544670)	(5954838)
Sources of Drinking Water					
Tap	6.4	85.9	98.7	77.5	18.5
Protected Well/Spring	7.4	5.8	0.7	9.2	7.1
Unprotected Well/Spring	37.3	3.9	0.2	6.4	32.3
River/Lake	48.5	4.0	0.2	6.5	41.8
Others	0.3	0.3	0.1	0.4	0.3
Not Stated	0.1	0.1	0.2	-	0.1
Total	100.0	100.0	100.0	100.0	100.0
Treat Water Before Drinking					
Yes	2.2	3.8	2.5	4.8	2.5
No	97.8	96.2	97.5	95.2	97.5
Total	100.0	100.0	100.0	100.0	100.0
Toilet Facilities					
Flush Private	-	4.5	9.3	1.3	0.7
Flush Shared	-	0.8	1.2	0.5	0.1
Pit Private	16.8	41.9	32.7	48.0	20.6
Pit Shared	8.5	31.1	44.1	22.5	11.9
In the Open	71.6	20.5	10.7	27.1	63.8
Others	3.1	1.0	1.7	0.6	2.8
Not Stated	0.0	0.2	0.3	-	0.1
Total	100.0	100.0	100.0	100.0	100.0

Table 3.8 (Contd.)

Characteristics	Residence				
	Rural	Urban	Addis Ababa	Other Urban Areas	Total
Availability of Soap in the Household					
Yes	30.1	73.6	91.6	61.8	36.7
No	69.9	26.4	8.4	38.2	63.3
Total	100.0	100.0	100.0	100.0	100.0
Electricity					
Yes	1.9	84.0	97.5	75.0	14.4
No	98.1	16.0	2.5	25.0	85.6
Total	100.0	100.0	100.0	100.0	100.0
Ownership of Housing Unit					
Owned	98.4	51.4	44.6	56.0	91.2
Rented	0.8	46.2	53.9	41.1	7.7
Others	0.8	2.2	1.1	2.9	1.0
Not Stated	0.1	0.2	0.4	-	0.1
Total	100.0	100.0	100.0	100.0	100.0
Mean # of Rooms in Housing Unit	1.37	2.45	2.77	2.23	1.54
Material Used in the Construction of Roof					
Corrugated Iron	13.6	92.7	96.3	90.3	25.6
Concrete/Cement	0.1	1.3	3.0	0.2	0.2
Wood/Mud	0.9	0.7	0.1	1.1	0.8
Thatch	81.2	4.4	0.1	7.2	69.5
Others	4.3	0.7	-	1.2	3.8
Not Stated	0.0	0.2	0.5	-	0.1
Total	100.	100.0	100.0	100.0	100.0

Table 3.8 (contd.)

Characteristics	Residence				
	Rural	Urban	Addis Ababa	Other Urban Areas	Total
Material Used in the Construction of Walls					
Concrete/Stone/Brick	0.4	11.9	14.2	10.4	2.1
Wood & Mud	79.9	83.9	83.7	84.1	80.5
Bamboo + Mud/Reed	7.1	0.5	0.1	0.7	6.1
Corrugated Iron	0.3	1.3	1.5	1.2	0.4
Others	12.3	2.3	0.4	3.5	10.8
Not Stated	0.0	0.1	0.2	–	–
Total	100.0	100.0	100.0	100.0	100.0
Materials of the Floors					
Earth	98.2	56.5	42.3	66.0	91.8
Cement/Cement titles	1.2	20.0	18.9	20.7	4.0
Stone/Brick	0.1	2.8	3.0	2.7	0.5
Plastic Tiles-Vinyl	–	2.4	3.7	1.6	0.4
Wood	0.1	14.5	29.7	4.4	2.3
Others	0.4	3.7	2.3	4.6	0.9
Not Stated	–	0.1	0.2	–	0.0
Total	100.0	100.0	100.0	100.0	100.0

Note: The figure in parenthesis refers to number (weighted) of cases.

against only 4.4 percent and 0.1 percent in 'other-urban areas' and rural areas respectively.

The pattern of distribution of the principal materials used in the construction of roof, wall and floor observed for the sample

housing units also corresponds to the pattern of the distribution of materials used in the construction of roof, wall and floor reported in the 1984 census, particularly for rural areas. However, some discrepancies are noted in the materials used in the construction of roof and floor of urban housing units reported in the sample and that of the census. According to the 1984 census, nearly 81 percent of roof and 64 percent of floor were made of corrugated iron sheet and earth/mud respectively. The corresponding figures for roof and floor reported in the sample were 93 and 57 percent respectively. Nearly 23 percent of urban housing units in the sample used cement/cement tile/stone/brick in the construction of floor. The corresponding figure in the 1984 census was only 17 percent. The finding of greater use of corrugated iron sheet and concrete/cement in the construction of roof and floor by urban housing units in the sample compared to those used by total urban housing units reported in the 1984 Census, indicates that the conditions of the housing units of the former are slightly better off than the latter.

The majority of the housing units in the sample are owner-occupied particularly in the rural areas. Over 98 percent of the housing units in rural areas in the sample are owner-occupied. The corresponding proportions in 'other urban areas' and Addis Ababa were 56.0 and 45 percent respectively. The majority (54 percent) of the housing units in Addis Ababa were rented. The tenurial status of the housing units in urban areas obtained in the survey almost corresponds to that was reported for urban housing units in

the 1984 census. According to 1984 census, nearly 47 percent of the urban housing units were rented. The corresponding proportion in the sample was 46 percent.

The average number of rooms per housing unit in the sample is found to be slightly lower than that was obtained in the 1984 census. The average number of rooms per housing unit in the sample is found to be 1.37, 2.45 and 1.54 in rural, urban and for the entire country respectively. The corresponding figures reported in the census were 2.1, 3.6 and 2.3 in that order.

3.4 Representativeness of the Sample Population

In this section of the chapter, an attempt is made to examine the degree to which the sample population represents the national population by comparing some of the FFS sample characteristics with those of the corresponding characteristics of national population reported in the 1984 Population and Housing census. The characteristics chosen for comparison include i) age; ii) sex-ratio, iii) education, iv) ethnicity and v) religion.

3.4.1. Age:

The five-year age distribution (in percentages) of the 1990 FFS sample population i.e., women in the reproductive ages, 15-49 years by major places of residence is compared with the age-distribution of the corresponding national

Table 3.9 Percentage of Women Aged 15-49 in the 1990 Family and Fertility Survey (FFS) and 1984 Census.

Age Group	Rural		Urban		Addis Ababa		Other Urban Areas		Total	
	FFS	Cen	FFS	Cen	FFS	Cen	FFS	Cen	FFS	Cen
15-19	20.0	18.0	28.8	26.5	27.0	28.0	30.0	25.5	21.3	19.2
20-24	16.5	16.1	16.4	16.3	19.4	17.3	14.4	15.6	16.5	16.2
25-29	16.6	17.7	14.8	15.3	14.9	15.3	14.8	15.3	16.3	17.3
30-34	16.9	15.9	13.8	15.1	13.4	16.1	14.0	14.5	16.4	15.8
35-39	13.6	13.6	13.4	13.2	12.8	12.2	13.8	13.8	13.6	13.5
40-44	9.5	11.3	7.4	7.8	7.1	6.4	7.7	8.7	9.2	10.8
45-49	6.9	7.4	5.4	5.8	5.4	4.7	5.3	6.6	6.7	7.2
Total	100	100	100	100	100	100	100	100	100	100

N.B.   Cen = Census.

population reported in 1984 population census and the data are presented in Table 3.9. The result of the comparison at national level shows a close correspondence between the two age distributions in which the differences observed in any single age group doesn't exceed beyond two percentage points (in most cases, it is less than one percentage point) which could be attributed to mere chance factor. A similar closeness in the distribution of age reported in the sample and census also emerges even when the

comparison is made at each major place of residence. The largest difference observed was about 5 percentage points among adolescent women (15-19 years) in 'other urban areas'. The proportion of adolescent women (15-19 years) in 'other urban areas' is reported to be higher than that in the census. This is an exception rather than the rule, which could be also due to sampling variations. It appears that FFS, 1990 sample of women in the reproductive ages, is well represented according to major place of residence, at least in terms of age distribution.

3.4.2. Sex-ratio:

The overall sex-ratio based on the FFS, 1990 is found to be higher than that of the corresponding sex ratio derived from the 1984 census data (see Table 3.3). This overall finding also holds for every major place of residence. However, reverse is the situation in case of sex ratio at birth, which is found to be higher in the 1990 FFS than in the 1984 census. This overall finding also holds for rural areas but in urban areas the sex ratio at birth is found to be higher in the 1984 census than in the 1990 FFS. These differences in sex ratios obtained using survey and census data are, however, minimal, ranging between 2 to 3 percentage points in most cases, with the exception of the difference observed in Addis Ababa in case of overall sex ratio, which was about 7 percentage points (see Table 3.3).

3.4.3.   Formal Education

The sample population seems to be more formally educated than the corresponding national population reported in the 1984 census. As shown below only 6.3 percent of the sample population had

Grades Completed	Percent	
	1990 FFS	1984 Census
1-6	6.3	11.3
7-8	3.2	1.4
9-12	4.3	2.1
University/ higher	0.3	0.4

had primary education compared to 11.3 percent of the corresponding national population in the 1984 census. The proportion of the sample population completed junior secondary (7-8 grade) and higher secondary (9-12 grade) education constituted 3.2 and 4.3 percent respectively. The corresponding proportions for the national female population in the reproductive ages, reported in the 1984 census, were 1.4 and 2.1 percent respectively.

3.4.4   Ethnic and religious composition

As was pointed out in the previous section of the chapter that the ethnic and religious composition of the sample population are different from those of the national population reported in the 1984 census.   Amaras and Tigrawais were under-represented while Oromos and Gurages were over-reported in the 1990 FFS sample population compared to the national population reported in the 1984 census.   According to 1984 population census, Oromos, Amaras, Tigrawais and Gurages constituted 29.06, 28.29, 9.74 and 4.36 percent respectively.   These proportions in 1990 FFS were 39.0, 25.0, 1.2 and 7.1 in that order.

Similarly, Christians particularly Protestants were over-represented while Muslims were under represented in the sample population compared to the national population.   Christians as a whole, Protestants and Muslims accounted for 60.5, 5.5 and 32.9 percent of the national population respectively in the census.   The corresponding figures in the sample population are 66.3, 10.8 and 27.6 percent in that order.

It was also noted earlier that the sample housing units are relatively better off than the national housing units, reported in 1984 census, in terms of possession of consumer durables, particularly those of electronic items (see Table 3.7) and access to other amenities of life such as sanitary facilities and housing conditions (see Table 3.8).

From these comparisons, it appears that the characteristics of the 1990 sample population in most cases do not closely correspond to the characteristics of the national population reported in the 1984 census, with the exception of age distribution. Various reasons could be adduced to explain these small variations. Firstly, the differences observed between the FFS, 1990 and Census, 1984 may result from actual changes in characteristics of the population over the years. The Census was conducted in 1984 while the FFS was conducted six years later in 1990. During this period, one may expect some genuine changes, although very unlikely, in the characteristics of the population. Secondly, it may be due to sampling variations and random error in reporting. Thirdly, these differences particularly those on ethnic distribution, may also arise due to large* under-coverage of northern areas in the sample.

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* See footnotes on page _68_

CHAPTER IV

NUPTIALITY PATTERNS

4.1 Current Marital Status

In a society like in Ethiopia where most of the childbreaing takes place within marriage and contraceptive prevalence is very low (see Chapter on Contraceptive Prevalence) it is necessary to study the pattern of marriage in order to understand the pattern and trends of fertility in the society. In the 1990 Family and Fertility Survey (FFS) detailed data were collected on marriage history, age at first marriage, polygyny and ideal age at first marriage for girls and boys.

In the survey data on marital status for all women in the age groups 15-49 years were obtained under six categories. That is, single (never married), currently married, 'living with a man', separated. divorced and widowed. Since the number of women in the category 'living with a man' at the time of the survey was found only in Addis Ababa and the number of cases were negligible (0.7 percent of Addis Ababa women in the age groups 15-49 years), hence this category was combined with those women who were "currently married".

Tables 4.1 - 4.5 present percentage distribution of women by marital status for the country, rural, urban, Addis Ababa and other urban areas. The data revealed that marriage is universal in

Ethiopia and begins at early age. As has been observed in the 1984 Population and Housing Census nearly ninety (89.1) percent of the population 10 years and above were married by the age of 25-29 years (CSA, 1991). At the ages of 40 years and above only negligible proportion of persons remained as never married. The FFS result confirms the above finding. That is, the FFS survey data also indicate universal marriage pattern particularly in rural areas of Ethiopia. In the country, above eighty percent (82.4%) of the women in the age group 15-49 years have entered into marital union. Only 17.6 percent of the women have never entered into marital union (Table 4.1). The proportion never married was even lower in rural areas (14.2 percent). However, in the case of urban

Table 4.1 Percentage Distribution of Never Married Women by Current Age and Place of Residence, 1990 FFS

Age Group	Rural	Urban	Addis Ababa	Other Urban	Total
15-19	59.4	90.2	96.3	86.5	65.8
20-24	12.2	49.6	65.7	35.7	17.7
25-29	3.2	15.1	27.1	7.5	4.8
30-34	0.2	3.2	5.6	1.6	0.6
35-39	0.2	0.8	1.1	0.6	0.3
40-44	0.5	0.4	1.0	–	0.5
45-49	0.4	0.4	1.0	–	0.4
Total %	14.2	36.2	43.0	31.8	17.6
Number	719,078	328,167	154,924	173,243	1,047,246

area the proportion never married was relatively higher compared to that in the rural areas. In Addis Ababa, nearly half (43.0 percent) of the women in the age groups 15-49 years were never married. The proportion never married were 36.2 and 31.8 percent in all urban and other urban areas respectively.

An examination of the marital status distribution by current age of the women shows some variations (see Table 4.1). The proportion of women who never married decreases substantially with increasing age, from 65.8 percent for women in the age group 15-19 to only less than one percent for those in the ages of 30 years and above. The proportion never married was higher for urban areas (3.6 %) compared to rural areas (14.2%) and a similar pattern of marital status distribution by age was found for women in both rural and urban areas. That is, the proportion of women never married substantially decreases with increase in age. At the age group 45-49 almost all women were married, that is, 99 percent of women in rural, urban and Addis Ababa and one hundred percent of women in other urban areas were married.

Data in Table 4.2 reveal percentage distribution of currently married women by age group and place of residence. The table indicates that almost 72 percent of the women 15-49 years were currently married. The proportion currently married was 76.4 percent in rural areas, 46.0 percent in urban areas and was almost 50 percent in other urban areas and about 41 percent in Addis Ababa. The proportion currently married women increase with age

upto the age group 30-34 or 35-39 and the proportion declines with increasing age group.

Table 4.2 Percentage Distribution of Currently Married Women by Current Age and Place of Residence. 1990 FFS

Age Group	Rural	Urban	Addis Ababa	Other Urban	Total
15-19	35.8	5.3	2.1	-7.2	29.5
20-24	79.7	36.8	22.7	48.9	73.4
25-29	89.9	68.7	57.2	75.9	86.9
30-34	91.2	73.9	72.9	74.6	89.0
35-39	89.4	96.8	69.4	70.1	86.4
40-44	82.6	68.3	67.9	68.6	80.8
45-49	79.5	57.7	56.0	58.8	76.8
Total %	76.4	46.0	40.6	49.5	71.8
Number	3,859,027	415,812	146,358	2,694,454	4,274,838

The percentage distribution of separated, divorced and widowed women by age group are presented in Tables 4.3, 4.4 and 4.5, respectively. At the time of the survey 1.4, 5.6, and 3.6 percent of women in the age groups 15-49 were separated, divorced and widowed, respectively. In urban areas the proportion of women who were divorced and separated were about twice as that of the rural areas (see Tables 4.3 and 4.4). Among urban women, the proportion divorced was relatively lower for Addis Ababa (9.2%) compared to those in 'other urban areas' (12.4%). The percentage of widowed

Table 4.3 <u>Percentage Distribution of Separated Women by Current Age and Place of Residence, 1990 FFS</u>

Age Group	Rural	Urban	Addis Ababa	Other Urban	Total
15-19	1.0	0.7	0.5	0.8	1.0
20-24	2.1	1.7	2.5	1.0	2.0
25-29	1.4	2.8	2.4	3.0	1.6
30-34	0.9	2.5	2.9	2.2	1.1
35-39	0.8	4.0	5.4	3.1	1.3
40-44	1.5	3.3	5.7	1.8	1.7
45-49	1.4	4.4	4.3	4.5	1.8
Total %	1.3	2.3	2.7	2.0	1.4
Number	64,748	20,596	9,834	10,763	85,344

was also relatively higher among urban women (4.4) than rural women (3.4%) (see Table 4.5). This finding is contrary to one's expectation. One may expect higher proportion of widowed women in rural areas than urban areas because of higher level of mortality in rural areas (CSA, 1991). However, this could be due to higher chances of remarriage for women in rural areas. This situation could also be attributed to influx of widowed women from rural to urban areas in search of job opportunities.

Table 4.4   Percentage Distribution of Divorced Women by Current
Age and Place of Residence, 1990 FFS

Age Group	Rural	Urban	Addis Ababa	Other Urban	Total
15-19	3.4	3.7	1.1	5.3	3.4
20-24	5.5	11.3	9.0	13.2	6.3
25-29	4.0	12.2	11.5	12.6	5.2
30-34	3.9	16.5	13.8	18.2	5.5
35-39	4.7	15.8	14.6	16.5	6.4
40-44	7.8	15.7	14.2	16.6	8.8
45-49	5.2	13.8	10.8	15.8	6.3
Total %	4.7	11.1	9.2	12.4	5.6
Number	235,260	100,600	33,027	67,573	335,861

Table 4.5   Percentage Distribution of Widowed Women by Current
Age and Place of Residence, 1990 FFS

Age Group	Rural	Urban	Addis Ababa	Other Urban	Total
15-19	0.4	0.2	–	0.2	0.4
20-24	0.5	0.6	–	1.1	0.5
25-29	1.5	1.2	1.7	2.9	1.5
30-34	3.7	3.9	4.8	3.3	3.7
35-39	4.9	9.6	9.5	9.7	5.6
40-44	7.5	12.3	11.3	12.9	8.1
45-49	13.4	23.7	78.0	20.9	14.7
Total %	3.4	4.4	4.6	4.3	3.6
Number	171,391	40,159	16,523	23,636	211,550

4.2. Age At First Marriage

All ever married women were asked the month and year of first marriage and subsequent marriages if there were any. If they could not remember the year, they were asked how old they were when the marriage took place or how many years ago did the marriage took-place.

The percentage distribution of ever married women in the reproductive age groups 15-49 years by age at first marriage and place of residence are presented in Table 4.6. The data reveal

Table 4.6 Percentage Distribution of Ever Married Women According to Age at First Marriage and Place of Residence. 1990 FFS

Place of Residence	Age at First Marriage				
Age at First Marriage	Rural	Urban	Addis Ababa	Other Urban	Total
Under 15	33.6	38.5	33.5	41.2	34.1
15-17	42.2	35.4	31.4	37.6	41.4
18-19	11.6	11.2	12.8	10.4	11.6
20-21	6.4	6.6	8.8	5.3	6.4
22-24	3.6	4.2	6.6	2.8	3.7
25-29	1.7	2.5	3.1	2.2	1.8
30+	0.2	0.3	0.8	-	0.2
Not Stated	0.7	1.3	2.9	0.5	0.8
Total %	100.0	100.0	100.0	100.0	100.0
Number	4,330,425	577,167	205,741	371,426	4,907,592

that over one-third of the women married before the age of 15 years
and 41.1 percent of women entered into marital union between ages
15-17 years. Furthermore, the data showed that three-quarter of
the ever married women entered into first union before reaching age
18 years. About 12 percent (11.6%) entered into marriage between
ages 18-19 years while 12.1 percent married at age 20 or older.
The pattern of age at first marriage is observed to be the same in
both rural and urban areas. That is, most of the first marriages
took place before the women attained 18 years of age. Over one-
third of ever married women in both rural and urban areas were
married before the age of 15 years. The proportion of women who
entered into marital union before the age of 18 years was
relatively lower in Addis Ababa (64.9%) while this was higher in
other urban areas (78.8%).

According to the data in Table 4.7 the mean age at first
marriage was 15.6 years for the country as well as for rural and
urban areas. It was slightly higher for Addis Ababa (16.2 years).
An examination of the mean age at first marriage by calendar year
indicates that age at first marriage was increasing overtime.
Those women who married in 1976 and after entered into marital
union at a relatively higher age than those married earlier. This
increase is evident in both rural and urban areas although more
pronounced in the latter than in the former. The average increase
in age at marriage observed for those women who married before the
year 1966, and for those who married in 1976 and after was about
two years in urban areas and five years in rural areas.

Table 4.7 Mean Age at First Marriage by Year of Marriage
and Place of Residence, 1990 FFS

	Place of Residence				
Year of Marriage	Rural	Urban	Addis Ababa	Other Urban	Total
Before 1966	15.1	14.2	14.4	14.2	14.9
1966-1970	15.5	15.8	16.8	15.3	15.5
1971-1975	15.7	16.3	17.5	15.7	15.8
1976 +	16.9	19.1	20.6	18.3	17.1
Total	15.6	15.6	16.2	15.3	15.6

The median age at first marriage of ever married women aged 20-49 years is examined by inter-relating it with some background variables (see Table 4.8). Among the background variables examined the level of education seems to be highly correlated with age at first marriage. the higher the level of education the higher the median age at first marriage. Those women who attained university or higher level of education marry at much higher age (19 years) than those women who have had no education (15 years). Further examination of the data also reveals that among the major ethnic groups covered in the survey the Amara and the Sidama women had lowest median age at first marriage (14 years) while the Hadiya and the Kembata women had the highest (17 years). The data also showed the existence of little variation in median age at first marriage by rural-urban residence, religious groups, childhood place of residence. migration status and pattern of work.

Table 4.8   Median Age at First Marriage of Ever Married Women Aged

20-49 years by some Background Variables. 1990 FFS

Background Variables	Median Age	Background Variables	Median Age
Urban-Rural			
Urban	16	**Religion**	
Rural	15	Christians	
		Orthodox	15
		Protestant	15
Educational attainment		Catholic	16
Illiterate	15	Other Christian	15
Non-formal	15	Muslim	16
Primary	16	Traditional Religion	15
Junior Secondary	17	Other Religion	15
Senior Secondary	18		
University/Higher	19	**Childhood Place of Residence**	
		Non-migrants	15
		Rural Areas	15
Ethnic Group		Small Urban	16
Oromo	16	Large Urban	16
Amara	14		
Gurage	16	**Migration Status**	
Sidama	14	Non-Migrants	15
Hadiya	17	Within Same Awraja	15
Welayita	15	Within Same Region	15
Kembata	17	Outside region	15
Gedeo	15		
		Pattern of work	
		After marriage	15
		Before marriage	15
		Before and After	16
		Never worked	15

4.3   Ideal Age At First Marriage

In the FFS, all women were asked 'what is the ideal age at first marriage for boys and girls?'. For the country as a whole the age at first marriage considered to be ideal was 16.1 years for

girls and 21.2 years for boys. The ideal age at first marriage suggested by urban women was higher than that suggested by their rural counterparts and this holds for both the boys and the girls (Table 4.9). For urban women the ideal age at first marriage was 24.0 years for boys and 18.7 years for girls. The corresponding age to a rural women was 20.7 years for boys and 15.7 years for girls.

The ideal age at first marriage is examined by some background variables of the respondents. There shows a positive relationship between suggested ideal mean age at first marriage and the level of education. In other words, the higher the level of education the higher the suggested mean age at first marriage. The mean age at first marriage considered to be ideal for boys increases from 20.7 years among women with no education to 22.4, 23.9, 26.2 and 30.5 years among women with primary, junior secondary, senior secondary and university/higher level of education, respectively. Similarly the age at first marriage considered ideal for girls increases from 15.7 years among illiterate women to 17.0, 18.6, 20.5 and 22.8 years among women with primary, junior secondary, senior secondary and university/higher level of education respectively. This finding indicates that given higher education to women will foster support for late age at marriage.

The examination of ideal age at first marriage by eight major ethnic groups covered in the survey shows little variation. The highest age at first marriage for both the boys (23.0 years) and the girls (17.6 years) was reported by Kembata women while this was

Table 4.9 <u>Mean Ideal Age at First Marriage for Girls and Boys by</u>

<u>Background Variables and Place of Residence, 1990 FFS</u>

	Mean Ideal Age at First Marriage									
Background Variables	Rural		Urban		Addis Ababa		Other Urban		T o t a l	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Current Age										
<20	16.1	20.6	18.7	24.0	20.9	26.4	17.4	22.6	16.7	21.3
20-24	15.6	20.4	18.8	24.9	21.0	27.4	16.9	22.7	16.0	21.1
25-29	15.6	20.7	18.0	24.6	20.1	27.1	16.7	23.0	15.9	21.2
30-34	15.6	20.9	17.6	23.7	19.4	26.5	16.4	21.9	15.8	21.3
35-39	15.7	20.7	17.3	23.3	19.4	25.3	15.9	21.9	15.9	21.1
40-44	15.8	21.0	17.3	23.7	18.5	25.4	16.5	22.5	16.0	21.3
45-49	16.0	20.9	16.8	23.3	18.5	25.4	15.6	21.9	16.1	21.2
Educational Attainment										
Illiterate	15.6	20.6	16.3	22.1	17.9	24.1	15.6	21.3	15.7	20.7
Literacy Prog.	16.0	21.7	17.0	23.1	18.9	25.7	15.9	21.7	16.2	22.1
Other Non-Formal	-	-	16.4	22.8	16.9	25.5	16.0	20.4	16.4	22.8
Primary	16.5	21.3	17.5	23.6	19.1	25.5	16.5	22.4	17.0	22.4
Junior Secondary	17.7	22.1	19.2	25.1	21.0	27.1	18.0	23.8	18.6	23.9
Senior Secondary	18.9	23.3	20.8	26.9	22.0	28.3	19.3	24.9	20.5	26.2
University/Higher	22.4	32.6	22.9	30.1	23.3	30.6	19.4	25.0	22.8	30.5
Ethnic Group										
Oromo	16.3	21.0	17.7	23.3	20.0	25.8	16.4	21.9	16.4	21.2
Amara	14.0	19.1	18.4	24.4	20.3	26.8	16.9	22.7	15.4	20.8
Gurage	16.7	22.3	18.3	24.3	19.7	25.5	17.2	23.4	17.0	22.7
Sidama	14.9	20.0	16.5	22.0	-	-	16.5	22.0	14.9	20.0
Hadiya	16.9	22.5	17.0	20.0	-	-	17.0	20.0	16.9	22.5
Welaiyita	15.4	20.4	16.7	22.7	20.3	25.5	16.4	22.5	15.5	20.6
Kembata	17.5	22.9	18.6	24.1	18.9	25.3	18.3	23.4	17.6	23.0
Gedeo	15.8	20.1	18.0	25.0	-	-	18.0	25.0	15.8	20.1
Religion										
Ortodox Christian	15.3	20.3	18.2	24.3	20.0	26.4	16.8	22.7	16.0	21.2
Protestant	16.5	21.6	19.4	25.2	21.1	27.7	17.4	22.4	16.7	21.8
Catholic	16.4	22.2	18.8	24.8	20.9	26.6	17.6	23.8	16.7	22.5
Other Christian	16.3	21.0	19.2	25.4	24.3	31.1	17.5	23.6	16.6	21.4
Muslim	16.0	21.0	16.7	22.1	19.3	25.4	16.1	21.3	16.1	21.1
Traditional religion	15.9	21.1	15.0	18.0	-	-	15.0	18.0	15.9	21.1
Atheist	16.1	21.2	19.8	25.6	19.8	25.6	-	-	16.2	21.3
Other religion	15.4	19.9	20.3	26.5	25.2	30.2	16.0	23.3	15.5	20.0

Table 4.9 (Contd.)

Mean Ideal Age At First Marriage

Background Variables	Rural		Urban		Addis Ababa		Other Urban		Total	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Childhood Place of Residence										
Non-migrants	15.8	20.6	19.1	25.1	21.4	27.7	17.3	22.9	16.2	21.1
Rural Areas	15.6	20.8	-	-	18.3	24.6	15.7	21.4	15.8	21.0
Small Urban	16.7	22.4	17.6	23.5	19.1	25.8	17.0	22.6	17.2	23.1
Large Urban	18.0	24.0	19.0	25.4	20.8	27.3	17.8	24.2	18.8	25.1
Work Status										
Never Worked	16.1	21.1	18.4	24.1	20.1	26.2	17.1	22.6	16.6	21.7
Working in the Past	15.3	20.5	17.9	24.3	19.5	26.1	16.3	22.6	15.8	21.3
Currently working	15.6	20.6	17.7	23.8	20.3	26.8	16.4	22.3	15.8	20.9
Marital Status										
Never Married	17.1	21.7	19.6	25.2	21.4	27.3	18.0	23.3	17.9	22.8
Currently Married	15.5	20.6	17.3	23.5	19.3	26.0	16.2	22.2	15.7	20.9
Living with a Man	15.5	19.3	17.9	22.9	19.2	25.4	16.8	20.9	16.6	20.9
Widowed	15.2	19.8	17.1	23.2	17.9	24.3	16.5	22.4	15.6	20.5
Divorced	15.3	20.4	16.9	22.7	18.8	25.4	15.8	21.3	15.7	21.1
Separated	15.9	20.7	17.2	23.7	18.9	26.0	15.6	21.6	16.2	21.4
Total	15.7	20.7	18.1	24.0	20.1	26.4	16.7	22.4	16.1	21.2

reported to be lowest by Sidama women, that is, 14.9 years for the girls and 20.0 years for the boys.

As the data indicate almost all women from different religious groups reported similar ideal age at first marriage, about 16 years for girls and 21 years for boys.

Childhood place of residence has been considered as one of the characteristics which could bring variation in ideal age at first

marriage. According to the data those women whose childhood place of residence was in rural areas support early marriage whereas those women brought up in urban areas, particularly in large urban areas, favor relatively late marriage.

Ideal age at first marriage was also investigated based on current age, marital status and work status of women. However, on the basis of these variables, the data showed no substantial variations in the ideal age at first marriage.

4.4 Polygny

Women who were either currently married or living with a man were asked whether their husbands/partners had other wives. The analysis of the data indicates that 14.3 percent of these women are in polygynous unions (see Table 4.10). A further examination of the data also revealed that the percentage of women who are in polygynous unions increases with age, that is, from 4.6 percent for those women in the age group 15-19 to 20.7 percent for those in the age group 40-44 and a slight decline to those in the age group 45-49 (17.8%). The above finding may indicate that the practice of polygynous marriage is declining. On the other hand, the data may also simply indicate that the women at older ages are more likely to be in polygynous union, that is, when the women get older their husbands are more likely to marry a second wife. As might be expected the prevalence of polygynous union is substantially higher in rural areas (15.2%) than in urban areas (6.8%). Except in the

Table 4.10 <u>Percentage of Currently Married Women Who are in</u>
<u>Polygynous Union by Current Age and Place of Residence.</u>
<u>1990 FFS</u>

Current Age	Rural	Urban Ababa	Addis Urban	Other	Total
Under 20	4.6	3.2	–	3.7	4.6
20-24	9.9	5.2	3.2	6.0	9.5
25-29	14.2	3.6	0.9	4.9	13.0
30-34	17.8	7.1	6.6	7.2	16.7
35-39	18.8	8.1	3.8	10.7	17.5
40-44	22.0	10.5	5.0	14.0	20.7
45-49	18.4	11.8	4.8	16.2	17.8
Total	15.2	6.8	4.0	8.4	14.3
Currently Married Women	3.859.027	415.811	143.824	269.454	4.274.838

age groups 20-24 in urban areas and 45-49 in rural areas, the
percentage of women in polygynous union is observed to increase
with age in both rural and urban areas. In Addis Ababa, the
percentage of women in polygynous union is relatively very low,
that is, 4.0 percent.

The distribution of women in polygynous union was also
examined by background variables (see Table 4.11). According to
the data, polygynous union was most common among the illiterate

women and least common among women who attained higher level of education. About 15 percent of the illiterate women practice polygyny while only 0.6 percent of women who attained senior secondary school level of education entered in such union. None of the women with university or higher level of education are in polygynous union. One may conclude from this finding that women with higher level of education are less likely to be in polygynous union. It is evident from the data in Table 4.11 that polygyny is most common among women whose husbands are sales worker (16.3 %) and least common among those women whose husbands are engaged in administrative and managerial work (2.3%). The data in the table also present the prevalence of polygyny by ethnic and religious groups. Among the women covered in the survey, only eight major ethnic groups are presented here. Polygyny seems to be more common among the Sidama (27.5%) followed by the Kembata (25.8%). Gedeo (24.5%) and the Welaiyta (23.8%) women. It is found to be least common among the Amara women(1.8 %). From the data one can further observe that 15.8, 16.5 and 18.5 percent of the Oromo, Gurage and Hadiya women are in polygynous union, respectively. An examination of polygynous union by different religious groups reveals that polygyny was highest among women who follow traditional religion (32.0%) and lowest among Orthodox women (8.9%). Among Muslim women the prevalence of polygynous union was 19.0 percent. The data indicate that about 16 percent of Catholic and Protestant women were in polygynous marriage. This might be due to the limited number of cases involved among these two religious groups. If the women in Wello, Gondar and Tigray regions

had been covered in the survey, the percentage of women in polygynous union among the Amara and followers of the Orthodox Christians would have been lower than what was indicated in the results of this survey.

Table 4.11   Percentage of Currently Married Women who are in
             Polygynous Union by Background Variables. 1990 FFS

Background Variables	Percent	Background Variables	Percent
Place of Residence		Occupation of Husband	
Total	14.3	Never worked	5.9
Rural	15.2	Professional and	
Urban	6.8	Technical	9.0
Addis Ababa	4.0	Administrative and	
Other Urban	8.4	Managerial	–
		Clerical & Related	6.7
Educational Attainment of women		Sales worker	16.2
Illiterate	15.2	Social Service	2.5
Literacy program	6.1	Agricultural and	
Primary	4.7	Related	15.6
Junior		Production and	
Secondary	2.4	Transport	6.5
Senior			
Secondary	0.6	Ethnic Group	
University/		Oromo	15.8
Higher	–	Amara	1.8
		Gurage	16.5
		Sidama	27.4
		Hadiy	18.5
		Welaiyta	23.8
Educational Attainment of Husband		Kembata	25.8
Illiterate	16.2	Gedeo	24.5
Literacy Program	9.9		
Other Non-		Religion	
formal	9.8	Orthodox	8.9
Primary	15.1	Protestant	16.6
Junior	6.7	Catholic	16.0
Senior		Other-	
Secondary	4.3	Christians	18.7
University/		Muslim	19.0
Higher	–	Traditional	
		religion	32.0
		Other Religion	24.8

4.5 Marriage Stability

This section examines the stability of first marriage by place of residence and some background variables. In a society marriage dissolution occurs due to divorce or death of a spouse. According to the data given in Table 4.12 about two-third (61.3%) of the first marriage of women aged 15-49 years was intact. that is. still they are with their first husband. While about one-third of the first marriage dissolved due to divorce and separation and 7.5 percent due to death of a spouse. An examination of the data by age at first marriage of the women reveals that the dissolution of first marriages due to divorce and separation were higher for those who got married at younger ages, that is, under age of 15 years and 15-17 years. Among women who got married before the age of 15 years and between 15-17 years. about 47 and 25 percent of their

Table 4.12   Percentage Distribution of Ever Married Women by Status of First Marriage, 1990 FFS

Age at first Marriage	Status of First Marriage				
	Intact	Spouse died	Separated/ Divorced	Not Stated	Total
<15	45.8	7.0	47.3	–	100.0
15-17	66.2	8.4	25.3	0.0	100.0
18-19	74.1	7.1	18.7	0.1	100.0
20-21	76.7	5.2	18.1	0.1	100.0
22-24	78.3	7.0	14.6	–	100.0
25-29	73.8	7.9	17.5	0.7	100.0
30+	64.9	10.0	25.0	–	100.0
Total %	61.3	7.5	31.1	0.0	100.0
Number	3.008.390	369,449	1,367,968	2,358	4,907,592

first marriage were dissolved due to divorce and separation, respectively. The percentage of first marriage dissolved due to divorce or separation has declined with age at marriage, from 47.3 percent for those women who got married before age 15 years to 14.6 percent for those women who got married at the ages of 22-24 years and it increased to 25.0 percent for those who got married at the age of 30 years and above. One can conclude from this finding that the ideal age at first marriage, for marriage stability, seems to be ages 22-24 years.

The data in Table 4.13 present the status of first marriage by place of residence. namely, rural, urban, Addis Ababa and other urban areas. The data indicate that first marriages are relatively

Table 4.13   Percentage of Ever Married Women by Status of First Marriage and Place of Residence. 1990 FFS.

Place of Residence	Status of First Marriage					Total Ever Married Women	
	Intact	Spouse died	Divorced	Separated	Not Stated	Percent	Number
Rural	63.6	7.4	26.1	2.8	0.0	100.0	4330425
All Urban	44.3	8.2	40.9	6.4	0.2	100.0	577167
Addis Ababa	49.0	8.1	34.0	8.5	0.2	100.0	205741
Other Urban	41.6	8.2	44.7	5.3	0.1	100.0	317426
Total	61.3	7.5	27.9	3.2	0.0	100.0	4907592

stable in rural areas than in urban areas. This is possibly due to cultural influence in rural areas and women's better economical status in urban areas. In rural areas about two-third (63.6%) of the ever married women are still in their first marriage whereas in urban areas only less than half (44.3%) are still in their first marriage. As one may expect in both urban and rural areas, marriage dissolution occurred mainly due to divorce. First marriage stability is relatively better in Addis Ababa than in other urban areas.

First marriage dissolution is higher among those who attained other 'non-formal' education (see Table 4.14). As the educational attainment increases above primary level, marriage dissolution due to divorce decreases. This may be due to the fact that women who attained higher level of education are more likely to marry at later age. An examination of first marriage stability among women from eight major ethnic groups covered in the survey shows that the dissolution of first marriages due to divorce is higher among the Amara women (52.0%) followed by Sidama women (26.8%). The data further show that it was lowest among the Kembata (8.5%) and Hadiya (9.9%) women.

The data in Table 4.14 also present the percentage of women who divorced their first marriage by religious groups and age at first marriage. The data indicate that first marriage dissolution due to divorce is highest among Orthodox Christian women (37.0%) and is the lowest among Catholic women.

Table 4.14 Percentage of Ever Married Women whose First Marriage
Dissolved Due to Divorce by Background Variables
and Place of Residence. 1990 FFS

Background Variables	Place of Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Educational Attainment					
Illiterate	26.2	47.7	39.7	0.51	27.7
Literacy Program	35.2	49.2	51.7	0.47	39.6
Other Non-Formal	–	41.7	33.4	0.49	41.7
Primary	27.0	40.3	36.4	0.43	33.9
Junior Secondary	20.7	26.7	32.6	0.22	24.8
Senior Secondary	8.5	16.6	16.8	0.16	14.9
University/Higher	–	8.7	9.4	–	6.0
Ethnic Group					
Amara	53.5	47.3	40.4	0.52	52.0
Oromo	17.5	38.7	34.9	0.41	19.0
Gurage	16.9	40.0	16.4	0.23	17.5
Sidama	26.7	20.4	21.9	0.37	26.8
Hadiya	8.9	–	–	–	8.9
Welayita	14.7	26.6	–	0.27	15.7
Kembata	8.5	–	–	–	8.5
Gedeo	11.1	70.0	–	–	11.4
Religion					
Christians					
Orthodox	35.74	3.0	35.5	0.48	37.0
Protestant	16.1	23.5	18.4	0.27	16.3
Catholic	9.4	23.2	12.4	0.30	10.2
Other Christian	21.0	36.4	–	0.46	21.7
Muslim	18.0	33.9	25.0	0.36	19.0
Traditional Religion	10.9	NA	–	–	10.9
Atheist	6.6	NA	–	–	6.6
Other religion	24.1	49.2	–	0.67	24.4

Table 4.14 (Cont'd)

Background Variables	Place of Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Type of Current Union					
Polyganous	17.9	38.7	19.7	44.5	18.9
Monogamous	22.8	28.7	22.2	32.4	23.4
Total	26.1	40.9	34.0	44.7	27.9

The Percentage of women whose first marriage had dissolved due to divorce is higher among women who are currently in monogamous union compared to those who are currently in polygynous union. This holds true for the total country and the rural areas. However, in the case of the urban areas the percentage is higher among those women who are currently in polygynous union.

CHAPTER V

FERTILITY PATTERNS, LEVELS, TRENDS AND DIFFERENTIALS

5.1 Introduction

It has been widely argued that among the three major dynamic elements of population aspect fertility forms an important component in the determination of demographic characteristics of the population. In view of this consideration an attempt was made to understand fertility behaviour through the analysis of its determinants based on the birth history data collected in the 1990 family and fertility survey (FFS).

Among the common problems of birth history data are the misplacement of date of birth of children and inaccurate reporting of the total number of children the women had. This in turn might affect all basic fertility measures derived. Because of this, enumerators were carefully trained to probe the respondent and cross check the results provided for partial inconsistencies and thereby increasing the accuracy of the data collected.

The data used for the analysis are compiled from the retrospective birth history question in which each woman aged 15-49 was asked about the total number of children ever born alive by sex, number of children living with her, number

living elsewhere and number who had died. Then the women were asked to provide a full history of each live birth, that is, the name, year and month of birth, sex, survival status and if dead age at death were recorded. Thus based on the number of children ever born and number of live births reported during the year prior to the survey, some basic fertility measures were computed.

Among the topics of fertility examined in this chapter, onset and timing of the first birth is discussed. Also the shape and age pattern of fertility schedule was determined using the age specific fertility rates. Further, in order to examine fertility levels and trends data on age specific fertility and children ever born (parity) were compared with similar data from the 1984 census results. To compute an adjusted level of fertility for the whole country, Addis Ababa, rural and urban areas some indirect fertility estimation techniques were employed. Finally, an attempt is made to study fertility differentials based on reported and standardized mean parity.

5.2 Onset and Timing of the First Birth

The age at which childbearing begins and the timing of first birth vary from one population to another. This difference may account for the disparities in levels of fertility between populations. For example, the prevalence of

teenage childbearing in the society may affect the health status of mothers and their infants. And this in turn might affect the overall level of fertility. Examination of the onset and timing of the first birth will therefore not only aid to determine the level of maternal and child health requirements, but also helps to control the fertility level and thereby population growth.

Among the women covered in the 1990 FFS, those who never had a birth were estimated to be about 23.4 percent. Hence, data on age at first birth given in Table 5.1 refer only to those women who had at least one birth. The data in the table show the percentage distribution of women who have started childbearing and their median age at first birth.

The data indicate that the onset of childbearing both in rural and urban areas seems to concentrate among teenage women. The percentage of women who became mothers before they reached age 20 was 63 percent in rural areas while it was 57 percent in urban areas. It was also found that women in urban areas start childbearing later compared to their rural counterparts. This is confirmed because women in urban areas exhibit slightly higher median age at first birth (19.4 years) compared to rural women (18.9 years). This fact is also corroborated by data presented in Table 4.1 of Chapter IV. From this table, the universality of marriage in Ethiopia can be seen from the proportion single presented by age group. At

Table 5.1 Percentage Distribution of Women and Median Age at First Birth by Place of Residence and Age at First Birth, 1990 FFS

Age at First Birth		Place of Residence			
	Rural	All Urban	Addis Ababa	Other Urban	Total
<15	5.8	6.5	6.0	6.8	5.8
15-17	33.2	28.5	25.6	30.2	32.4
18-19	24.0	21.7	19.6	22.8	23.8
20-21	15.3	17.4	19.5	16.2	15.8
22-24	12.4	15.6	16.5	15.1	12.9
25-29	7.3	8.5	10.0	7.6	7.5
30+	1.9	1.7	2.3	1.3	1.6
N/S	0.2	0.1	0.5	-	0.2
Total	100.0	100.0	100.0	100.0	100.0
Number of Women Who Had a Birth	4,014,951	548,149	200,840	347,309	4,563,100
Median Age at First Birth	18.9	19.4	19.9	19.1	19.0

the age of 25-29 only 3.2 percent of rural women were found to remain single: and a similar proportion of single women was observed at the age of 30-34 for women in urban areas. In the rural areas the singulate mean age at marriage for females was 18.7 years, while this was 22.9 years for females in urban areas. The rise in age at first marriage and delay in childbearing in urban areas compared to the rural areas can be explained by the influence of urbanization.

As shown in Chapter IX, the percent of currently married women who are using contraception in rural areas was 2.6 percent, while this figure was 24.5 percent in urban areas (32.8 percent in Addis Ababa and 19.7 percent in other urban areas). Obviously, the inference that possibly emerge from these findings was that low use of contraception and age at marriage were preconditions for early onset of first birth and high fertility in rural areas.

Interval from first marriage to first birth can also be taken as a crude measure of the timing of first birth. The percentage distribution of women according to interval from first marriage to first birth by age at first marriage and place of residence is presented in Table 5.2. The table also presents the proportion of women who gave birth before their first marriage (premarital birth). Apparently, except for age 20-21 the incidence of premarital birth shown in the table for total women increases steadily with age at first marriage reaching 45 percent for women who married at the age of 30 and over. It is further observed that

Table 5.2 Percentage Distribution of Women Who Married At Least Five Years Ago According to Interval from First Marriage to First Birth by Age at First Marriage and Place of Residence, 1990 FFS

Age at first marriage and Place of residence	Interval between first marriage and first birth (in months)										Number of Women	Mean length (months)
	Negative interval	0-7	8-11	12	13-24	25-36	37-48	49-60	Number of Child	Total		
Rural												
<15	1.0	2.2	0.5	9.2	14.5	12.4	10.7	10.9	38.6	100.0	1,322,392	29.7
15-17	2.3	3.8	1.5	20.2	21.8	15.3	8.7	6.9	19.5	100.0	1,500,727	23.8
18-19	5.3	6.1	2.3	23.0	23.1	12.6	8.1	5.4	14.1	100.0	373,432	21.7
20-21	3.4	6.0	0.7	21.3	28.4	12.6	7.0	7.0	13.6	100.0	214,335	22.2
22-24	11.0	3.8	2.9	26.9	26.8	14.1	2.2	3.0	9.3	100.0	102,061	19.1
25-29	13.5	5.5	0.6	19.6	24.2	12.3	13.9	3.4	7.0	100.0	56,507	23.0
30+	49.2	7.7	-	-	43.0	-	-	-	-	100.0	4,165	15.8
Total	2.7	3.6	1.2	16.7	19.8	13.7	9.2	8.0	25.1	100.0	3,573,618	25.1
All Urban												
<15	0.6	1.8	2.1	5.5	12.1	8.0	8.5	8.5	52.9	100.0	215,926	29.4
15-17	3.6	6.8	5.3	14.6	19.5	14.0	7.4	5.6	23.2	100.0	182,311	22.4
18-19	10.7	10.7	7.0	14.4	24.7	12.1	4.8	5.0	10.6	100.0	53,478	19.8
20-21	9.0	9.2	10.3	12.3	20.5	10.5	8.2	1.6	18.5	100.0	27,574	19.2
22-24	14.2	16.2	6.5	7.4	26.8	16.8	1.5	1.6	9.0	100.0	13,446	17.5
25-29	39.6	20.3	-	-	26.9	-	3.5	6.4	3.2	100.0	6,534	18.4
30+	26.7	23.5	28.6	-	-	21.2	-	-	-	100.0	900	13.7
Total	4.2	5.6	4.4	10.1	17.2	10.9	7.4	6.5	33.7	100.0	500,168	23.9
Addis Ababa												
<15	0.4	1.5	2.6	4.4	13.9	7.6	7.4	8.6	53.8	100.0	68,145	29.1
15-17	4.8	7.3	7.0	14.2	16.4	11.9	7.8	8.8	21.8	100.0	58,989	23.4
18-19	13.7	7.6	8.9	15.0	21.1	8.2	7.5	6.4	11.6	100.0	23,149	21.2
20-21	8.6	12.9	12.0	7.5	20.0	15.4	11.0	-	12.6	100.0	13,571	19.6
22-24	14.6	13.3	11.5	2.8	32.5	8.9	2.6	2.8	11.1	100.0	7,645	17.6
25-29	53.3	21.1	-	-	8.8	-	8.8	-	8.0	100.0	2,630	15.6
30+	26.7	23.5	28.6	-	-	21.2	-	-	-	100.0	900	13.7
Total	5.8	6.0	6.1	9.2	16.8	9.7	7.6	7.3	31.4	100.0	175,029	23.9

Table 5.2 (cont'd)

Age at first marriage and Place of residence	Interval between first marriage and first birth (in months)										Number of Women	Mean length (months)
	Negative interval	0-7	8-11	12	13-24	25-36	37-48	49-60	Number of Child	Total		
Other Urban												
<15	0.8	1.9	1.9	6.0	11.3	8.2	9.0	8.4	52.5	100.0	147.781	29.5
15-17	3.0	6.6	4.5	14.8	21.0	15.0	7.2	4.1	23.9	100.0	123.322	21.8
18-19	8.5	13.0	5.5	14.0	27.5	15.0	2.6	4.0	9.9	100.0	30.328	18.8
20-21	9.5	5.6	8.6	17.0	20.9	5.7	5.5	3.1	24.1	100.0	14.003	18.9
22-24	13.7	20.0	-	13.4	19.3	27.3	-	-	6.3	100.0	5.802	17.5
25-29	30.3	19.8	-	-	39.1	-	-	10.7	-	100.0	3.903	19.4
30+	-	-	-	-	-	-	-	-	-	100.0	-	-
Total	3.3	5.4	3.5	10.6	17.4	11.5	7.3	6.0	35.0	100.0	325.139	23.8
Total												
<15	0.9	2.1	0.8	8.7	14.1	11.8	10.4	10.6	40.6	100.0	1.538.318	29.7
15-17	2.4	4.1	1.9	19.6	21.6	15.1	8.5	6.7	19.9	100.0	1.683.037	23.6
18-19	6.0	6.7	2.9	21.9	23.3	12.6	7.7	5.4	13.7	100.0	426.910	21.4
20-21	4.1	6.3	1.8	20.3	27.5	12.4	7.1	6.3	14.2	100.0	241.909	21.9
22-24	11.4	5.2	3.3	24.6	26.8	14.4	2.1	2.8	9.3	100.0	115.507	18.9
25-29	16.2	7.0	0.5	17.6	24.5	11.1	12.8	3.7	6.6	100.0	63.040	22.7
30+	45.2	10.6	5.1	-	35.4	3.8	-	-	-	100.0	5.065	15.3
Total	2.8	3.9	1.6	15.9	19.1	13.3	8.9	7.8	26.2	100.0	4.073.786	24.9

6.7 percent of the births in Ethiopia were premaritally conceived with 2.8 percent ending in premarital births (Negative interval). The incidence of premarital conception (proportion of women who gave birth in 0-7 months interval) is higher for women in urban areas (5.6%) than their rural counterparts (3.6%). The incidence is 6.0 percent for Addis Ababa, 5.4 percent for other urban areas and 3.9 percent for the country.

The mean length of birth interval by place of residence ranges from 13.7 to 29.7 months for different marriage cohort of women. The mean length for the whole country is about 25 months, indicating that at least an Ethiopian woman on the average takes 2 years and one month to give her first birth after first marriage (see Table 5.2). The interval for women in urban areas is 23.9 months which is slightly shorter compared to the interval for rural women (25.1 months). Moreover, birth intervals that are longer than three years were also observed for a fairly large proportion of respondents, i.e. 17.2 percent of women in rural areas and 13.9 percent of women in urban areas.

5.3 The Age Pattern and Shape of Fertility

For a better insight into the rate of childbearing it would be necessary to analyze the pattern and shape of the fertility schedule. The rate of childbearing is presented in Table 5.3. As can be seen from the table, the percentage distribution of reported age specific fertility rates reflect a stronger tendency for

Table 5.3 Percentage Distribution of Reported Age Specific Fertility Rate
(ASFR), TFR and the Mean Age of Childbearing(M) by Place of
Residence. 1990 FFS

	Place of Residence									
Age of Women	Rural		All Urban		Addis Ababa		Other Urban		Total	
	ASFR	%	ASFR	%	ASFR	%	ASFR	%	ASFR	%
15-19	0.1127	8.2	0.0278	4.0	0.0118	2.3	0.0376	4.7	0.0952	7.5
20-24	0.2950	21.4	0.1578	22.9	0.1134	21.7	0.1962	24.3	0.2747	21.5
25-29	0.3036	22.1	0.1981	28.7	0.1680	32.2	0.2173	26.9	0.2889	22.6
30-34	0.2734	19.9	0.1424	20.6	0.0849	16.3	0.1790	22.2	0.2567	20.1
35-39	0.2186	15.9	0.0887	12.9	0.0733	14.0	0.0985	12.2	0.1990	15.6
40-44	0.1112	8.1	0.0632	9.2	0.0606	11.6	0.0649	8.1	0.1051	8.2
45-49	0.0621	4.5	0.0118	1.7	0.0104	1.9	0.0127	1.6	0.0559	4.4
Total	1.3766	100.0	0.6898	100.0	0.5224	100.0	0.8062	100.0	1.2755	100.0
TFR	6.88		3.45		2.61		4.03		6.38	
M	30.3		30.0		30.5		29.7		30.3	

prolific childbearing at both extreme ends of the reproductive ages in Ethiopia. Especially the contribution of adolescent fertility to total fertility rate (TFR) which is 8.2 percent was highest for rural areas, relatively lower in urban areas (4.0 percent); and 7.4 percent for the whole country.

Adolescent fertility of 7.4 percent reported for the country is slightly lower when compared to the proportion obtained in the World Fertility Survey (WFS) for African countries. According to the results of WFS the average adolescent fertility of 12 African countries was found to be 10.4 percent of the TFR; of these countries, Tunisia is the only one with a lower percentage (2.9 percent) than Ethiopia[1]. However, when the frequency of childbearing is compared along the age groups, it appears to be low in the youngest and the last two age groups, and reaches its maximum level in the age groups 20-29. Moreover, in general the pattern of fertility schedule for the total women and for women in rural areas was found to be similar. For instance, the data on age pattern of childbearing presented in Table 5.3 begins with a minimum level in the age group 15-19, then shows a considerable rise forming a very broad peak extending over the 20-34 age range with a maximum level in the age group 25-29. The second highest contributors of TFR are women in the age group 20-24. Hence, the pattern of fertility schedule may be classified as "broad peak"

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[1] UNited Nations, "Fertility Behaviour in the Context of Development", Population Studies, No. 100, New York, 1987, p.33.

type for the country and the rural areas. For Addis Ababa, other urban and all urban areas, however, the maximum fertility occurred at age group 25-29 and its contribution to TFR is significant compared to other age groups. The indication is that the shape of fertility schedule of all urban, other urban and Addis Ababa women may be described as a "late peak" type.

The pattern of childbearing could also be justified by the mean age of fertility schedule which is 30 years on the average. The lateness of fertility schedule may possibly be explained by the high level of fertility attained by the population and lack of easier access to family planning services by the majority of women.

5.4 Reported Fertility Levels and Trends

5.4.1 Evaluation of Fertility Data

In the 1990 FFS. dates of birth of respondents and their children may not have been reported accurately in some instances. Moreover, it seems that due to recall lapse, women often under reported the total number of children they actually had. Especially data reported by older women are more likely to be subject to this type of error.

One way to assess the quality of retrospective fertility data is to examine the average parities for women in the childbearing age group. Unless fertility has been rising at some time in the

past, average parities are expected to increase steadily to a maximum for women at age group 45-49. However, if mean parity does not increase with age of women, then omission of children should be suspected. The mean parity increases with increasing age of women in Addis Ababa and in rural areas. For other urban and all urban areas, however, a linear trend of increase in average parities could be observed up to age group 40-44. The trend ceases to continue and show a slight decline in average parities in the last age group (see Table 5.4). The possible explanation for the apparent decline in average parity could be recall lapse.

5.4.2 Current fertility

The current level of fertility is drived from data collected on total number of live births that occurred within the last 12 months prior to the survey date. From these data age specific fertility rates and total fertility rates were computed. The prevailing fertility as estimated by total fertility rate shows that on average an Ethiopian woman is expected to give birth to 6.4 children during her entire childbearing period. This rate was found to be 3.5 children for all urban women, four children for other urban women, 6.9 children for women in rural areas and 2.6 children for women living in Addis Ababa. The levels reported for urban areas and Addis Ababa seem to be low when compared with TFR that resulted from previous surveys and the 1984 census.

5.4.3 Cumulative Fertility

The total number of children ever born to a woman of given age provide life time fertility from the beginning of the reproductive life to age at the time of the survey. The corresponding children ever born to women at an older age group (45-49) can be taken as an indicator of the level of completed fertility.

Percentage distribution of women by children ever born, age and place of residence is given in Table 5.4. Among rural women 15-19 years about 77 percent were childless. In the urban areas, however, the percentage of women aged 15-19 that were childless were 93.0, 91.0 and 97.0 percent for all urban, other urban and Addis Ababa, respectively. Similarly, among those aged 20-24, 21.0 percent of rural women and 51.0 percent of all urban women were childless. In urban as well as in rural areas the percentage distribution of childless women decreases with increasing age.

On the other hand, it will be observed that by the end of their reproductive period 21.0 percent of women in rural areas had ten or more children, and this proportion becomes 17.0 percent for women in urban areas. Similarly, among all women aged 45-49 about 16.7 percent in rural areas, 26.8 percent in urban areas, and 18.1 percent in the whole country had four or less children. The proportion of women who were childless at the age group of 45-49 was about 7.0 percent in all urban areas while this was only 3.5 percent in rural areas and 3.9 percent for the country.

Table 5.4 Percentage Distribution of Women by Number of Children Ever Born,
Current Age and Place of Residence. 1990 FFS

Current Age and Place of Residence	Number of Children Ever Born											Total	Number of Women	Mean parity
	0	1	2	3	4	5	6	7	8	9	10+			
Rural														
15-19	77.1	17.1	5.1	0.7	0.1	-	-	-	-	-	-	100.0	982,256	0.30
20-24	21.0	21.6	26.8	20.7	7.5	1.8	0.5	-	-	-	-	100.0	833,449	1.80
25-29	6.4	8.0	15.9	21.2	21.7	16.0	6.8	3.0	0.9	0.1	-	100.0	843,971	3.40
30-39	1.0	3.6	6.9	10.7	17.4	19.4	19.5	11.6	5.7	2.1	2.0	100.0	863,183	5.00
35-39	2.4	2.0	4.4	6.4	9.9	13.8	19.1	15.1	11.8	7.9	7.1	100.0	691,695	6.01
40-44	2.5	3.0	4.5	3.8	7.2	11.6	12.8	12.4	14.1	11.8	16.1	100.0	478,749	6.70
45-49	3.5	3.2	2.7	5.9	4.9	8.0	8.7	11.2	18.0	12.8	21.1	100.0	356,201	7.09
Total	20.5	9.6	10.5	10.6	10.3	9.9	9.0	6.5	5.4	3.5	4.2	100.0	5,049,503	3.74
All Urban														
15-19	93.3	6.1	0.5	0.1	-	-	-	-	-	-	-	100.0	255,465	0.07
20-24	51.2	22.0	15.2	8.4	2.1	-	0.7	0.3	0.1	-	-	100.0	144,687	0.93
25-29	17.7	13.3	22.0	18.9	12.3	7.4	6.2	1.1	1.1	-	-	100.0	135,652	2.54
30-34	7.3	7.1	9.2	14.5	22.2	14.2	11.1	7.8	3.4	2.3	1.0	100.0	126,510	4.08
35-39	4.1	7.7	11.0	8.3	11.8	14.9	11.5	11.7	8.6	5.7	4.7	100.0	122,548	4.97
40-44	4.5	6.7	5.4	6.7	8.4	7.8	10.7	12.1	14.2	10.5	13.0	100.0	70,133	6.07
45-49	6.7	8.7	4.3	6.3	7.5	11.6	13.4	7.3	8.4	8.6	17.3	100.0	50,339	5.90
Total	39.4	10.3	9.3	8.2	8.0	6.4	5.7	4.2	3.4	2.4	2.7	100.0	905,335	2.59
Addis Ababa														
15-19	96.8	2.8	0.2	0.2	-	-	-	-	-	-	-	100.0	96,318	0.04
20-24	63.7	20.6	10.0	4.1	1.4	-	-	-	0.3	-	-	100.0	67,030	0.61
25-29	25.7	18.3	19.5	18.4	8.1	6.2	2.3	1.3	0.4	-	-	100.0	52,934	2.01
30-34	8.8	8.0	10.7	16.8	21.6	13.8	11.7	4.3	1.9	2.4	-	100.0	49,157	3.73
35-39	6.1	9.4	11.0	10.9	13.9	15.8	14.2	8.0	6.6	2.6	1.5	100.0	47,399	4.31
40-44	6.6	7.1	7.3	11.1	13.5	11.2	10.4	8.9	7.8	7.0	9.1	100.0	27,671	5.15
45-49	6.3	9.5	6.5	8.8	6.6	8.0	12.7	6.0	12.6	6.7	16.5	100.0	20,155	5.79
Total	44.3	10.6	8.6	8.6	7.6	6.2	5.3	2.9	2.5	1.6	1.8	100.0	360,665	2.21

Table 5.4 (cont'd)

Current Age and Place of Residence	Number of Children Ever Born											Total	Number of Women	Mean parity
	0	1	2	3	4	5	6	7	8	9	10+			
Other Urban														
15-19	91.1	8.1	0.8	–	–	–	–	–	–	–	–	100.0	159,147	0.10
20-24	40.4	23.3	19.8	12.1	2.8	–	1.2	0.5	–	–	–	100.0	77,657	1.21
25-29	12.6	10.1	23.6	19.2	15.0	8.1	8.8	1.0	1.5	–	–	100.0	82,718	2.87
30-34	6.3	6.5	8.2	13.1	22.6	14.5	10.6	10.0	4.3	2.3	1.7	100.0	77,353	4.30
35-39	2.9	6.6	11.0	6.6	10.5	14.4	9.8	14.0	9.8	7.6	6.6	100.0	75,149	5.38
40-44	3.2	6.5	4.2	3.9	5.0	5.5	11.0	14.1	18.4	12.7	15.5	100.0	42,462	6.66
45-49	7.0	8.2	2.8	4.7	8.1	14.0	13.8	8.1	5.6	9.9	18.0	100.0	30,184	5.98
Total	36.2	10.0	9.8	8.0	8.2	6.5	6.0	5.1	3.9	2.9	3.3	100.0	544,670	2.84
Total														
15-19	80.4	14.8	4.2	0.6	0.1	–	–	–	–	–	–	100.0	1,237,721	0.25
20-24	25.4	21.7	25.1	18.9	6.7	1.5	0.5	0.1	0.1	–	–	100.0	978,136	1.67
25-29	7.9	8.7	16.7	20.9	20.4	14.8	6.7	2.7	0.9	0.1	–	100.0	979,623	3.28
30-34	1.8	4.0	7.2	11.2	18.0	18.8	18.4	11.1	5.4	2.1	1.9	100.0	989,693	4.88
35-39	2.7	2.9	5.4	6.7	10.2	14.0	17.9	14.6	11.3	7.6	6.8	100.0	814,243	5.85
40-44	2.7	3.5	4.6	4.2	7.4	11.1	12.5	12.4	14.1	11.7	15.7	100.0	548,882	6.62
45-49	3.9	3.9	2.9	6.0	5.3	8.4	9.3	10.7	16.8	12.3	20.7	100.0	406,540	6.94
Total	23.4	9.7	10.3	10.2	9.9	9.3	8.5	6.2	5.1	3.3	4.1	100.0	5,954,838	3.56

A glance at Table 5.4 once again indicated that by the end of her reproductive period an Ethiopian woman had an average completed fertility of 6.9 children, while women living in rural areas, Addis Ababa, all urban and other urban areas had 7.1, 5.8, 5.9 and 6.0 children respectively. The completed fertility of other urban, all urban and women living in Addis Ababa was 55.0, 69.0 and 123.1 percent higher than the corresponding reported TFR. The difference between completed fertility and TFR is low for the total women and for women in rural areas. That is, completed fertility is higher than TFR by 8.0 and 3.0' percent for total women and rural women respectively. Theoretically, if fertility remained constant in the past and both children ever born and births in the year prior to the survey were correctly reported the completed fertility and the total fertility rate should be equal in magnitude. However, the discrepancy observed between completed family size and TFR may be either due to under-reporting of current fertility or due to a decline in previous experiences of fertility.

5.4.4 Fertility trends

The 1990 FFS revealed that the TFR for the total, rural and urban population are 6.4, 6.9 and 3.5 children per woman. These rates particularly for the total and the rural population are found to be higher compared with similar rates obtained in the 1984 population census. On the other hand, data collected for Addis Ababa at different points in time over the period 1967-1990 clearly showed a sharp decline in fertility. The reported TFR was found to be 3.98 in 1967, 3.81 in 1978, 3.14 in 1984 and 2.60 in 1990.

Trends in age specific fertility rates over the six year age interval between the census and the survey also show an increase in the rates among women in younger age groups and decline among older women for the country, rural and all urban areas (see Table 5.5). For instance, the age specific fertility rate of women in rural areas obtained in the 1990 FFS was higher than the census for each age group up to 35-39. However, the rates observed in the FFS were on the lower side compared to those in the 1984 census for urban areas excepting the age group 20-24 and 25-29. The decline in age specific fertility rates observed in urban areas particularly in Addis Ababa may be attributed to the increase in age at first marriage and use of contraception. However, due to lack of information on contraceptive use prior to the 1990 FFS there is no convincing evidence of increase on the use of contraceptive, but there is a visible trend of rising age at marriage during the past six years, i.e. SMAM obtained for women from the 1990 FFS showed an increase by two years over the 1984 census.

Comparison of mean parity obtained in the 1984 census with the 1990 FFS may possibly show the trends in life time fertility. The mean parity resulting from the 1990 FFS compared to that obtained in the 1984 census seems to be lower among women in the age group 15-19 and 20-24 for the total, rural and urban population. This is an indication of fertility decline for the women in the younger age cohort. However, for women in the age groups 25 years and over the average number of children ever born (parity) reported in the

Table 5.5   Reported Age Specific Fertility Rates per 1000 Women and Mean Parity in the 1990 FFS and

the 1984 Population Census[*] by Place of Residence

| Age Group of Women | Age specific fertility rate | | | | | | Mean Parity | | | | | |
| | 1990 FFS | | | 1984 Census | | | 1990 FFS | | | 1984 Census | | |
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
15-19	113	28	95	101	36	87	0.30	0.07	0.25	0.50	0.15	0.42
20-24	295	158	275	247	141	230	1.80	0.93	1.67	1.86	1.06	1.73
25-29	304	198	289	270	192	259	3.40	2.54	3.28	2.94	2.31	2.85
30-34	273	142	257	249	180	238	5.00	4.08	4.88	3.99	3.37	3.89
35-39	219	89	199	217	153	207	6.01	4.97	5.85	4.71	4.24	4.64
40-44	111	63	105	137	89	132	6.70	6.07	6.62	5.09	4.56	5.03
45-49	62	12	56	92	54	87	7.09	5.90	6.94	5.26	4.62	5.17
TFR	6.9	3.5	6.4	6.6	4.2	6.2	-	-	-	-	-	-

[*] Source: CSA. "The 1984 Population and Housing Census Analytical Report at National Level".
Addis Ababa, Dec. 1991, pp.199 - 200.

survey was much higher than those shown in the 1984 census. Given the variations in the quality of fertility data collected, the changes observed in the level of cumulative fertility indicate better reporting of children ever born in the 1990 FFS compared to the 1984 census or fertility might have increased for women in the age groups 25 years and above during 1984-1990 (see Table 5.5).

Fertility changes over this period are also examined by the ratio of parity to cumulative current fertility (P/F) (Brass, 1980). Under certain assumptions this method compares the average parities and cumulated current fertility. If fertility remained constant in the past it is felt that the two sets of data give ratios which are very close to unity. However, the P/F ratios presented in Table 5.6 are generally greater than unity. Moreover, the ratios exhibit a certain trend with age. For example, the ratios that are larger than unity at the younger age groups for the country and rural areas, gradually declines to unity at the older age groups. This is a clear evidence of omissions and reference period errors. On the other hand, the P/F ratios in Addis ababa, all urban areas and other urban areas are almost constant and this may imply that the shape of fertility schedule is similar for parity and cumulative current fertility but differ as to the implied TFR suggesting that fertility may have been declining in urban areas.

Table 5.6   Ratio of Parity to Cumulative Current Fertility(P/F) by
            Current Age of Women and Place of Residence, 1990 FFS

Place of residence	P/F by Age group of Women						
	15-19	20-24	25-29	30-34	35-39	40-44	45-59
Rural	1.21	1.26	1.15	1.14	1.07	1.06	1.04
All Urban	1.52	1.63	1.65	1.72	1.71	1.84	1.71
Addis Ababa	2.61	1.73	1.74	2.16	2.05	2.09	2.23
Other Urban	1.42	1.64	1.58	1.52	1.56	1.73	1.49
Total	1.23	1.31	1.20	1.19	1.13	1.13	1.10

In order to investigate trends in fertility age cohort and period analysis of fertility are also employed. Under certain assumptions a cohort-period rate may show an indication of fertility change over a long period prior to the survey. This is only possible if the data are free from omission and time scale errors in the placement of births especially among the older cohorts, and if these errors are present any interpretation of fertility change would be misleading.

The data in Table 5.7 present the cohort-period fertility rates by place of residence computed retrospectively at five years interval from the date of the survey. These rates were derived by dividing the total number of births in the five year period by number of women covered in the survey and the period of exposure. The data in the table can be read in three different ways, each indicating a particular fertility situation. Reading the table up the diagonal from left to right gives the fertility experiences of

each cohort of women. For instance, considering the total women covered in the survey, each woman in the cohort aged 45-49 at the time of the survey reported to have had 0.0966 births 0-4 years ago, 0.2069 births 5-9 years ago, 0.2699 births 10-14 years ago ... etc.. Reading the table down the column gives fertility situations of different cohorts of women in the same time period. For example, from the rates recorded for total women one may observe the following. That is, 0-4 years before the survey, women who belonged to age cohort 15-19 had 0.0489 births, those in the cohort 20-24 had 0.2374 births, those in the age cohort 25-29 had 0.2856 births,...etc. Reading the table along the rows gives fertility experiences of different cohort of women at fixed age or in different time period. For example among the total women, the fertility rate of different cohorts, when they were aged 15-19 was 0.0574 for those currently aged 45-49 (30-34 years ago), 0.0642 for those currently aged 40-44 (25-29 years ago), 0.0647 for those currently aged 35-39 (20-24 years ago),..etc.

Therefore, comparison of the fertility rates of different cohorts of women at fixed age gives the impression that fertility might have been declining in the country since the late seventies. For example, in the entire period covered by the survey the highest (peak) fertility was observed during 10-14 years prior to the survey for all age cohorts except for the age cohort 30-34. Thus, it can be observed that peak fertility was shown by age cohort 25-29 at age group 15-19 (0.0960), by age cohort 30-34 at age group 20-24 (0.2762), by age cohort 40-44 at age group 30-34 (0.3200) and

Table 5.7 Cohort-period Fertility Rates by Age Cohort at the time of the Survey by Place of Residence, 1990 FFS

Age Cohort at the time of Survey	Years before survey							
	0-4 (1985-89)	5-9 (1980-84)	10-14 (1975-79)	15-19 (1970-74)	20-24 (1965-69)	25-29 (1960-64)	30-34 (1955-59)	35+
Rural								
<15	0.0000	0.0015	0.0027	0.0031	0.0050	0.0029	0.0022	0.0021
15-19	0.0578	0.1005	0.0954	0.0782	0.0634	0.0667	0.0586	
20-24	0.2562	0.2807	0.2786	0.2293	0.2152	0.1996		
25-29	0.3005	0.3401	0.3253	0.2961	0.2611			
30-34	0.2978	0.3229	0.3196	0.3003				
35-39	0.2573	0.2626	0.2739					
40-44	0.1709	0.2156						
45-49	0.1054							
All Urban								
<15	0.0000	0.0046	0.0036	0.0045	0.0050	0.0032	0.0027	0.0035
15-19	0.0144	0.0526	0.0996	0.0660	0.0722	0.0474	0.0485	
20-24	0.1296	0.2099	0.2599	0.2222	0.1809	0.1678		
25-29	0.1931	0.2791	0.2908	0.3027	0.2470			
30-34	0.2048	0.2497	0.3197	0.2901				
35-39	0.1523	0.2421	0.2416					
40-44	0.1155	0.1453						
45-49	0.0345							
Addis Ababa								
<15	0.0000	0.0004	0.0032	0.0041	0.0044	0.0009	0.0032	0.0050
15-19	0.0073	0.0342	0.0783	0.0742	0.0453	0.0588	0.0576	
20-24	0.0832	0.1631	0.2370	0.1783	0.1667	0.1731		
25-29	0.1559	0.2553	0.2828	0.2558	0.2646			
30-34	0.1720	0.2335	0.2756	0.2309				
35-39	0.1177	0.1829	0.2605					
40-44	0.0824	0.1266						
45-49	0.0376							

Table 5.7 (cont'd)

Age Cohort at the time of Survey	Years before survey							
	0-4 (1985-89)	5-9 (1980-84)	10-14 (1975-79)	15-19 (1970-74)	20-24 (1965-69)	25-29 (1960-64)	30-34 (1955-59)	35+
Other Urban								
<15	0.0000	0.0049	0.0039	0.0048	0.0055	0.0047	0.0023	0.0025
15-19	0.0188	0.0686	0.1133	0.0608	0.0891	0.0400	0.0425	
20-24	0.1697	0.2399	0.2744	0.2500	0.1902	0.1643		
25-29	0.2168	0.2943	0.2958	0.3333	0.2353			
30-34	0.2256	0.2600	0.3485	0.3295				
35-39	0.1741	0.2807	0.2291					
40-44	0.1371	0.1577						
45-49	0.0324							
Total								
<15	0.0000	0.0010	0.0030	0.0030	0.0050	0.0030	0.0020	0.0020
15-19	0.0489	0.0934	0.0960	0.0766	0.0647	0.0642	0.0574	
20-24	0.2374	0.2709	0.2762	0.2282	0.2108	0.1957		
25-29	0.2856	0.3323	0.3201	0.2969	0.2594			
30-34	0.2859	0.3119	0.3200	0.2990				
35-39	0.2415	0.2600	0.2699					
40-44	0.1638	0.2069						
45-49	0.0966							

by age cohort 45-49 at age group 35-39 (0.2699). However, for the age cohort 30-34, the highest fertility (0.3323) was attained by age group 25-29 (during the period 5-9 years before the survey). Thus, unless there is misplacement of births to the peak period, perhaps from the present and from the most distant past it is likely that the fertility trend probably reflect rising fertility from the period 30-34 years before the survey up till the peak period (10-14 years ago) and a declining fertility from the peak period up to the most recent period.

The findings in cohort-period fertility trend observed for the whole country also holds for the urban areas. As shown by the data in the table the highest fertility level was observed for the period 10-14 years before the survey date with the exception of few cohorts. For the rural areas, however, the peak occurred 5-9 years prior to the survey followed by a declining fertility schedule thereafter.

5.5   Estimated Fertility Levels and their Plausibility

In the previous section current and cumulative fertility were examined. In the following section the level of fertility is estimated by employing three different indirect techniques. These techniques aim at obtaining fertility rates under certain assumptions. In situations where the assumptions underlying the techniques are met the estimates might give results which are very close to the true level.

The first technique to be used is the Brass P/F ratio method. Brass recommended the P/F ratio of women aged 20-24 (P_2/F_2) as an adjustment factor for ASFR and TFR (Brass. et.al, 1968). However, different researchers used a combination of different P/F ratios to adjust the current fertility. In this case four combinations of P/F ratios were used. The second technique applied was the Brass Arriaga method. This technique used to estimate the ASFR from CEB data by the graduation of a 9th degree polynomial. Then the recorded and transformed ASFR's were cumulated and the ratios of these two sets of data provide the possible adjustment factors. According to Arriaga this modification not only has analytical and diagnostic advantages but also leads to extension of the method to conditions of changing fertility [1] /. The third technique used to enhance the determination of fertility levels is the Brass Relational Gompertz Model. The fit of this model apply to the mean parities of the younger women by least square method (Brass, 1981), because it is thought that the parities of older women might be distorted by common errors present in the retrospective and current fertility data. Moreover, due to errors in the data or small number of births in the age group 15-19, TFR values of these women should not be included in the analysis.

In Table 5.8 estimates of TFR based on the above techniques are shown. Except total fertility rates estimated by fitting Brass

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[1]/ Unated Nation, "The United Nations Software Package for Mortality Measurement (Mortpak-Lite)". Population Studies No.104, New York, 1985, p.73.

Table 5.8   Total Fertility Rates Estimated by Brass Relational Gompertz Model, Brass P/F Ratio and Brass Arriaga Method by Place of Residence, 1990, FFS

Brass P/F Adjustment Factor	Rural	All Urban	Addis Ababa	Other Urban	Total	Age of Women	Rural		All Urban		Addis Ababa		Other Urban		Total	
							BRG(P)	BRG(F)	BRG(P)	BRG(F)	BRG(P)	BRG(F)	BRG(P)	BRG(F)	BRG(P)	BRG(F)
(P/F)1	8.7	5.6	4.5	6.6	8.4	15-19	6.6	8.1	5.5	6.7	4.9	6.3	5.4	7.5	6.4	8.0
(P/F)2	8.3	5.7	4.5	6.5	8.0	20-24	6.9	8.7	5.0	5.1	3.2	3.8	6.2	6.3	6.6	8.3
(P/F)3	8.1	5.8	4.9	6.4	7.9	25-29	6.5	7.8	5.3	5.3	3.9	4.3	6.0	5.8	6.3	7.5
(P/F)4	7.9	5.8	5.1	6.2	7.7	30-34	6.8	7.6	5.6	5.7	4.8	5.0	6.0	5.8	6.6	7.3

[Y(x) = a + b Ys(x)]*

Arriaga Adjustment for Age group	Rural	All Urban	Addis Ababa	Other Urban	Total		Rural		All Urban		Addis Ababa		Other Urban		Total	
a							0.0432	-0.1505	-0.1283	-0.1417	-0.0845	-0.1864	-0.1202	-0.1056	0.0324	-0.1599
b							1.0876	0.9692	1.2337	1.2629	1.3876	1.3398	1.1727	1.2577	1.1185	1.0022
20-24	8.2	5.6	4.4	6.4	7.9											
25-29	7.8	5.8	5.0	6.2	7.6											
20-29	8.0	5.7	4.7	6.3	7.8											

*- Transformed by taking natural logarithms twice on each side of basic Gompertz equation $F(x)/F = {}_A B^x$ where A and B are constants lying between zero and one, $F(x)$ is the cumulated age specific fertility rates up to age X and F the total fertility rate.

- The transformed equation is supposed to minimize the deviation of the fertility pattern of the real population from linearity. In the equation a and b are constants, Ys(x) are standardized values.

Notes:- $(P/F)1 = P_2/F_2$, $(P/F)2 = 1/2(P_2/F_2 + P_3/F_3)$, $(P/F)3 = 1/3 (P_2/F_2 + P_3/F_3 + P_4/F_4)$, and $(P/F)4 = 1/2(P_3/F_3 + P_4/F_4)$.

BRG(P) = Brass Relational Gompertz Model using mean parity.

BRG(F) = Brass Relational Gompertz Model using cumulated current fertility.

Relational Gompertz Model to parity data (BRG(P)) for rural areas and the whole country, all the estimates were found to be on the high side than reported TFR. For the country and rural areas, however, it gave rates which are very similar to reported TFR. Further, it should be pointed out here that the completed fertility of all areas attained a value that are higher than their reported TFR, which may possibly be due to understatement of current fertility. Taking this fact into account an attempt has been made to ascertain a more plausible fertility level simply by comparing the reported completed fertility rates available with the estimated total fertility rates.

For all areas the estimated total fertility rates provided by BRG(P) are less than the corresponding rates estimated by completed fertility. But, the Brass Relational Gompertz Model fitted to age pattern of cumulated current fertility BRG(F), Brass P/F ratio and Arriaga techniques yielded rates which are higher than completed fertility for the country and rural areas and also yielded rates which fall short of completed fertility for Addis Ababa. For all urban areas, however, Brass P/F ratio and Arriaga method gave results which are nearly equal to completed fertility but an estimated rate derived by BRG(F) is on the low side. Further, estimated rates for other urban areas by applying Brass P/F ratio and Arriaga method appear on the high side while Brass Relational Gompertz Model provides rates that are about equal with completed fertility.

In an attempt to capture a more plausible fertility level the various rates estimated so far are examined to ascertain the final level for the country, Addis Ababa, rural and urban areas.

The TFR adjusted for the current fertility data from the 1990 FFS on the basis of weighted average of P_2/F_2, P_3/F_3 and P_4/F_4 resulted in a TFR of 8.1 children per woman for rural areas. Moreover, the average of total fertility rates estimated for age groups 20-34 by BRG(F) and the rate estimated for age groups 20-29 by Arriaga method both gave a TFR of 8.0 children per woman. On the other hand, assuming that the reported CEB for rural women is fairly accurate a completed fertility of 7.1 children per woman is believed to be plausible, but somehow downwardly biased. Hence, taking an estimated TFR of 8.3 children per woman by 1/2 (P_2/F_2 + P_3/F_3) as the most probable maximum value and accepting an estimated TFR of 7.6 children per woman for age group 30-34 by BRG(F) as a minimum value, the range within which the plausible level of TFR may fall would be 7.6 and 8.3 children per woman for rural area.

As regard to fertility data of urban areas, children ever born has been grossly under reported. The mean parity of 6.1 recorded for women in age group 40-44 is higher than the mean parity of 5.9 for women aged 45-49. In addition, all the TFR's estimated by either method fall short of the mean parity of women aged 40-44. Thus, taking an estimated average TFR of 5.5 children per woman derived through BRG(P) and BRG(F) for age groups 25-34 as a minimum value, the probable limits within which the true level of fertility

may lie in urban areas would be 5.5 and 6.1 children per woman.

As pointed out in the trend analysis a recent fertility decline has been observed for Addis Ababa. In this case the Arriaga estimation technique seems more suitable for adjusting the fertility data of Addis Ababa. On the other hand, the P/F ratios at age group 20-24 (P_2/F_2) and 25-29 (P_3/F_3) exhibit the same ratio suggesting $1/2$ ($P_2/F_2+P_3/F_3$) adjustment factor as the most appropriate. Hence, an estimated TFR of 4.7 children per woman derived by Arriaga technique for age groups 20-29 has been chosen on the one hand and a TFR of 4.5 children per woman adjusted based on $1/2(P_2/F_2+P_3/F_3)$ was selected on the other. The average of these two estimates gives a TFR of 4.6 as the most plausible fertility level for Addis Ababa.

Among all TFR's estimated and presented in the table, a TFR of 7.3 was a minimum value obtained for the whole country. Thus, taking a TFR of 8.0 estimated by $1/2$ ($P_2/F_2+P_3/F_3$) as an upper limit of the range, and a TFR of 7.3 estimated by BRG(F) for age group 30-34 as a lower limit of the true TFR, a plausible TFR level for the country would be 7.3 and 8.0.

In conclusion therefore, given the above ranges one may take an average TFR of 7.7, 4.6, 6.4, 5.8 and 8.0 children per woman as a plausible fertility level for the whole country, Addis Ababa, other urban areas, all urban areas and rural areas respectively. These levels almost coincide with TFR values adjusted by Brass

Arriaga technique for age group 20-29 or 1/2 $(P_2/F_2+P_3/F_3)$ for all urban areas and for Addis Ababa, TFR adjusted by $1/3(P_2/F_2+P_3/F_3+P_4/F_4)$ for other urban areas, and TFR adjusted by $1/2(P_3/F_3+P_4/F_4)$ for rural areas and for the whole country.

5.6 Fertility Differentials

The fertility level that prevails in a country is expected to be influenced by socio-economic settings and cultural values that exist. A sound knowledge of these socio-economic and cultural values and their impact on the course of fertility might be understood by the study of fertility differentials. The analysis is of paramount importance in understanding the mode of reproduction and identification of factors and social groups responsible for it, and consequently provides a basis for effective formulation and implementation of population policies.

In this section the relationship of fertility with some selected background variables including current marital status, type of marital union, age at first marriage, duration of marriage, place of residence , ethnicity, religion, education, work status, occupation, and place of residence during childhood will be investigated based on the data presented in Table 5.9 and 5.10. However, the results observed for some of these variables might be confounded by the influence of urbanization. Hence, among these variables only four variables that are expected to have significant

impact on fertility differential because of the difference in proportion of women in urban areas are presented in Table 5.11.

5.6.1 Marriage and Fertility

a. Current Marital Status and Fertility

In most Ethiopian societies couples are expected to bear children only after they contracted marriage. Of course, it is not very strange for unmarried females to have children but their fertility is negligible compared to those who are ever married.

For the purpose of this study, marital status was classified into six distinct categories, namely, never married, currently married, living with a man, widowed, divorced and separated. As can be seen from Table 5.9, the standardized mean parity for those women aged 15-49 show higher fertility for currently married and widowed women (3.86 children), followed by separated (2.82 children), women living with a man (2.58 children), divorced women (2.56 children) and lastly by those who never married (0.24 children). In general similar pattern of fertility level is observed for women in the age groups 30-39 and 40-49 by marital status.

b. Type of Marital Union and Fertility

In the 1990 FFS women were classified by type of marital

union. that is, monogamous, polygynous, not in union and the never married. However, here the analysis is limited only on the interrelationship of fertility with monogamy and polygyny. A woman is said to be polygynously married if she is legally married to a man who has another wife and she is considered as monogamously married if her husband has no other wife.

A number of studies indicated no clear-cut relationship between fertility and type of marital union, i.e, polygnously and monogamously married women or that polygyny exerts a depressing effect on fertility. This is because the possible links of this variable and fertility often operate through various intervening variables such as frequency of coital relationship, duration of post-partum abstinence ... etc. In the 1990 FFS, however, the reported mean parity (4.82 children) of polygynously married women was found to be higher than the mean parity (4.32 children) of monogamously married women (see Table 5.9). However, after standardization for differences in age, the parity of polygynously married women was reduced to 3.76 compared to a similar mean parity of 3.88 for monogamously married women.

c. Age at First Marriage and Fertility

A number of studies have shown negative association between age at first marriage and cumulative fertility. The impact of age at first marriage on fertility is manifested through regulating the exposure period on childbearing.

The data presented in Table 5.9 show a declining mean parity with the rising age at first marriage group. With the exception of women who first married at the age of 20-21 years the data showed a declining mean parity with increasing age at first marriage as expected, i.e., from 4.47 children for women married under the age of 15 to 2.09 children for those who married at 30 years of age and above. The standardized mean parity also revealed a negative association between age at first marriage and mean parity. That is, mean parity ranges from 4.09 for women who married at the age of under 15 compared to 1.99 children for those who married at the age of 30 years and above. In general this pattern of relationship between age at first marriage and fertility holds for women at age groups of under 30, 30-39 and 40-49 years.

d. Duration of Marriage and Fertility

The influence of marital duration on fertility was also examined based on the data presented in Table 5.9. The data in the table indicate that mean parity in general increases with increase in duration of marriage. The mean parity which is almost one child for women in the marriage duration group of less than five years increase to 7.83 children for women in the marriage duration group of 30 years and above. Concerning the association between fertility and duration of marriage the standardized mean parity also showed almost a similar pattern with that of reported mean parity. That is, the standardized mean parity of an individual woman who has been married for a duration of below five years has

Table 5.9 Reported and Standardized* Mean Parity by Current Marital
Status, Type of Marital Union, Age at First Marriage,
Duration of Marriage and Broad Age Group, 1990 FFS

| Marital | Broad Age Group | | | Total Mean Parity | |
Conditions	<30	30-39	40-49	Reported	Standardized
Current Marital Status					
Never Married	0.04	0.42	0.33	0.04	0.24
Currently Married	2.47	5.50	6.99	4.40	3.86
Living with a Man	1.92	3.14	5.41	2.85	2.58
Widowed	2.88	5.09	6.48	5.52	3.86
Divorced	1.28	3.59	5.26	2.89	2.56
Separated	1.60	3.59	6.12	2.98	2.82
Type of Marital Union					
Monogamous	2.44	5.53	7.10	4.32	3.88
Polygamous	2.77	5.37	6.56	4.82	3.76
Age at First Marriage					
<15	2.76	5.65	7.04	4.47	4.09
15-17	2.37	5.60	6.89	4.43	3.86
18-19	1.83	5.00	6.48	3.86	3.27
20-21	1.52	4.73	6.44	4.22	3.66
22-24	1.16	3.92	6.73	3.27	3.20
25-29	0.90	2.66	6.10	3.86	3.03
30+	−	1.60	2.52	2.09	1.99
Duration of Marriage					
<5	0.88	2.03	3.48	0.96	1.66
5-9	2.38	2.85	3.07	2.46	2.50
10-14	3.88	4.27	4.76	4.06	4.06
15-19	4.66	5.58	5.62	5.48	5.33
20-24	−	6.48	6.16	6.37	6.22
25-29	−	7.35	7.29	7.29	5.87
30+	−	6.00	7.84	7.83	7.13

* The total 1990 FFS female population of Ethiopia is used as
standard.

1.66 children on the average, and that it increases monotonically to 6.22 children for women in the marriage duration group of 20-24 years. Thereafter, mean parity falls to 5.87 children for women in 25-29 years of marital duration and rises again to 7.13 children for women whose marriage lasted for 30 years and over. Part of the reason for the decline in the reported parity for those women who were married for 25-29 years may be because older women tend to forget reporting some of their children. Similar pattern of relation between fertility and duration of marriage holds for women at age groups of under 30, 30-39 and 40-49 years.

5.6.2 Place of Residence and Fertility

There are fertility differentials in general between rural and urban areas. This could be due to the variation between rural and urban areas in the availability of education and health facilities, accessibility of family planning services, ... etc. that could have influence on fertility.

The data presented in Table 5.10 indicate that reported mean parity is lower for women in urban areas compared to their counterparts in rural areas. Among the urban areas, it can be seen that the mean parity of other urban areas is higher than that of Addis Ababa by 0.6 children. When mean parities are standardized to remove the discrepancy in the age distribution, parity for women in rural areas remained at a level of 3.7 children while that of women in all urban areas increased from 2.6 to

2.9. Similarly, mean parity of other urban areas increased from 2.8 to 3.2 while for Addis Ababa the increase was from 2.2 to 2.5 children. Although the differences in standardized mean parity was reduced. it still underscores the presence of higher fertility in rural than urban areas.

5.6.3 Ethnicity and Fertility

In this study eight major ethnic groups that had significant proportion of respondents in the survey were considered. The women in these ethnic groups are shown in Table 5.10 with their average number of children ever born. Looking at the reported overall mean parities one may observe the Kembata, Sidama and Gedeo as the most fertile ethnic groups in the country each having 3.9 children on the average. The Oromo, Gurage and Welayta ethnic groups occupy an intermediate position with an average mean parity of 3.6 each. The study revealed lower mean parity (3.2) for the Amara women. In effect. standardizing age differences produced changes in the relative positions in the level of fertility of the women of some ethnic groups. For example, the mean parity of women among Sidama increased to 4.3 from 3.9 while the mean parity of women among Kembata and Gedeo ethnic groups reduced to 3.5 and 3.8, respectively. On the other hand, the mean parity of women among Welayta also rises from 3.6 to 3.8. Hence it may be concluded that among the ethnic groups considered, the Sidama women were the most fertile followed by Welayta, Gedeo, Oromo, Hadiya, Kembata and Gurage. But among the women in the ethnic groups considered the Amara women were found to have the lowest fertility level.

Table 5.10   Reported and standardized, mean parity of women aged
15-49 by background variables, 1990 FFS

Background Variables	Total Mean Parity	
	Reported	Standardized
Place of residence		
Rural	3.7	3.7
Urban	2.6	2.9
Addis Ababa	2.2	2.5
Other Urban	2.8	3.2
Ethnicity		
Amara	3.2	3.3
Oromo	3.6	3.6
Gurage	3.6	3.4
Kembata	3.9	3.5
Welayta	3.6	3.8
Sidama	3.9	4.3
Gedeo	3.9	3.8
Hadiya	3.5	3.6
Religion		
All Christian	3.4	3.5
Orthodox	3.4	3.5
Protestant	3.3	3.8
Catholic	3.0	3.4
Muslim	3.8	3.7
Traditional Religion	4.1	3.9
Education		
Illiterate	3.9	3.7
Non-formal	2.7	3.5
Primary(1-6)	1.8	3.0
Junior Secondary (7-8)	0.9	2.8
Senior Secondary and above	0.9	2.0

Table 5.10 (cont'd)

Background Variables	Total Mean Parity	
	Reported	Standardized
Work Status		
Not Working	3.4	3.6
Working	3.7	3.5
Occupation		
Professional and Technical	2.1	2.0
Administrative and Managerial	3.6	1.5
Clerical and Related	1.8	2.0
Sales workers	3.9	3.5
Social Service Workers	1.6	2.3
Agriculture and Related	3.8	3.7
Production and Transport	3.4	3.2
Place of residence During Childhood		
Non-migrants	3.1	3.5
All-migrants	4.1	3.7
Rural area	4.2	3.7
Small urban	2.9	3.4
Large urban	2.5	3.0

* The total 1990 FFS female population of Ethiopia is used as standard.

Table 5.11 Reported and Standardized[*] Mean Parity of Women Aged
15-49 by Background Variables, Urban areas, 1990 FFS.

Background Variables	Total Mean Parity	
	Reported	Standardized
Ethnicity		
Amara	2.3	2.4
Oromo	3.0	2.7
Gurage	3.2	3.2
Religion		
All Christians	2.5	2.5
Orthodox	2.5	2.5
Protestant	1.9	2.5
Catholic	1.6	2.2
Muslims	3.2	3.0
Place of Residence During Childhood		
Non-migrants	1.8	2.5
All-migrants	3.1	2.7
Rural area	3.4	2.7
Small urban	2.5	2.8
Large urban	2.6	2.2
Occupation		
Professional and Technical	2.1	1.5
Administrative and Managerial	1.5	0.4
Clerical and Related	1.7	1.5
Sales workers	4.1	2.4
Social Service Workers	1.7	1.6
Agricultural and Related	3.0	2.3
Production and Transport	2.9	2.1

* All 1990 FFS urban female population of Ethiopia is used
   as standard.

Fertility differentials by ethnic groups for women residing in urban areas have been also examined. The study indicated that Amara, Oromo, and Gurage are the major ethnic groups residing in the urban areas of the country covered in the survey. The mean parities of the Amara, Oromo and Gurage women are presented in Table 5.11. The standardized mean parity shows the highest fertility for the Gurage women (3.2) followed by Oromo women(2.7) and the lowest fertility has been shown for the Amara women (2.4).

5.6.4 Religion and Fertility

Differences between religious groups in norms and beliefs regarding procreation may have influence on fertility. To examine the fertility differentials with regard to religion we have categorized respondents into different religious groups namely, Muslims, followers of Traditional Religion, Orthodox Christians, Protestants, Catholics, and all Christians together and the data are presented in Table 5.10.

Examination of reported mean parity for the total country indicated higher fertility for followers of Traditional Religion (4.1) followed by Muslims (3.8). Orthodox Christians are found to have slightly higher fertility than Protestants and Catholics . The Orthodox Christians have a mean parity of 3.4, while the Protestants and the Catholics exhibit a mean parity of 3.3 and 3.0 respectively. Standardizing over age differences, however, narrows the range of fertility and has brought about changes in the

relative position of the fertility level among the different religious groups. According to the standardized mean parity given in Table 5.10 the mean parity of Protestant women increased to a level of 3.8 children which is almost about the same with Muslim women who reported the highest fertility next to women who are followers of Traditional Religion, but the Catholics with a mean parity of 3.4 remain to have the lowest fertility.

In comparison to the above finding examination of fertility differentials by religion for woman residing in urban areas revealed a remarkable reduction in fertility for all religious groups in general with marked difference for Protestants in particular. In urban areas the standardized mean parity for Protestant women was found to be at equal level with all christians and with Orthodox Christian women, next to Muslim women in fertility rank. The lowest fertility was recorded for Catholic women (see Table 5.11).

5.6.5 Education and Fertility

Education has been found to be an important socio-cultural factor in determining the level of fertility. It tends to influence fertility by increasing the age at marriage and by changing the attitude of a person to ignore traditions favoring large family size. For purposes of comparison respondents are classified into five educational categories according to the grade attained at each level. These categories are illiterates, non-

formal, primary (1-6 years), junior secondary (7-8 years) and senior secondary and above (9 or more years of schooling) educational levels. Examination of fertility by level of education based on reported and standardized mean parity shows that fertility is negatively associated with level of education. That is, highest fertility was observed for illiterate women followed by women with only non-formal education, primary, junior secondary and lastly by women with senior secondary education and above. The reported mean parity ranges from 3.9 to 0.9 for illiterate women and for women with senior secondary education and above, respectively.

5.6.6 Work Status and Fertility

Information on work status was collected by asking the women whether they had been engaged in any productive work other than house work. For the analysis, therefore, the respondents were classified into two, that is working and not-working women.

Examination of the data given in Table 5.10 indicate that the reported mean parity of working women was slightly higher than the parity of non-working women. But, after controlling for age the mean parity of both categories of the variable was almost equal. This is contrary to ones expectation, because, the non-working women who are more likely to be housewives and less educated compared to working women are supposed to have higher fertility. One explanation may be that working women could be relatively older

compared to non-working women.

5.6.7 Occupation and Fertility

There is variation in fertility performance of women by type of occupation. Information on occupational status was derived from working women. In order to investigate differences in fertility, the women were classified into seven categories, namely, professional and technical; administrative and managerial; clerical and related; sales; social service; agriculture and related; production and transport. The reported and standardized mean parities of these categories are given in Table 5.10.

According to a number of empirical findings in the literature occupation of women had no consistent effect on fertility. However, most of the studies indicated that modern-sector occupation often associated with low fertility than traditional occupation[1].

The data in the table revealed sales workers as the most fertile group having reported mean parity of 3.9 children, followed by agriculture (3.8 children), administrative and managerial (3.6 children), production and transport (3.4 children), professional and technical (2.1 children), clerical and related (1.8 children) and lastly social service (1.6 children).

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1 United Nation, "Fertility Behaviour in the Context of Development", Population Studies No. 100, New York, 1987, p. 271.

After age was controlled the differential between the most fertile occupational groups was reduced but still a significant differences in children ever born was maintained between them. Agricultural workers showed the highest standardized mean parity (3.7 children), followed by sales (3.5 children), production and transport (3.2 children) and social service (2.3 children) workers. The professional and technical as well as clerical and related occupations have a mean parity of 2.0 children each and the lowest being for the administrative and managerial group (1.5 children).

Similarly the data shown in Table 5.11 for urban areas recorded the highest fertility for sales workers (2.4 children) while the lowest was for administrative and managerial (0.4 children). Therefore, except for sales workers which showed highest fertility than agricultural and production workers, otherwise the finding is consistent with ones expectation.

5.6.8 Place of Residence During Childhood and Fertility

In this study place of residence during childhood is defined as the reported place where the woman was raised until the age of 12 and classified into non-migrants and all migrants. Further, all migrants were classified by childhood place of residence namely, rural areas, small urban areas, and large urban area. An analysis employing this variable proceeds on the assumption that the degree of exposure to modernization elements vary according to whether the place is a village or a city.

Table 5.10 also provides data on reported and standardized mean-parity by type of childhood place of residence. In general, the fertility of all migrants was higher than the fertility of non-migrants. Among the migrants themselves reported mean parity of 4.2, 2.9 and 2.5 was shown for those originating from rural areas, small urban and large urban areas, respectively. After standardization the order of fertility level between categories remained the same, though the mean parity of women who grew up in the rural environment reduced by twelve percent while that of the other categories showed marginal increase.

Furthermore, based on the data presented in Table 5.11 the fertility of women currently living in urban areas was classified by place of residence during childhood. The data in the table show higher fertility for migrant than non-migrant women. Moreover, the fertility level of migrant women was about equal irrespective of childhood place of residence.

CHAPTER VI

BREASTFEEDING PRACTICES

6.1 Introduction

The interest in studying breast-feeding practices largely arises from two important considerations - one, its effects on health and survival of children and the other, its suppressant effect on fertility. Breast milk is safe and it provides protection against certain illnesses and contains all essential nutrients for the growth of babies. Breast-milk is easily digestible compared with the milk of other mammals. Therefore breast milk, by providing important immunities from infectious diseases and by meeting essential nutrient requirements, protects the life of a baby well through the first few months of life. Breast-feeding is also an important determinant of fertility. It has a depressant effect on fertility. Breast-feeding by inhibiting ovulation delays in the biological capacity to conceive and thereby produces a negative effect on fertility.

Data on breast-feeding and post-partum amenorrhoea were collected in the FFS for all ultimate and penultimate children. In this chapter we briefly examine some of these important data, particularly the extent and duration of breast-feeding and amenorrhoea.

6.2 Extent of Breastfeeding

The extent of breastfeeding among women population is determined in two different ways: i) by asking the ever-married women whether they breastfed their last child and ii) by finding the current status of breastfeeding i.e., the proportion of last live births who are still breastfeeding. These were also examined by selected background variables. The data are presented in Table 6.1 and 6.2.

Table 6.1 presents data on the percentage of ever-married women who had breastfed their last child by current age and selected background variables. Data in Table 6.1 clearly indicate that the breastfeeding is a universal practice in Ethiopia. About 97 percent of ever-married women had breastfed their last child. The data show some variations in the proportion who had breastfed their last child by background variables. This is found to be higher among rural than among urban women, higher among illiterate women than among women with some formal education, higher among women of early adult ages (20-29) than among women of youngest (<20 years) and highest (40-49 years) age-groups. However, these differences are very small to warrant any conclusion. There shows no difference in the proportion of women who had breast-fed their last child by work status of mother.

Table 6.1 Percentage of Ever-married Women Who Had Breastfed
Their Last Child, by Current Age and Selected
Background Variables, 1990 FFS

Background variables	Current age of women					Total
	<20	20-24	25-29	30-39	40-49	
Type of Residence						
Rural	94.2	97.9	98.7	97.5	95.0	97.1
Urban	95.0	96.3	95.3	95.1	94.7	95.2
Addis Ababa	100.0	98.7	92.8	94.1	93.3	94.1
Other Urban Areas	94.0	95.3	96.6	95.7	95.7	95.8
Education						
Illiterate	93.9	97.9	98.5	97.4	95.0	97.0
Primary	96.0	97.9	98.2	93.7	94.0	96.2
J.Secondary & above	92.9	94.1	94.8	93.7	88.8	93.9
Work Status						
Not-Working	97.3	97.3	98.3	97.5	96.3	97.4
Working	92.6	98.1	98.4	97.0	94.2	96.6
Total	94.3	97.7	98.3	97.2	95.0	96.9

The proportion of ever-married women who never breastfed their last child is only three percent which is negligible. These women were asked the reason why they never breastfed their last child and the data is presented in Table 6.2. The data showed that a large majority (64%) of women reported that the "child died". About 12 percent of women cited insufficient or no milk, six percent indicated the child refused and 3.5 percent said that the child was sick. Only small proportion of women cited inconvenience (1.7%) and had to work (1.1%) as reason for never breastfeeding their last child.

Data on reasons for having never breastfed the last child was examined by place of residence. The proportion of women who cited "child died" as a reason for never breastfeeding was 67.4 percent in rural areas, 56.4 percent in other urban areas and 34.0 percent in Addis Ababa. This indicates the gravity and magnitude of infant mortality particularly in the rural and other urban areas. Insufficient milk/no milk in the woman's breast account for 27 percent in Addis Ababa. 17 percent in other urban areas and only less than 10 percent in rural areas. In Addis Ababa, the data revealed inconvenience to breastfeed and had to work and could not breastfeed accounted for about 14 percent. In rural areas and in other urban areas proportion of respondents who cited these two reasons are quite negligible.

Table 6.2   Percentage of Ever Married Women Who Never Breastfed
             Their Last Child by Main Reason for Having Never
             Breastfed and Place of Residence. 1990 FFS

Reason for Stopping Breastfeeding		Place of Residence				
		Rural	Urban	Addis Ababa	Other Urban Areas	Total
Inconvenient	No.	1.191	1.111	1.111	–	2.303
	%	1.1	4.7	11.4	–	1.7
Had to Work	No.	1.218	245	245	–	1.463
	%	1.1	1.0	2.5	–	1.1
Insufficient/ No. Milk	No.	10.759	4.958	2,613	2.345	15,717
	%	9.7	20.8	26.8	16.6	11.6
Child Refused	No.	6,748	1,401	628	773	8.149
	%	6.1	5.9	6.4	5.5	6.0
Child Died	No.	74,961	11,263	3,305	7,958	86,224
	%	67.4	47.2	33.9	56.4	63.8
Child Sick	No.	4,697	–	–	–	4,697
	%	4.2	–	–	–	3.5
Others	No.	10.490	4,484	1,844	2.641	14,974
	%	9.4	18.8	18.9	18.7	11.1
Not Stated	No.	1,224	382	–	382	1.606
	%	1.1	1.6	–	2.7	1.2
Total	No.	111,288	23,845	9,746	14,099	135.132
	%	100.0	100.0	100.0	100.0	100.0

That the breastfeeding is a common practice among Ethiopian women is also borne out by data in Table 6.3 which gives the proportion of ultimate births whose mothers are still breastfeeding by months since the birth. It may be observed that about 86 percent of ultimate births are still breastfed at 20 months after delivery. After that. breastfeeding diminishes, although not very drastically. About one-quarter of the births are still being breastfed at 24 months and over. The proportion of births still breastfed is higher among rural than among urban women. higher among illiterate women than among women with some formal education, higher among working than among non-working women. And these differences hold in the majority cases even when the age of the child is controlled. The proportion of births whose mothers are still breastfeeding are considerably low among urban women particularly among women of capital city, Addis Ababa, followed by women with junior secondary education and above and women of 'other urban centers'. Data clearly show inverse relationship between degree of urbanization and level of education on the one hand and the proportion of births whose mothers are still breasfeeding on the other. The proportion of births whose mothers are still breastfeeding declines from 57.8 percent among rural women to 23.3 and 35.9 percent among women of capital city, Addis Ababa and women of other small urban centers respectively. Similarly, the proportion of births whose mothers are still breastfeeding declines from 55.7 percent among illiterate women to 49.2 and 31.2 percent among women with primary and junior secondary and above education respectively. These differences are more glaring if we confine our

Table 6.3   Proportion (%) of Ultimate Births Who were Still Breastfeeding by Age of Child and Selected Background Variables, 1990 FFS

Background variables	Proportion Still Breastfeeding and Age of Child in months													Total
	<2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22-23	24 +	
Place of Residence														
Rural	91.8	88.1	90.9	91.5	88.5	88.3	83.0	91.9	80.9	86.4	87.6	75.8	29.3	57.8
Urban	92.8	83.2	80.4	77.7	78.9	60.0	68.3	83.2	77.6	70.9	68.8	67.8	11.0	31.3
Addis Ababa	96.2	79.0	67.8	94.1	75.1	64.0	55.8	78.3	60.1	59.3	57.7	42.4	6.0	23.3
Other Urban Areas	91.3	84.8	83.4	72.8	81.0	57.2	74.0	85.8	85.5	79.3	77.2	78.8	14.2	35.9
Ethiopia	91.9	87.7	90.1	90.2	87.5	85.6	82.2	91.3	80.5	84.7	85.8	75.1	26.5	54.6
Respondent's														
Education														
Illiterate	92.0	88.2	90.5	91.4	88.5	88.1	82.4	91.3	80.3	87.4	87.9	74.5	27.8	55.7
Primary	96.5	87.0	83.4	63.8	74.0	80.6	73.2	100.0	92.5	88.0	74.1	77.4	15.3	49.2
Junior Secondary and above	80.1	73.8	76.5	75.9	76.1	69.5	78.6	73.4	46.3	24.9	48.4	–	6.9	31.2
Respondents														
Work Status														
Not Currently Working	93.0	84.1	91.4	93.6	86.4	92.8	79.4	88.3	79.9	78.4	74.0	66.1	22.3	52.9
Currently Working	91.0	91.1	89.4	88.3	88.3	81.5	83.8	93.1	80.9	87.0	91.0	78.3	28.8	55.6

analysis to births who are still breastfed at 24 months and longer. The proportion of births whose mothers are still breastfeeding at 24 months and longer is as high as 29 percent among rural women. The corresponding figures were only 11.0 percent for urban women as a whole and only 6.0 percent among women of capital city, Addis Ababa. and 14 percent among women of 'other urban centers'. About 28 percent of births are still breastfed at 24 months and longer among illiterate women. The corresponding proportions were only 15 and 7 percent among women with primary and junior secondary education and above respectively. Working mothers also tend to breastfeed their babies longer than the non-working mothers.

The length of breastfeeding particularly prolonged breast feeding (i.e., for 24 months or over) is also examined for the women who breastfed their next to the last child (i.e., in the last closed birth interval) by selected socio-demographic characteristics. In this analysis women whose last child died in the first 12 months of life have been excluded to remove the effect of child death on breastfeeding practices. In other-words, women whose breastfeeding may have been terminated in the first 12 months for involuntary reasons have been omitted. The data are presented in Table 6.4. The pattern of prolonged breastfeeding in the last closed birth internal by selected background variables also resemble the pattern of breastfeeding observed for the last child. Data in Table 6.4 indicate that nearly 56 percent breastfed for 24 months or more and this proportion varies by age, level of education, place of residence and work status of respondents. The

TTable 6.4   The Percentage of Women' Who Breastfed for 24 Months or
              More in the Last Closed Birth Interval by
              Background Variables, 1990 FFS

Background Variables	Percentage
Current Age	
15-24	47.4
25-34	55.7
35-44	58.3
45-49	63.5
Total	56.1
Respondent's Education	
Illiterate	57.8
Primary	41.5
Jr. Secondary	30.9
Sr. Secondary & above	16.0
Total	
Place of Residence	
Rural	57.9
Urban	43.2
Addis Ababa	40.0
Other Urban Centers	45.1
Total	56.1
Work Status (Current)	
Not Working	51.3
Working	59.1
Total	56.6

' Confined to women with two or more live births whose last child survived at least 12 months.

proportion of women who breastfeed their penultimate children for 24 months or more increases with age. In other-words, the proportions breastfeeding for 24 months or more are lower for younger women than for older women. This finding gives an indication of declining popularity of prolonged breastfeeding among younger women. The higher educated women are also less likely to practice prolonged breastfeedig as the data show declining proportions breastfeeding for 24 months or more as the level of education of mothers increases. The proportion breastfeeding for 24 months and above declines from 58 percent among women with no education to 42, 31 and 16 percent among women with primary, junior secondary and senior secondary and above respectively.

In the survey data were collected on reasons for discontinuing breastfeeding the penultimate child and are presented in Table 6.5. Among ever married women who discontinued breastfeeding about half cited that child has reached the age of weaning and about a quarter cited that they became pregnant. Moreover, about ten percent reported discontinuing breastfeeding because the child refused and 4.3 percent indicated that there was no sufficient or no milk in the breast. The pattern of reasons cited for discontinuing breastfeeding for rural, and other urban areas is similar with that of the total population. However, the data revealed that about one quarter of the women in Addis Ababa discontinued breastfeeding because the child reached the age of weaning, 19.3 percent because the child refused the breast milk, 18 percent because the respondent became pregnant, 14 percent because there was no

sufficient/ no milk in the women's breast and about 12 percent because either the women had to work or it was inconvenient for her to breastfeed.

Table 6.5 Percentage of Ever Married Women who Ever Breasted the Penultimate Child by Main Reason for Discontinuing Breastfeeding and Place of Residence, 1990 FFS

Reason for Discontinuing Breastfeeding		Place of Residence				
		Rural	Urban	Addis Ababa	Other Uran	Total
Inconvenient	No.	54.963	20,764	10,980	9,783	75,727
	%	1.9	5.4	8.0	4.0	2.4
Had to Work	No.	15.513	7,853	4,853	3,000	23,366
	%	0.5	2.1	3.6	1.2	0.7
Insufficient/ No. Milk	No.	104.724	33,613	19,664	13,950	138,338
	%	3.7	8.8	14.4	5.7	4.3
Child Refused	No.	269.913	56,438	26,354	30,084	326,351
	%	9.5	14.7	19.3	12.2	10.2
Child Sick	No.	34,386	6,444	3,078	3,366	40,830
	%	1.2	1.7	2.3	1.4	1.3
Child had Diarrhoea	No.	10,838	714	714	–	11,552
	%	0.4	0.2	0.5	–	0.4
Child Weaned	No.	1476,381	153,981	34,589	119,392	1630,362
	%	52.2	40.2	25.3	48.5	50.8
Became Pregnant	No.	700.829	74,488	24,051	50,437	775,317
	%	248	19.5	17.2	20.5	24.1
Others	No.	96,384	21,590	9,664	11,927	117,974
	%	3.4	5.6	7.1	4.8	3.7
Not Stated	No.	65,158	6,785	2,609	4,176	71,944
	%	2.3	1.8	1.9	1.7	2.2
Total	No.	2829,090	382,671	136,556	246,115	3,211,761
	%	100.0	100.0	100.0	100.0	100.0

6.3   Length of Breastfeeding and Amenorrhoea

The estimate of duration of breastfeeding and related behaviour, based on reported retrospective data, is subject to many errors particularly mis-statement, usually reflected by heaping on preferred digits. Imprecise answers are given rounded to years or half years (for example, 12, 18, 24 months). A number of alternative methods of estimation have been devised to overcome this problem. One such alternative measure is based on the epidemiological principle in which mean duration of illness is estimated by dividing its prevalence by its incidence (prevalence/incidence). In the application of this method to breastfeeding (or amenorrhoea), prevalence is the number of children still breastfeeding at the time of survey while incidence is the average number of births per month. This ratio (prevalence/incidence) method is employed here to estimate the mean number of months of breastfeeding and amenorrhoea. In the present study, the estimate of incidence (i.e., mean number of births per month) is derived from births over last five years to minimize the effect of yearly fluctuations in births. The details are given in Table 6.6.

Data in table 6.4 show that for the whole country the mean duration of breastfeeding is 25.2 months, which is longer than in several other sub-saharan countries: Liberia (17 months), Senegal (18 months) and Uganda (19 months) However, the mean duration of breastfeeding (25 months) observed in Ethiopia closely resembles

Table 6.6 Prevalence/Incidence of Estimates of Mean Duration of
Breastfeeding of Last Live Births by Selected
Background Variables. 1990 FFS

Background Variables	No. of Births in last 5 year (weighted)	Mean No. of Births per month (weighted)	No.of Children Still breast-feeding (weighted	No.of women still amenorrheic (weighted)	Estimated mean duration of breast feeding	Estimated mean dur. of amenorrhoea
Current age of Mother						
<30	2.661.181	44.353.0	1,275.725	983,305	28.8	22.2
30+	3.260.221	54.337.0	1,215.680	910.156	22.4	16.8
Total	5.921.402	98.690.0	2,491,405	1,893,461	25.2	19.2
Education of Mother						
Illiterate	5.473,630	91,227.17	2.313,330	1,783,190	25.4	19.6
Primary	235.948	3.932.47	102,187	64.170	26.0	16.3
Jr.Secondary	55.428	923.80	18.957	12,572	20.5	13.6
Sr.Secondary above	93.840	1.564.00	28,839	16,471	18.4	10.5
Work Status of Mother						
Not Currently working	2.232,123	37,202.05	909,167	717,792	24.4	19.3
Currently working	3.677,754	61,295.90	1,576,538	1,171,862	25.7	19.1
Place of Residence						
Rural	5.376.672	89.611.2	2.320.015	1,789,412	25.9	19.9
Urban	544,730	9.078.8	171,390	104.050	18.9	11.1
Addis Ababa	171,385	2.856.4	46,697	27,438	16.4	9.6
Other Urban	373.344	6.222.4	124,693	76.612	20.0	12.3
Total	5,921.402	98.690.0	2.491.405	1.893.461	25.2	19.2

to that was estimated for Bangladesh (28.6 months) using the similar procedure (prevalence/incidence) employing 1989 Bangladesh Fertility Survey (BFS) data. The duration of breastfeeding shows variation by socio-demographic characteristics. Younger women tend to breastfeed their children relatively for longer period than higher aged women. The average duration of breastfeeding is 29 months for women under age 30 while this is 22 months for women aged 30 and over. The duration of breastfeeding shows an inverse relationship with education of mother i.e., the higher the level of education, the shorter the duration of breastfeeding. Women with no formal education breastfeed for longer duration on average (25 months) while women with senior secondary education and above have the shortest average duration of breastfeeding (18 months). The duration of breastfeeding also varies greatly by place of residence. The rural women tend to breastfeed their children for longer duration on average (20 months) than their urban counterparts (11 months) while women in capital city, Addis Ababa have the shortest average duration of breastfeeding (10 months) followed by women of smaller urban centers (12 months). There shows no variation in average duration of breastfeeding by work status of mother. The findings of shorter average duration of breastfeeding among higher educated and urban women tend to imply a trend towards a shorter duration of breastfeeding as the country advances towards modernization. This will have the adverse effect on the health of children and may lead to higher fertility, keeping other factors constant.

Table 6.6 indicates that the mean duration of post-partum amenorrhoea is 19 months for the whole country. It is longer for rural women (20 months) than for urban women (11 months) and declines as the education of mother increases. It is relatively higher among younger women (<30 years) than among higher aged women (30 years and above).

CHAPTER VII

CONTRACEPTIVE KNOWLEDGE, USE AND UNMET NEED

This chapter presents data on contraceptive knowledge, practice, intention of future use and unmet need for contraception. It examines how widespread the knowledge of contraceptive is and how widely it is being used. It also shows variation in use across different demographic and social characteristics and place of residence.

7.1 Knowledge of Contraceptives

Information about knowledge of contraceptive was collected on unprompted and prompted basis. Respondents i.e., women aged 15-49, were asked whether they have had heard of ways or methods that a couple could use to delay or avoid a pregnancy. If the response to the above question was yes, the respondents were further asked to name these methods and if they could name at least one method, they were considered to have unprompted knowledge of family planning. However, those who reported they had not heard of any family planning method, were given the names and descriptions of a series of family planning methods and were asked to identify the method(s). After the probing, if the respondent recognized a method, she was considered to have prompted knowledge of family planning. Those who could not recognize any method, even after probing, were considered to have had no knowledge of family planning.

7.1.1. Overall Knowledge of Contraception

Table 7.1 presents socio-economic and demographic characteristics of the respondents who have heard of at least a method of family planning. The data in the table show reasonably a good knowledge on the part of respondents with respect to family planning method. Over three-fifth of respondents reported to have had heard at least a method of family planning. The data in the table further show a curvilinear relationship between age of women and the knowledge of a family planning method, indicating that relatively fewer women at the youngest (< 20 years) and higher age-groups (40-49 years) know about a contraception method while more women at the young adult (20-29 years) and middle ages (30-39 years) tend to know a method. In general, the knowledge of a family planning methods tends to increase with age upto ages 20-29 years then it gradually declines and reaches its lowest at the highest ages. The finding of relatively poor knowledge of fertility regulating methods among the youngest and oldest women may be attributed to the following: adolescent women (< 20 years) have not yet achieved their desired family size and therefore are not interested in fertility regulating method. The older women, on the other hand, may be more traditional in their outlook and some of them may also consider themselves unable to reproduce any more because of old age which may have a negative bearing on their level of knowledge of contraceptive methods.

Table 7.1 Percent (weighted) Distribution of Women, 15-49 Years of Age, Knowing At Least One Method of Contraception by Background Variables, 1990 FFS.

Background Variables	Number (Weighted)	Percent Knowing at Least one Method of Contraception
All Women	5,954,837	62.7
Age		
< 20	1,237,721	59.3
20-24	978,136	67.7
25-29	979,622	67.7
30-34	989,693	64.4
35-39	814,243	63.0
40-44	548,882	53.7
45-49	406,540	56.3
Respondent's Education		
Illiterate	5,058,592	57.5
Primary (1-6 grade)	374,193	87.7
Junior Secondary (7-8 grade)	190,505	92.7
Senior Secondary (9-12 grade)	254,581	98.7
University/higher	16,966	100.0
Other (non-formal)	58,859	87.9
Husband's Education		
Illiterate	3,435,120	56.9
Primary	615,354	81.6
Junior Secondary (7-8 grade)	157,238	83.0
Senior Secondary (9-12 grade)	189,695	93.2
University/higher	37,142	100.0
Other (non-formal)	471,727	63.2
Religion		
Christian	3,947,476	65.4
Muslim	1,642,407	57.3
Others	363,401	57.1
Work Status of the Respondent		
Not Currently Working	2,430,045	63.3
Working	3,524,792	62.2

(Table 7.1 Contd.)

Background Variables	Number (Weighted)	Percent Knowing at Least one Method of Contraception
Respondent's Occupation		
Professional/Technical	27,130	96.9
Administrative/Managerial	3,974	100.0
Clerical & Related	33,543	100.0
Sales Worker	689,194	68.6
Social Service	112,857	86.9
Agricultural & Related	2,483,749	58.3
Production, Transport	164,052	63.8
Husband's Occupation		
Professional/Technical	80,148	92.0
Administrative/Managerial	21,699	100.0
Clerical & Related	39,095	96.9
Sales Worker	140,082	86.6
Social Service	157,546	85.9
Agricultural & Related	405,521	58.8
Production, Transport	284,767	87.6
Number of Living Children		
0	1,502,643	59.4
1-2	1,555,527	66.2
3-4	1,457,296	60.8
5+	1,439,372	64.1
Residence		
Rural	5,049,504	57.1
Urban	905,334	93.6
Addis Ababa	360,665	98.1
Other Urban Areas	544,669	90.6

As expected, education is positively associated with level of knowledge of contraceptive method (see Table 7.1). The higher the level of education of the respondent, the higher is her knowledge of contraception. For example, the knowledge of contraception

increases from 57.5 percent among illiterate women to 87.7, 92.7, 98.7 and 100 percent among women with primary, junior secondary, higher secondary and university/higher level education. A similar positive relationship is discerned between husband's education and wife's knowledge of contraception. However, it should be noted here that the knowledge of contraception at each level of education is higher for women's than men's education, indicating perhaps that given the same dose of education women's education has greater bearing on the knowledge of contraception than men's education.

Data in Table 7.1 show that Christian women in reproductive ages (15-19 years) are relatively more knowledgeable on contraceptive methods than their Muslim counterparts or women of other religious denominations. Sixty-five percent of Christian women reported to have had heard of a family planning method as against 57 percent of Muslims women and women of 'other' religious denominations.

Work status of woman doesn't show any independent effect on her knowledge of contraceptive method. As revealed by data in Table 7.1 Sixty-three percent of currently not-working women as against 62 percent of currently working women in the reproductive ages reported to have had knowledge of a contraceptive method.

In general, women engaged in non-agricultural occupations particularly those in white collar occupations (Professional /Technical, Administrative/Managerial, Clerical) tend to report

higher knowledge of contraception than those who are engaged in blue collar and agricultural occupations, particularly the latter. A similar finding is noted with respect to husband's occupation in that women's whose husbands are engaged in non-agricultural occupations particularly white collar occupations tend to report higher knowledge of contraception than those whose husbands are engaged in blue collar and agricultural occupations particularly the latter. The finding of women working in the non-agricultural sector particularly in white collar occupations reporting higher knowledge of contraception than those engaged in non-agriculture sector is in conformity with one's expectation in view of the fact that the former is more educated and exposed to the outside world than the latter.

Women of higher parity, in general, tend to report higher knowledge of contraception than women who have had no children. This is also expected in view of the fact that the latter have not yet achieved their desired family size and therefore are not interested in fertility regulation methods. While women of higher parity have achieved or close to achieving their desired family size and therefore are more likely to accept ideas of fertility regulations. The data in Table 7.1 also show that the knowledge of contraception is higher among urban women particularly women of capital city, Addis Ababa than among women of rural areas. This is also consistent with one's expectation because women of urban areas in general, and Addis Ababa in particular, are more likely to be formally educated and widely exposed to mass media communications

than their rural counterparts. Ninety-four percent of urban women as against only 57 percent of rural women reported to know a method of family planning while these proportions in Addis Ababa and 'other urban areas' are 98 and 91 percent respectively.

7.1.2. Knowledge of Specific Family Planning Methods

Data on knowledge of specific method of family planning by place of residence of respondents are presented in Table 7.2. The following salient findings may be noted from data in Table 7.2:

i)   Pill is reported to be the most known method among women in the reproductive ages (15-49 years) and this holds even when the place of residence is controlled. Fifty-six percent of the total respondents reported to have known pill. The corresponding proportions in rural and urban areas were 50.0 and 92 percent respectively. The second most known method among respondents varies by place of residence. This turns out to be **sexual abstinence** among rural respondents while for women of Addis Ababa and 'other urban centers' this constitutes **female sterilization** and **injection** respectively. Twenty-four percent of rural women reported to have known sexual abstinence while 80 percent of Addis Ababa women and 53 percent of women of 'other urban centers' reported to have known female sterilization and injection respectively. Injection is the third and female sterilization is the fourth known method of contraception in rural areas. Injection is reported to be known by 23 percent of rural women while about

16 percent of them know about female sterilization. For Addis Ababa women the third known method is condom followed by IUD and __injection__. Condom, IUD and Injection are known to 72.7, 72.6 and 66.8 percent of Addis Ababa women respectively. The third known method among women of 'other urban centers' is

Table 7.2 Percentage of Women, 15-49 Years of Age, Knowing Specific Method of Contraception (Modern and Traditional) by Type of Residence, 1990 FFS.

Method by Type	Percent who are aware of method by type of residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
All women	(5,049,504)	(905,334)	(360,665)	(544,669)	(5,954,837)
a. Modern					
Pill	50.0	91.7	97.2	88.1	56.3
IUD	6.3	56.0	72.6	45.0	13.8
INJECTION	23.1	58.5	66.8	53.0	28.4
Vaginal methods (diaphragm/foam/Jelly)	1.6	22.1	30.1	16.8	4.7
Condom	4.6	52.5	72.7	39.1	11.9
Female Sterilization	15.7	61.0	79.7	48.6	22.6
Male Sterilization	1.7	12.9	15.7	11.1	3.4
b. Traditional					
Periodic Abstinence (Safe Period)	7.4	52.8	71.8	40.2	14.4
Sexual Abstinence	23.9	55.5	66.7	48.0	28.7
Withdrawal	2.1	30.0	45.5	19.7	6.4
Douche	1.7	18.2	27.7	11.8	4.2
Traditional*	2.2	12.2	21.0	6.4	3.8
Others	0.2	0.6	0.2	0.9	0.3

* Traditional herbs or medicine

Note: Figure in parenthesis refers to number of cases.
Percentages added may exceed 100 because of multiple responses.

female sterilization while sexual abstinence constitutes the fourth known method. About 49 percent of women of other urban areas' reported to have known female sterilization while forty-five percent of them know of sexual abstinence;

ii) respondents are more familiar with modern methods than traditional methods and this holds for every place of residence. One-third of respondents know of traditional methods;

iii) knowledge of specific method of contraception is higher among urban women particularly among women of capital city, Addis Ababa than among rural women. In other-words, proportionately more urban women, particularly women of Addis Ababa report knowledge of specific methods of contraception .compared to rural women. This is expected in view of the fact that urban women in general, and women of Addis Ababa in particular, are better educated compared to rural women and the former are exposed to wide range of communication media than the latter and also contraceptive services are more available in urban areas particularly in the capital city than in rural areas.

Table 7.3 presents data on the knowledge of specific method of contraception by age of respondents. Data show, in general, a curvilinear relationship between age and knowledge of specific method of contraception. Knowledge of a specific method, in general, is high at the young adult ages (20-29 years) and

relatively low at the youngest (15-19 years) and older ages (40-49 years). And this pattern of relationship holds for almost all methods of contraception under review. However, variation in knowledge by age is less apparent for the methods of male sterilization, douche and traditional medicine/herbs.

Table 7.3   Percent (Weighted) Distribution of Women, Aged 15-49 Years, by Age and Knowledge of Specific Family Planning Method, FFS 1990.

Methods	Age Group						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
All women	(1,237,721)	(978,136)	(979,622)	(989,693)	(814,243)	(548,882)	(406,540)
Pill	53.8	62.0	60.5	58.3	55.6	47.0	49.6
IUD	13.0	14.7	16.8	14.2	13.9	10.2	10.8
Injection	24.5	31.8	34.2	29.3	28.8	23.1	23.1
Vaginal Methods	3.2	5.1	6.7	5.2	5.1	3.8	3.2
Condom	14.3	13.9	14.1	10.7	10.1	7.2	7.3
Female Sterilization	21.9	24.7	24.6	22.3	23.2	17.6	20.7
Male Sterilization	3.3	3.8	3.7	3.9	3.4	2.1	2.3
Periodic Abstinence (Rhythm)	16.7	17.2	17.9	13.2	11.7	8.4	8.8
Sexual Abstinence	23.4	32.3	34.4	29.1	29.2	24.0	27.0
Withdrawal	7.2	7.9	8.7	5.7	5.5	3.0	2.7
Douche	3.4	4.9	6.1	4.5	4.1	2.8	2.2
Traditional herbs or medicine	3.8	5.1	4.3	3.1	4.0	2.1	2.5
Others	0.2	0.3	0.4	0.5	0.1	0.2	0.4

Note: Figure in parenthesis refers to number of cases.
Percentages added may exceed 100 because of multiple responses.

The data on specific knowledge of method of contraception by number of living children are presented in Table 7.4. It may be observed from data in the table that the knowledge of specific method of contraception is usually higher for women with no living children than those having one or more living children. And this pattern of relationship holds for almost all methods of contraception except for pill, injection and sexual abstinence. For these methods, the knowledge is relatively higher for women having one or more living children than those who have had no living children.

Table 7.4 Percent (Weighted) Distribution of Women, 15-49 years of Age, by Number of Living Children and Knowledge of Specific Family Planning Method, 1990 FFS.

| Method | Number of Living Children | | | |
	0	1-2	3-4	5+
All women	(1,502,642)	(1,555,528)	(1,457,296)	(1,439,372)
Pill	54.6	58.1	54.7	57.9
IUD	16.5	14.2	11.5	13.0
Injection	27.7	28.9	29.0	28.3
Vaginal Methods	5.0	4.8	4.9	4.3
Condom	17.2	11.8	9.3	9.1
Female Sterilization	23.8	23.4	20.8	22.1
Male Sterilization	4.4	3.1	3.1	2.8
Periodic Abstinence	19.8	15.9	11.7	10.5
Sexual Abstinence	25.4	31.7	28.0	29.8
Withdrawal	9.3	6.8	4.9	4.4
Douche	4.9	4.9	3.9	3.1
Traditional herb/ medicine	4.8	4.2	3.0	3.0
Others	0.2	0.4	0.3	0.3

Note: The figure in parenthesis refers to number of cases. Percentages added may exceed 100 because of multiple responses.

7.2   Ever Use of Contraception

Respondents who said that they had heard of a particular method of family planning were further asked whether they or their husbands had ever used this particular method of contraception. Their responses to this question were analysed and discussed in this section of the chapter.

The percent distribution of women in the reproductive ages who have ever used of contraception by background variables are presented in Table 7.5.   As indicated by Table 7.5 only about 8 percent of women in the reproductive ages (15-49 years) reported to have ever-used a contraceptive method.

The relationship between age and ever use of contraception assumes a curvilinear form in which the ever use is relatively lower in the youngest (15-19 years) and highest age-group (45-49 years) while this is higher at the age-groups in between.   The ever use of contraception reaches its highest in age-group 25-29 years followed by age-group 30-34 years. Eleven percent of women in the age-group 25-29 and 10 percent of women in the age-group 30-34 reported to have ever used a method of contraception.

There shows a strong positive relationship between respondent's education and ever use of contraception.   Only about 5 percent of illiterate women reported to have ever used a method of family planning and this figure rises to over 20 percent among

women with primary and lower secondary education; 30 and 64 percent among women with senior secondary and university/higher level education. It is to be also noted here that women who are literate but have had no formal education reported higher ever use of contraception than those who are illiterate. About 5 percent of illiterate women as against 9 percent of literate women with no formal education reported to have ever used a method of contraception. A similar, although slightly weak, positive relationship is discerned between ever use of contraception and husband's education. The rate of ever use of contraception rises from mere 4 percent among women whose husbands are illiterate to 14, 26, 45 and 76 percent among women whose husbands are with primary, junior secondary, senior secondary and university/higher level education respectively.

Christian women tend to report relatively higher ever use of contraception than Muslim women and women of other religion denominations. Nine percent of Christian women reported to have ever used a method of family planning. The corresponding rates among Muslim women and women of other religious denominations were 4 percent each.

Data in Table 7.5 show no noticeable difference in ever use of contraception by work status of respondents. About 8 percent of non-working women reported to have ever used contraception as against only 7 percent of working women. This finding is contrary

Table 7.5 Percent (Weighted) of Women Aged 15-49 Years Reporting
Ever Use of a Method of Contraception by Selected
Variables, 1990 FFS.

Background Variables	Number (Weighted)	Percent Who Ever Used a Method of Contraception
All women	5,954,837	7.5
Age		
< 20	1,237,721	2.7
20-24	978,136	7.5
25-29	979,622	11.3
30-34	989,693	9.9
35-39	814,243	8.8
40-44	548,882	7.4
45-49	406,540	5.3
Respondent's Education		
Illiterate	5,058,592	4.6
Primary (1-6 grade)	374,193	21.5
Junior Secondary (7-8 grade)	190,505	20.9
Senior Secondary (9-12 grade)	254,581	30.3
University/higher	16,966	64.4
Other (non-formal)	58,859	8.7
Husband's Education		
Illiterate	3,435,120	4.2
Primary (1-6 grade)	615,354	13.8
Junior Secondary (7-8 grade)	157,238	26,0
Senior Secondary (9-12 grade)	189,695	44.9
University/higher	37,142	75.9
Other (non-formal)	471,727	6.2
Religion		
Christian	3,947,476	9.3
Muslim	1,642,407	4.2
Others	363,401	4.4
Work Status of Respondent		
Not Currently Working	2,430,045	7.9
Working	3,524,792	7.3

Table 7.5   (Contd.)

Background Variables	Number (Weighted)	Percent Who Ever Used a Method of Contraception
Respondent's Occupation		
Professional/Technical	27,130	67.5
Administrative/Managerial	3,974	51.6
Clerical & Related	33,543	60.2
Sales Workers	689,194	10.4
Social Service	112,857	22.7
Agricultural & Related	2,483,749	3.6
Production, Transport	164,052	16.5
Husband's Occupation		
Professional/Technical	80,148	45.9
Administrative/Managerial	21,699	68.9
Clerical & Related	39,095	47.1
Sales Worker	140,082	18.9
Social Service	157,546	27.2
Agricultural & Related	405,521	4.2
Production, Transport	284,767	30.7
Number of Living Children		
0	1,502,643	2.5
1-2	1,555,527	9.5
3-4	1,457,296	8.6
5+	1,439,372	9.5
Residence		
Rural	5,049,504	4.2
Urban	905,334	26.2
Addis Ababa	360,665	30.2
Other Urban Areas	544,669	23.6
Marital Status		
Never married	1,047,246	3.3
Currently married	4,262,483	7.7
Widowed	211,550	9.3
Divorced/Separated	421,203	14.5
Not Stated	12,355	–

Table 7.5 (Contd.)

Background Variables	Number (Weighted)	Percent Who Ever Used a Method of Contraception
Ethnicitv		
Amara	1,508,020	14.2
Oromo	2,320,121	5.2
Tigre	72,593	24.6
Kembata	179,368	3.1
Welayta	202,432	4.3
Sidama	300,943	7.1
Gurage	424,471	5.9
Others	946,889	-

to one's expectation. One would expect to find higher ever use of contraception among working than non-working women.

Women engaged in non-agricultural sector, particularly in white collar occupations, (Professional, Administrative and Clerical) in general, tend to report higher ever use of contraception than those in blue collar occupations and agricultural sector, particularly the latter. The rate of ever use of contraception is reported to be highest among those engaged in Professional/Technical works followed by Clerical (60.0%) and Administrative/Managerial works (51.60%). Only 4 percent of women engaged in agricultural and related occupations reported to have ever used a method of family planning.

The relationship that was observed between respondent's occupation and ever use of contraception was also observed for

husband's occupation and that of his wife's ever use of contraception. Here also one finds the rate of ever use of contraception is higher among husband's engaged in non-agricultural occupations, particularly white collar occupations (Professional, Administrative and Clerical) than those engaged in blue collar occupations and the agricultural sector particularly the latter. The ever use of contraception is highest among Administrative/Managerial workers (68.9%) followed by those engaged in Clerical (47.1%) and Professional/Technical works (45.9%). The rate of ever use is lowest (4.2%) among those women whose husbands are engaged in agricultural and related works.

The ever use of contraception is higher among women having one or more living children than those who have had no living children. About 3 percent of women who have had no living children reported to have ever used a method of family planning compared to 9 percent or over among women having one or more living children.

Like the knowledge of family planning, the ever use is also higher among women living in urban areas than among women living in rural areas. The rate of ever use of contraception among urban women exceeds that of the rate among rural women by at least six times. Comparing the rate of use between urban areas, this is found to be highest, as expected, in Addis Ababa compared to other urban areas. The rate of ever use of contraception is reported to be 4.2, 26.2, 30.2 and 23.6 for rural, urban, Addis Ababa and other urban areas respectively.

Examining the data on ever use of contraception by marital status shows that this is highest among divorced/separated (14.5%) women followed by widowed (9.3%) and currently married (7.7%) women. The ever use of contraception is reported to be the lowest (3.3%) among the never married women.

The distribution of ever use of. contraception by ethnic group shows that this is highest among the Tigres (24.6%) followed by Amaras (14.2%), Sidamas (7.1%) and Gurages (5.9), while this was lowest among Kambata (3.1%) followed by Welaytas (4.3%). Some of these differences in ever use of contraception between ethnic groups can be attributed to differences in socio-economic status such as education.

7.2.1. Ever Use of Contraception by Specific Method

Data on ever use of contraception by specific method and place of residence are presented in Table 7.6.

As indicated by the table, pill is reported to be the most popular method ever tried by women particularly urban women of both Addis Ababa and other urban centers. Eighteen percent of urban women reported to have ever tried Pill. This proportion is about 20 percent and 17 percent among women of Addis Ababa and other urban centers respectively. The second most frequently mentioned ever tried method was 'safe period' (periodic abstinence). This

Table 7.6 Percentage (Weighted) of Women Aged 15-49 Years Who Have
Ever Used Specific Family Planning Methods by Place of
Residence, 1990 FFS.

| | Place of Residence | | | | |
Method by Type	Rural	Urban	Addis Ababa	Other Urban Areas	Total
All women	(5,049,504)	(905,334)	(360,665)	(544,669)	(5,954,837)
a. Modern					
Pill	1.7	18.3	19.9	17.3	4.2
IUD	0.1	2.9	4.7	1.6	1.0
Injection	0.1	0.5	0.7	0.3	0.2
Vaginal methods	-	0.2	0.3	0.1	0.1
Condom	0.1	1.4	2.1	1.0	0.3
Female sterilization	0.2	0.7	0.9	0.5	0.2
Male sterilization	0.0	0.1	0.3	0.1	0.0
b. Traditional					
Periodic abstinence	0.5	6.7	10.2	4.3	1.5
Sexual abstinence	2.2	3.7	3.5	3.8	2.4
Withdrawal	0.3	1.5	2.5	0.9	0.5
Douche	0.1	0.6	0.8	0.5	0.2
Traditional herb or medicine	0.1	0.3	0.5	0.2	0.1
Others	0.1	-	-	-	0.0

Note: The figure in parenthesis refers to number of cases.

was reported to be ever tried by 10 percent of Addis Ababa women
and four percent of women of 'other urban areas'. Two percent of
all women reported to have ever used ' periodic abstinence'. The
third popular method mentioned, in terms of ever use, was 'sexual
abstinence' in 'other urban areas' and IUD in Addis Ababa. Nearly

four percent of women of 'other-urban areas.' and 5 percent of women of Addis Ababa reported to have ever used 'sexual abstinence' and IUD respectively. Nearly four percent of rural women and two percent of urban women reported to have ever used 'sexual abstinence'. Popularity of a method, in terms of ever use, is not evaluated in rural areas in view of the fact that no method was mentioned to be ever-tried by over half a percent of rural women except for 'sexual abstinence' and pill. Sexual abstinence and pill were reported to be ever tried by 2.2 and 1.7 percent of rural women. The finding of good proportion of women using 'safe period' (periodic abstinence) and 'sexual abstinence' calls for a closer look at exactly how these methods are used by women in Ethiopia and what success in preventing pregnancy can be attributed to these methods.

Tables 7.7 and 7.8 present data on ever use of specific contraceptive method by age and number of living children respectively. As shown by the tables that no method other than Pill, IUD, Periodic and Sexual Abstinence are ever used by over 1.0 percent of women. Confining the analysis only to the above methods, we find that ever use of pill is mostly concentrated among women of middle ages (30-39 years) followed by women of young (15-29 years) and higher ages (40-49 years). Five percent of middle aged (30-39 years) women reported to have ever used Pill. The corresponding proportions were 4 and 3 percent among younger (15-29 years) and higher aged (40-49 years) women respectively. The ever

Table 7.7 Percentage (Weighted) of Women Aged 15-49 Years Who Have Ever Used Specific Family Planning Methods by Age of the Respondent, 1990 FFS.

Method	Age-Group		
	15-29	30-39	40-49
All women	(3,195,479)	(1,803,936)	(955,422)
a. Modern			
Pill	3.9	5.4	3.1
IUD	0.3	1.0	0.6
Injection	0.2	0.2	0.3
Vaginal Methods	0.1	0.0	0.0
Condom	0.3	0.2	0.2
Female Sterilization	0.1	0.3	1.0
Male Sterilization	0.0	0.0	0.0
b. Traditional			
Periodic Abstinence	1.8	1.4	0.4
Sexual Abstinence	1.8	3.4	2.5
Withdrawal	0.5	0.5	0.2
Douche	0.2	0.1	0.2
Traditional herb or medicine	0.1	0.1	0.4
Others	0.0	0.1	0.1

Note: The figure in parenthesis refers to number of cases.

use of IUD, although reported by small number of women, is mostly concentrated among middle (30-39 years) and higher ages (40-49 years). Periodic abstinence (i.e., safe period) was mostly ever-tried by women of younger ages (15-29 years) followed by women of middle (30-39 years) ages while sexual abstinence is reported to be ever-tried mostly by middle and higher aged women followed by women of younger ages. Only about two percent of women aged 15-29 years reported to have ever used periodic abstinence as against only 1.4 percent of middle aged (30-39 years) women. Sexual abstinence was reported to be ever used by 3.4, 2.5 and 1.8 percent of women of

Table 7.8 Percentage (Weighted) of Women Aged 15-49 Years Who Have
Ever Used Specific Family Planning Methods by Number
of Living Children, FFS 1990.

Method by Type	Number of Living Children			
	0	1-2	3-4	5+
All women	(1,502,642)	(1,555,527)	(1,457,296)	(1,439,372)
a. Modern				
Pill	1.2	5.4	4.9	5.3
IUD	0.0	0.5	0.6	1.1
Injection	0.0	0.1	0.4	0.3
Vaginal Metho	0.0	0.1	0.0	0.0
Condom	0.2	0.5	0.2	0.2
Female Sterilization	0.0	0.1	0.3	0.5
Male Sterilizatio	0.0	0.0	0.1	0.0
b. Traditional				
Periodic Abstinence	1.2	2.1	1.5	1.0
Sexual Abstinence	0.2	3.1	2.8	3.5
Withdrawal	0.3	1.0	1.0	0.4
Douche	0.0	0.2	0.2	0.1
Traditional herb or medicine	0.0	0.2	0.1	0.2
Others	0.0	0.1	0.0	0.1

Note: The figure in parenthesis refers to number of cases.

middle (30-39 years), higher (40-49 years) and younger ages (15-29 years) respectively.

Analysis of data on ever use of specific method of contraceptive by number of living children shows that the ever use of a method, in general, is higher for women having one or more living children than those who have had no living children. And this pattern of relationship holds for almost every method. The

pattern of relationships between number of living children and the most popular (in terms of ever use) methods are as follows: The proportion of women reporting ever use of pill is about 5 percent for women having one or more living children. The proportion of women reporting ever use of IUD tends to rise with age while ever use of periodic abstinence is reported to be highest by women with 1-2 living children followed by those with 3-4 living children. Sexual abstinence is reported to be tried highest by women with 5 or more number of living children followed by those with 1-2 and 3-4 children respectively.

7.3   Current Use of Contraception

One of the purposes of the present survey was to ascertain the level of use of contraception among women in the reproductive ages (15-49 years). In this survey, women who said that they had heard of a particular method of family planning were further asked whether they were using a contraceptive method during the time of the survey. The answer to this question formed the basis of analysis of this section of the chapter i.e., current use of contraception. The analysis is confined to women exposed to risk of pregnancy i.e., those who are currently married and non-pregnant. There were 5048 such women[*]. However, the actual analysis will be based on a number fewer than these cases because

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[*]   The corresponding number of women in Addis Ababa, other urban and rural areas were 587; 573 and 3,888 respectively.

of non-response to one or more questions used in this study.

As indicated by Table 7.9 about 5 percent of currently married and non-pregnant women aged 15-49 \ reported that they were currently using a contraceptive method. This proportion reduces to 4.3 and 3.9 if the analysis is confined to ever-married and all women aged 15-49 years respectively.

Table 7.9 Number and Percentage (Weighted) of All Women, Currently Married and Ever Married Women Aged 15-49 by Current Use, Ever Use and Knowledge of Contraceptive Methods

	Current Use	Ever Use	Have Knowledge	Number (Weighted)
All women (15-49 years)	3.9	7.5	62.7	5,954,838
Currently married and non-pregnant women	4.8	—	—	3,708,396
Ever married women	4.3	—	—	4,907,592

The overall use of contraception in Ethiopia is found to be lower compared with other African countries (See Table 7.10). This low prevalence rate of contraceptive in Ethiopia may be attributed to the recency of the introduction of family planning in the country, among other factors. Although some limited family planning services were provided by the Family Guidance Association of Ethiopia in urban areas, there was very limited family planning activities on the part of the Ethiopian government until very recently. It was only in 1980 that the government had introduced

Table 7.10 Percentage of Current Contraceptive Use in Selected Countries (analysis is restricted to all women aged 15-49 years)

Country	Year	Current Use %
Ethiopia	1990	3.9
Ghana	1988	12.3
Kenya	1989	23.2
Liberia	1986	8.4
Uganda	1988/89	5.5
Zimbabwe	1988	32.2

Source:- UNECA, Statistical Compendium of Contraceptive Prevalence in African Countries, Addis Ababa, 1990.

MCH/FP programme as a component of the National Health Care system. Therefore, the finding of very low use of contraception in the country is in conformity with one's expectation.

7.3.1. Differential Use of Contraceptives by Socio-demographic Variables

The level of current use of contraception by selected socio-demographic variables is shown in Table 7.11.

a) Age and Current Use

As can be seen from the table, current use of contraception assumes an inverted U-shaped relationship with age of the respondents (see Figure 7.1). A similar curvilinear relationship was also observed between ever use and age of respondents (see Table 7.5). This pattern of relationship indicates that the use of

Table 7.11   Percent of Currently Married Non-pregnant Women Aged
              15-49 Years Currently Using a Family Planning Method
              for Selected Variables, Ethiopia, FFS 1990

Background Variables	Number (weighted)	Percent Currently Using Contraception
For All Currently Married And Non-pregnant Women	3,708,396	4.8
Age		
(Respondent)		
15-19	305,637	2.6
20-24	607,124	4.3
25-29	714,923	6.5
30-34	751,076	6.3
35-39	621,118	5.0
40-44	406,383	3.9
45-49	302,135	1.2
Education (Respondent)		
Illiterate	3,405,992	2.7
Primary (1-6 grade)	154,702	19.1
Junior Secondary (7-8 grade)	38,698	37.8
Senior Secondary and above	72,354	56.8
Other (non-formal)	35,860	4.9
Husbands' Education		
Illiterate	2,603,101	2.1
Primary (1-6 grade)	461,245	8.2
Junior Secondary (7-8 grade)	110,756	14.1
Senior Secondary (9-12 grade)	131,428	33.7
University/higher	28,812	55.9
Other (non-formal)	372,274	2.4
Ethnic Group		
Amara	869,158	9.4
Oromo	1,463,980	3.4
Tigre	37,994	19.8
Kembata	110,235	2.4
Welayta	116,234	2.8

Table 7.11 (Contd.)

Background Variables	Number (weighted)	Percent Currently Using Contraception
Sidama	220,925	3.1
Gurage	267,901	5.6
Agew	47,494	0.0
Gedeo	87,112	2.0
Hadiya	142,299	2.4
Somali	17,344	0.0
Ari	32,867	2.5
Bencho	48,894	0.0
Keffa	48,969	5.1
Gamo	63,446	0.0
Others	127,367	2.4
Religion		
Christian-Orthodox	1,887,137	6.5
Christian-Protestant	370,296	5.1
Christian-Catholic	60,906	1.9
Christian-Other	33,858	4.4
Christian	2,352,197	6.1
Muslim	1,089,567	2.8
Others-Animist	135,535	1.9
-Atheist	8,834	0.0
Other religion	122,261	1.0
Others	266,630	1.5
Work Status		
Not currently working	1,445,506	5.7
Working	2,262,890	4.2
Occupation (Respondent)		
Professional, and Technical	14,651	70.9
Administrative & Managerial	1,246	35.4
Clerical & Related	16,355	55.2
Sales Worker	405,407	5.5
Social Service	20,630	19.7
Agricultural & Related	1,718,809	2.0
Production & Transport	79,212	18.3
Husband's Occupation		
Professional/Technical	98,356	25.5
Administrative & Managerial	18,022	43.3
Clerical & Related	25,862	29.3
Sales Worker	107,760	11.1
Social Service	111,450	15.5
Agricultural & Related	3,116,512	2.0
Production & Transport	205,019	20.9

Table 7.11 (Contd.)

Background Variables	Number (weighted)	Percent Currently Using Contraception
Number of Living Children		
0	308,327	1.1
1-2	1,103,147	4.8
3-4	1,115,069	4.8
5+	1,181,854	5.8
Place of Residence		
Rural	3,330,562	2.6
Urban	377,834	24.5
Addis Ababa	136,788	32.8
Other Urban	241,046	19.7
Total	3,708,396	4.8

contraception is relatively lower at the youngest (15-19 years) and highest (45-49 years) ages while it is higher at the middle ages (25-34 years). The proportion of women who are currently using contraception increases with age from 2.6 percent at the age-group 15-19 to 6.5 and 6.3 percent at the age-group 25-29 and 30-34 respectively and then slowly decreases to 1.2 percent at the age-group 45-49 years (see Figure 7.1). Given the knowledge that age is positively related with parity, the finding of relatively higher use of contraception among the middle aged women than among the younger women may be attributed to the fact that the former have either achieved or on the verge of achieving their desired family size while the latter is still in the early stage of their life cycle and yet to achieve their desired family size. The middle

Fig-7.1 Percentage of Currently Married
Non-pregnant Women Who Are Using Any
Contraceptive Method by Age, 1990 FFS

aged women who are close to achieving their desired family size are more likely to accept family planning method to regulate or terminate their fertility than the younger women who are yet to achieve their desired family size particularly in a society where the idea of birth spacing is yet to take its root. However, the finding of lower rate of current use of contraception among women aged 40-44 and 45-49 compared to women aged 25-29 and 30-34 years could be also due to the following factors: i) older women are likely to be more tradition oriented, therefore, more likely to be reluctant to use contraception, and ii) secondary sterility increases with age. Some elderly women may already be infecund or the may feel they are infecund and therefore, may not use contraception. However, these are empirical issues and require verification. The curvilinear relationship that was observed between current use of contraception and age of respondent also holds even when place of residence is controlled (see Table 7.12). In other-words, the current rate of contraception use is found to be consistently lower at age extremities while it is higher at the age groups in between irrespective of the place where the respondent lives - be it either in rural or Addis Ababa or other urban areas.

b) <u>Number of Living Children and Current Use of Contraception</u>

The current use of contraception shows a positive relationship with number of living children. As the size of living children increases, the level of current use also increases and reaches its

Table 7.12 Percentage (Weighted) of Currently Married Non-Pregnant
Woman Aged 15-49 Using Contraception Method by
Selected Background Variables, Controlling for
Place of Residence, FFS 1990

Selected Variables	Place of Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Age(Respondet)					
15-24	2.4	24.0	38.2	18.7	3.8
	(855,160)	(57,603)	(15,723)	(41,880)	(912,763)
25-34	3.1	31.7	40.5	26.8	6.4
	(1,299,613)	(166,386)	(59,806)	(106,580)	(1,465,999)
35-44	2.6	18.9	25.9	14.2	4.6
	(902,460)	(125,041)	(50,205)	(74,836)	(1,027,501)
45+	0.5	7.4	15.0	2.7	1.2
	(273,328)	(28,806)	(11,055)	(17,751)	(302,134)
Education (Respondent)					
Illiterate	2.0	13.3	20.0	10.7	2.7
	(3,192,105)	(213,887)	(60,082)	(153,805)	(3,405,992)
Non-formal	–	17.5	10.6	19.6	4.9
	(25,867)	(9,993)	(2,312)	(7,681)	(35,860)
Primary	9.4	29.9	37.3	24.2	19.1
	(81,219)	(73,483)	(31,969)	(41,514)	(154,702)
Junior Secondary	31.5	40.9	40.5	41.2	37.8
	(12,856)	(25,840)	(10,658)	(15,182)	(38,696)
Senior Secondary and above	64.7	54.3	51.5	58.2	56.8
	(17,722)	(54,633)	(31,769)	(22,864)	(72,355)
Husband's Education					
Illiterate	1.8	10.2	17.6	8.2	2.1
	(2,512,393)	(90,708)	(19,356)	(71,352)	(2,603,101)
Non-formal	1.5	9.3	15.0	6.8	2.4
	(330,081)	(42,193)	(12,758)	(29,435)	(372,274)
Primary	3.6	23.1	29.4	19.4	8.2
	(350,979)	(110,266)	(40,444)	(69,822)	(461,245)
Junior Secondary	7.9	27.2	24.6	28.7	14.1
	(74,938)	(35,818)	(12,779)	(23,039)	(110,756)

Table 7.12   (Contd.)

Selected Variables	Place of Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Senior Secondary	25.3 (56,672)	40.1 (74,756)	45.2 (36,839)	35.1 (37,917)	33.7 (131,428)
University/higher	42.5 (4,720)	58.6 (24,092)	53.9 (14,612)	65.8 (9,480)	55.9 (28,812)
Ethnicity					
Amhara	4.0 (684,149)	29.4 (185,010)	38.2 (70,592)	23.9 (114,418)	9.4 (869,159)
Oromo	2.4 (1,374,694)	19.7 (89,286)	24.2 (30,172)	17.3 (59,114)	3.4 (1,463,980)
Tigrawai	– (17,826)	37.4 (20,168)	38.3 (13,803)	35.4 (6,365)	19.8 (37,994)
Gurage	2.5 (224,545)	21.4 (43,355)	27.4 (16,983)	17.6 (26,372)	5.6 (267,900)
Other	2.0 (1,029,348)	9.2 (40,015)	13.2 (5,238)	8.6 (34,777)	2.3 (1,069,363)
Religion					
Christian	3.1 (2,035,551)	25.8 (316,646)	33.0 (124,526)	21.1 (192,120)	6.1 (2,352,197)
Muslim	2.0 (1,029,675)	17.3 (59,893)	28.6 (11,817)	14.5 (48,076)	2.8 (1,089,568)
Work History					
Not Currently Working	2.6 (1,231,358)	23.8 (214,148)	26.8 (91,866)	21.6 (122,282)	5.7 (1,445,506)
Working	2.6 (2,099,204)	25.3 (163,686)	45.2 (44,922)	17.8 (118,764)	4.2 (2,262,890)
Occupation					
Professional, and Technical	70.2 (2,853)	71.1 (11,798)	68.0 (5,588)	73.9 (6,210)	70.9 (14,651)
Administrative and Managerial	– –	35.4 (1,246)	100.0 (882)	– (364)	35.4 (1,246)
Clerical and Related	56.7 (5,658)	54.5 (10,698)	54.0 (6,915)	55.3) (3,783)	55.2 (16,355)

Table 7.12 (Contd.)

Selected Variables	Place of Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
Sales Worker	3.6 (316,868)	12.3 (88,540)	34.4 (9,843)	9.5 (78,697)	5.5 (405,407)
Social Service	0 (5,684)	27.2 (14,947)	33.5 (9,503)	16.1 (5,444)	19.7 (20,630)
Agricultural and Related	1.9 (1,707,917)	21.6 (10,893)	* (865)	21.3 (10,028)	2.0 (1,718,809)
Production and Transport	11.0 (54,603)	34.6 (24,609)	47.9 (11,117)	23.6 (13,492)	18.3 (79,212)
Number of Living Children					
0	0.42 (280,508)	7.7 (27,819)	10.7 (8,444)	6.4 (19,375)	1.1 (308,327)
1-2	2.4 (998,400)	28.3 (104,746)	31.4 (37,693)	26.6 (67,053)	4.8 (1,103,147)
3-4	2.4 (1,008,097	27.7 (106,972)	39.8 (41,223)	20.2 (65,749)	4.8 (1,115,069)
5+	3.6 (1,043,558)	22.4 (138,295)	31.9 (49,428)	17.1 (88,867)	5.8 (1,181,854)

Note: The figure in parenthesis refers to number of cases.

highest at 5 and above living children. The proportion of women using contraception increases from mere one percent among those who have had no children, to 4.8 percent among those who have had 1-4 children and thereafter it rises to nearly 6 percent among women who have had 5 or more surviving children (see Table 7.11). The positive relationship that emerges between current use of

contraception and number of living children possibly indicates that couples are not willing to practice contraceptives unless their desired number of children is born and survived. The positive relationship that was observed between current use of contraception and number of living children at national level also holds when place of residence is controlled except for two circumstances - one in 'other urban areas' and the other in Addis Ababa. In Addis Ababa (see Table 7.12) the current use of contraception for women with the highest number of living children was reported to be lower than that of the level reported by women with the second highest number of living children. In 'other urban areas', the current use of contraception reaches its peak for women with 1-2 living children and thereafter slowly tapers off. These are exceptions which could be attributed to chance factor resulting from small number of high parity women in Addis Ababa and 'other urban areas'. However, the current use of contraception is found to be lowest for women with no living children at each place of residence under study.

The finding of relatively low percentage of current use among the younger women and women with no living children compared to middle aged and high parity women clearly suggests that the concept of spacing has not taken its root among younger and low parity women and the majority of women adopt family planning to terminate their fertility rather than for spacing.

c) <u>Level of Education and Current Use of Contraception.</u>

Like knowledge and ever use of contraceptives, current use assumes a strong positive relationship with respondent's education (see Table 7.11 and Figure 7.2). The proportion of currently married non-pregnant women using contraception rises from only 2.7 percent among those with no formal education to 19.1, 37.8 and 56.8 percent with primary, junior secondary, senior secondary and university/higher level education respectively. The positive relationship observed between current use of contraception and level of education holds even when place of residence is allowed for (see Table 7.12). In other-words, the positive relationship between level of education and use of contraception observed for the entire population also holds for rural, urban, Addis Ababa and "other urban areas". However, at each level the effect of education on current use of contraception is more pronounced in urban than in rural areas except for the level of senior secondary and above. At this level, the effect is higher in rural areas. This could be attributed to sampling fluctuation resulting from small number of cases of rural women with higher education. The finding of positive relationship between education and use of contraception is in conformity with the expected direction. It is very likely that educated women are more exposed to mass media communications and more receptive to new ideas such as acceptance of family planning than the women no or little education.

A positive relationship, although less pronounced, can also be

Fig-7.2 Percentage of Currently Married Non-Pregnant Women
Who Are Using Any Contraceptive Method By Education of
Respondent and Husband, 1990 FFS

discerned between husband's level of education and current use of contraception (see Table 7.11). And this relationship holds not only at national level but also for each place of residence under study (see Table 7.12): rural, urban, Addis Ababa and 'other urban areas'. It should also be noted here that at each level, the effect of education on current use of contraception is higher for females than males (see Figure 7.2) and it is higher in urban than in rural areas (see Table 7.12).

d) Ethnicity, Religion and Current Use of Contraception

It may be noted from data in Table 7.11 than among ethnic groups the current use of contraception is highest among Tigrawai women followed by Amara and Gurage women. However, the overall relationship between ethnicity and use of contraception observed at national level doesn't hold for the majority of residential areas under study, except for 'other urban centers'. In Addis Ababa, the proportions of women currently practicing contraception were the same for Amharas and Tigrawais, 38 percent each. Both are the front runners in terms of current use of contraception. The second position, in terms of current use, is occupied by Gurage women followed by Oromo women in Addis Ababa. In rural areas, no Tigrawai women were found to be currently practicing contraception. This could be due to small number of Tigrawai rural women covered

in the 1990 FFS[*]. In rural areas, the current use of contraception
is found to be highest among Amara women. For the remaining ethnic
groups, the differences in current use of contraception are less
apparent. It is only in 'other urban areas', the current use of
contraception is found to be highest among Tigrawai women followed
by Amara, Guragee and Oromo women.

Among religious groups the current use of contraception is
found to be higher among Christians than among Muslims (see Table
7.11). This overall finding also holds for rural, urban, Addis
Ababa and 'other urban areas' (see Table 7.12). Among Christians,
the use of contraception is highest among Orthodox Christians and
lowest among Catholics. The differences in use of contraception
between ethnic and religious groups could also result from
differences in socio-economic status between ethnic and religious
groups, particularly the level of education.

e) <u>Work Status, Occupation and Current Use of Contraception</u>

Unexpectedly, the current use of contraceptive is found to be
lower for working than non-working women. About six percent of
currently not-working women reported that they were currently
practicing contraceptive method as against 4 percent of working
women (see Table 7.11). This overall finding holds only for 'other
urban areas'. In urban areas, particularly Addis Ababa, the

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[*] Only 41 Tigrawai women were covered in rural areas.

current use of contraception, as expected, is considerably higher for currently working than non-working women. Forty-five percent of working women of Addis Ababa reported to be currently practicing contraception as against 27 percent of non-working women. There shows no difference in current use of contraception between working and non-working women in rural areas. This finding of higher use of contraception among working women in Addis Ababa, compared to working women of other places, could be attributed, among other factors, to the following:

i) working women in Addis Ababa are mostly engaged in the modern sector of the economy and they work outside the home and

ii) in Addis Ababa couples mostly live without their parents or other surrogate relations because of lack of space and monetary constraints to support large family in a metropolitan town. Therefore the city's couples mostly lack the traditional parental support and that of support of other surrogate relations to raise children and to perform other domestic chores. Given the circumstances, the working women in Addis Ababa find it difficult to combine the roles of being mother and worker, and therefore restrict their fertility by frequent use of contraception. While working women of rural and small urban areas are mostly engaged in traditional sector of the economy and their work doesn't necessarily take them

Fig-7.3 Percentage of Currently Married Non-Pregnant Women
Who Are Using Any Contraceptive Method By Occupation of
Respondent and Husband, 1990 FFS

far away from their home. They mostly live with their parents and other surrogate relatives and can always call upon their support to raise children and to render other domestic chores. Under the circumstances, they can very well combine the roles of being mother and worker and therefore were neither constrained to restrict fertility nor practice contraception.

The current use of contraception by occupational group of the respondents show higher use, in general, among women participating in non-agricultural sector particularly white collar occupations than among those participating in agricultural sector. Among the occupational groups, the use of contraception is highest among professional and technical workers followed by clerical workers while this was lowest among agricultural and related workers. About 71 percent of professional and technical workers, 55 percent of clerical workers and only 2 percent of agricultural workers reported that they were currently practicing contraception (see Table 7.11 and Figure 7.3).

A similar pattern of relationship, although less pronounced, is observed between husbands' occupation and wives current use of contraception (see Table 7.11 and Figure 7.3).

f) **Place of Residence and Use of Contraception**

The data in Table 7.11 reveal that there is a strong positive

Fig-7.4 Percentage of Currently Married Non-pregnant Women
Who Are Using Any Contraceptive Method By Place of
Residence, 1990 FFS

Place of Residence

relationship between place of residence and use of contraception. The proportion of women currently using contraception increases from mere 2.6 percent in rural areas to 19.7 percent and 32.8 percent in "other urban areas" and Addis Ababa, respectively (see also Fig. 7.4). That the use of contraception is higher in urban areas, particularly Addis Ababa, than in rural areas holds for almost all background variables (see Table 7.12).

7.4 Methods Used

After the brief discussions on the use of contraception by different background variables, we now present the use of specific methods of contraception by selected variables.

Table 7.13 shows the distribution of currently married non-pregnant women by method being currently used. As shown by the table, pill turns out to be the most frequently used method, followed by sexual abstinence[*], periodic abstinence[**] and IUD. Only 2.2 percent of currently married non-pregnant women are the current users of pill while 1.2 and 0.5 percent of them currently practice sexual abstinence and periodic abstinence respectively.

Consistent with the overall pattern we also find pill to be

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[*] Couples avoid having sexual intercourse on certain days of the month when the woman is more likely to be pregnant.

[**] Couples avoid having sexual intercourse continuously for a long time to prevent the woman from becoming pregnant.

Table 7.13 Percentage (Weighted) Distribution of Currently Married
Non-pregnant Women Aged 15-49, by Method Being
Currently Used and Place of Residence, FFS 1990.

Method	Place of Residence				
	Rural	Urban	Addis Ababa	Other Urban	Total
All women	(3,330,562)	(377,834)	(136,788)	(241,046)	(3,708,396)
Modern reversible					
Pill	1.1	12.0	13.6	11.1	2.2
IUD	0.1	2.8	5.2	1.5	0.3
Injection	0	0.2	0	0.4	0.0
Vaginal Methods	0	0.1	0	0.2	0.0
Condom	0.0	0.7	0.5	0.8	0.1
Modern irreversible					
Tubectomy	0.2	0.9	1.6	0.6	0.3
Vasectomy	0	0	0	0	0.0
Traditional					
Periodic Abstinence	0.1	4.2	8.0	2.1	0.5
Sexual Abstinence	1.1	2.2	2.0	2.3	1.2
Withdrawal	0.0	0.9	1.6	0.5	0.1
Douche	0	0.3	0.4	0.2	0.0
Traditional herbs or medicine	0	0.1	0	0.2	0
Others	0	0	0	0	0
Modern methods	1.4	16.7	20.8	14.4	2.9
Traditional methods	1.2	7.7	12.0	5.3	1.9
Any method	2.6	24.5	32.8	19.7	4.8

Note: The figure in parenthesis refers to number of cases.

the most frequently used method in all places of residence (see Table 7.13). In urban areas particularly in Addis Ababa, the second most frequently used method was periodic abstinence followed by IUD, while in "other urban areas", sexual abstinence is the second most important method followed by periodic abstinence. In rural areas almost equal proportion of women (1.1 percent each) use

pill and sexual abstinence. It is to be further noted here that women in urban areas tend to use modern methods more frequently than the traditional methods while those few who use contraception in rural areas equally practice modern and traditional methods.

Examination of data in Table 7.13 further reveals that for each specific method of contraception particularly those of popularly used methods the use is higher among urban women, particularly Addis Ababa women, compared to rural women. This is expected in view of the fact that urban women in general and Addis Ababa women in particular are more educated, exposed to different communications media and have easier access to family planning services.

Table 7.14 presents the current use of specific methods of contraception by age of women. Confining the analysis to most popular (in terms of use) methods of contraception, particularly pill and sexual abstinence, we find the former is mostly used by early middle aged women (25-34 years) followed by women of younger ages (15-24 years) and this was least used by women of highest age-group (45-49 years). While there shows no variation in use of sexual abstinence by age of the respondents.

The data in Table 7.15 show that the use of both modern and traditional methods of contraception tend to increase with the level of education of the respondents. However, the effect of

Table 7.14 Current Use of Specific Methods of Contraception Among
Currently Married and Non-pregnant Women by Age,
Ethiopia, FFS 1990.

Method	Age			
	15-24	25-34	35-44	45-49
All women	(912,761)	(1,465,999)	(1,027,501)	(302,135)
Pill	2.00	3.20	1.50	0.3
IUD	0.04	0.50	0.50	0.0
Injection	0.04	–	0.05	–
Vaginal methods	–	0.03	–	–
Condom	–	0.20	0.10	–
Female Sterilization	–	0.20	0.60	0.4
Male Sterilization	–	–	–	–
Periodic Abstinence	0.40	0.90	0.30	0.1
Sexual Abstinence	1.30	1.10	1.40	0.4
Withdrawal	0.05	0.07	0.10	–
Douche	–	0.03	0.05	–
Traditional methods	–	0.03	–	–
Others	–	0.06	–	–

education is more pronounced on the use of modern than traditional
methods. For example, the current use of modern methods increases
from mere 1.5 percent among illiterate women to 22.8 and 39.0
percent among women with junior secondary and senior secondary and
higher level of education respectively. The corresponding increase
in the use of traditional methods was from 1.2 percent among
illiterate women to 15.0 and 17.8 percent among women with junior
secondary and senior secondary and higher level education
respectively. At secondary and higher level education couples
using modern methods of contraception are over twice as those
practicing traditional methods.

Table 7.15   Current Use of Specific Methods (Modern and
              Traditional) of Contraception Among Currently
              Married and Non-pregnant Women by Level of
              Education of Respondents, Ethiopia, FFS 1990

Education Level	Type of Method		
	Modern	Traditional	Total
Education (Respondent)			
Illiterate	1.5	1.2	3,405,992
Other (non-formal)	4.2	0.7	35,800
Primary (1-6 grade)	12.6	6.6	154,702
Junior Secondary (7-8 grade)	22.8	15.0	38,698
Senior Secondary and above (9 grade and above)	39.0	17.8	72,354

7.5   Choice of Methods Among Current Contraceptive Users

Table 7.16 and Figure 7.5 show the distribution of current
users of contraception by specific method used.   As shown by the
data in the table, pill turns out to be the most frequently used
method followed by sexual abstinence, periodic abstinence and IUD.
Forty five percent of the current users use pill, while sexual
abstinence and periodic abstinence are practiced by 24.5 and 11.2
percent of the users respectively. IUD users accounted for only 7.0
percent (see Fig 7.5).   This overall pattern also holds for rural
areas and other urban areas.   Pill is also the most frequently used
method in Addis Ababa. However, the second most popular method (in
terms of current use) was sexual abstinence in Addis Ababa.   The
third most important method in rural, Addis Ababa and other urban
areas was tubectomy, IUD and Rhythm respectively.   The
contraceptive use of modern methods particularly those of

216

Fig-7.5 Percentage of Current Contraceptive Users by Method Being Used and Residence, 1990 FFS

Pill 42%
lud 2%
Steril-
ization 8%
Condom 1%
Others 1%
Traditional 46%

[URBAN]

Pill 49%
Condom 3%
Steril-
ization 4%
lud 12%
Other Modern 1%
Traditional 32%

[RURAL]

Pill 45%
lud 7%
Condom 2%
Sterilization 6%
Other Modern 1%
Others 1%
Traditional 39%

[TOTAL]

Table 7.16   Percentage (Weighted) Distribution of Current Users by
Method Being Used and Place of Residence, FFS 1990

| Method | Place of Residence | | | | |
	Rural	Urban	Addis Ababa	Other Urban	Total
Modern reversible					
Pill	41.6	49.0	41.4	56.1	45.4
IUD	2.1	11.6	15.8	7.7	7.0
Injection	-	0.9		1.8	0.5
Vaginal methods	-	0.5		0.9	0.2
Condom	1.4	2.7	1.5	3.8	2.1
Sub Total	45.2	64.7	58.7	70.3	55.3
Modern irreversible					
Tubectomy	7.6	3.8	4.8	2.8	5.6
Vasectomy	-	-	-	-	-
Sub Total	7.6	3.8	4.8	2.8	5.6
Traditional					
Periodic Abstinence	4.5	17.4	24.5	10.6	11.2
Sexual Abstinence	41.1	9.0	6.0	11.8	24.5
Withdrawal	0.7	3.7	4.9	2.6	2.3
Douche	-	1.0	1.1	1.0	0.5
Traditional herbs/medicine	-	0.4	-	0.9	0.2
Sub Total	46.3	31.5	36.5	26.9	38.6
Others	0.9	-	-	-	0.5
Total	100.0	100.0	100.0	100.0	100.0
Weighted Number	86,163	92,407	44,878	47,529	178,571

reversible ones, are considerably more common among urban than among rural users.   While the frequency of use of traditional methods, particularly sexual abstinence and periodic abstinence, are appreciably higher among rural than among urban users.   For example, among urban users, 69 percent were users of modern methods while the remaining 31 percent were users of traditional methods. The corresponding distribution of users of modern and traditional methods among rural users were 53 and 47 percent respectively. This rural-urban difference in pattern of use of methods holds even

Fig–7.6 Percentage of Current Contraceptive Users by Method Being Used and Number of Living Children, 1990 FFS

Pill 42%

Traditional 58%

[ZERO CHILDREN)

Pill 51%

Steril ization

Iud 4%

Condom 5%
Other Modern 1%

Traditional 39%

[1 TO 2 CHILDREN)

Pill 48%

Iud 5%

Condom 2%
Steril–
ization 8%
Other Modern 1%

Traditional 37%

[3 TO 4 CHILDREN)

Pill 39%

Iud 12%

Others

Condom 1%
Steril–
ization 8%
Other Modern 1%

Traditional 39%

[5 & Above CHILDREN)

when age is controlled. It may be observed from data in Table 7.17 that the majority of the rural users at every age group, except for age group 25-34 years, rely on traditional methods while the majority of urban users at every age group rely on modern methods of contraception, particularly pill. This rural-urban difference in pattern of use of methods may be attributed to greater access to modern methods, particularly the reversible ones which require constant re-supply, in urban than in rural areas.

Method of choice also varies by number of living children (see Table 4.18 and Figure 7.6). Users with no living children tend to use more traditional methods such as periodic abstinence and sexual abstinence while users with higher living children are more prone to use modern methods (see Figure 7.6). This finding of greater popularity (in terms of use) of traditional methods among low parity users and modern methods among high parity users clearly indicate that those few who adopt family planning in Ethiopia in do so for regulating fertility than for spacing.

7.6   Current Use: Husbands' Response

It is often hypothesized that females in traditional societies such as Ethiopia are more reluctant to discuss personal matters like use of contraception to outsiders while males have no such inhibition and they will be more open than females to discuss the use of contraception with interviewers. Therefore the level of the use of contraception, if determined on the basis of women's

Table 7.17   Percentage (Weighted) Distribution of Current Users by
Method Being Used, Age, Rural/Urban Residence
FFS 1990

Method	Age-Group				
	15-24	25-34	35-44	45-49	Total
Rural					
Pill	41.4	55.2	18.2	42.4	41.6
IUD	-	-	7.8	-	2.1
Condom	-	3.0	-	-	1.4
Sterilization	-	5.1	19.1	-	7.6
Traditional	58.6	34.7	54.9	57.6	46.3
Others	-	2.0	-	-	0.9
Total	100.0	100.0	100.0	100.0	100.0
Number(weighted)	(20,455)	(40,699)	(23,525)	(1,484)	(86,163)
Urban					
Pill	68.2	46.6	46.7	9.7	49.0
IUD	2.4	13.5	13.8	-	11.6
Injection	2.7	-	2.0	-	0.9
Vaginal Methods	-	0.8	-	-	0.5
Condom	-	3.0	3.7	-	2.7
Sterilization	-	0.8	7.8	57.3	3.8
Traditional	27.7	35.3	26.0	33.0	31.5
Others	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0
Number(Weighted)	(13,848)	(52,810)	(23,614)	(2,137)	(92,409)
Total					
Pill	52.2	50.3	32.5	23.1	45.4
IUD	1.0	7.6	10.8	-	7.0
Injection	1.1	-	1.0	-	0.5
Vaginal Methods	-	0.5	-	-	0.2
Condom	-	3.0	1.8	-	2.1
Sterilization	-	2.7	13.4	33.8	5.6
Traditional	45.7	35.0	40.4	43.1	38.6
Others	-	0.9	-	-	0.5
Grand Total	100.0	100.0	100.0	100.0	100.0
Number(Weighted)	(34,303)	(93,509)	(47,139	(3,621)	(178,571)

Table 7.18   Percentage Distribution of Current Users by
Contraceptive Methods Currently Being Used
and Number of Living Children, FFS 1990.

	Number of Living Children				
	0	1-2	3-4	5+	Total
Pill	42.0	50.7	48.3	39.2	45.4
IUD		4.0	4.5	11.7	7.0
Injection		-	0.7	0.7	0.5
Vaginal Methods		0.8	-	-	0.2
Condom		4.5	1.7	0.6	2.1
Sterilization		1.3	7.5	7.8	5.6
Traditional	58.0	38.7	37.3	38.7	38.6
Others		-	-	1.2	0.5
Total	100.0	100.0	100.0	100.0	100.0
Weighted Number	(3,330)	(53,072)	(53,705)	(68,465)	(178,571)

response is likely to be downwardly biased.   To circumvent this
problem and to arrive at a true level of contraception use, we have
also interviewed nearly 10 percent of respondents' husbands in this
survey.   Husbands were interviewed by the supervisors to ensure
higher quality data. Female respondents were interviewed by female
interviewers. The responses of husbands were matched with those of

the responses of their wives on current use of contraception by place of residence and these are presented in Table 7.19.

Table 7.19   Percent of Current Contraceptive Use by Place of Residence Based on Responses Provided by Husbands and Wives.

Place of Residence	Percent of Current Use of Contraception	
	Based on Husbands	Based on Wives
Rural	3.8	2.7
Urban	28.4	20.2
Addis Ababa	49.0	29.5
Other Urban Areas	17.4	15.3
Total	10.9	7.8

Note: This table is based on 709 currently married non-pregnant women and their husbands who were interviewed separately.

As shown by the data in the table, there is some discrepancies in the current use level by husbands and wives responses. The use level is consistently higher based on husbands' than wives' responses. However, the differences are not very large except for the difference of about 20 percentage points noted in Addis Ababa. The overall difference is about 3 percentage points. This was only 1.1 percentage points in rural areas and 2.1 percentage points in other urban centers. The large difference observed in Addis Ababa could be simply attributed to sampling fluctuations associated with

small number of cases[*] on which Addis Ababa results are based. The extra-marital sex on the part of husbands could also explain this large discrepancy in use of contraception reported by husbands and wives in Addis Ababa. Extra-marital sex on the part of husbands is not unlikely in the metropolitan capital city - however, this is an empirical question which needs further verification.

Given the small differences observed in the current use level by husbands' and wives' responses in the total sample, particularly in the rural and 'other urban areas', and failure to ascertain at this stage whether these differences are real or due to sampling fluctuations, no attempt is made to revise the estimate of current use of contraception on the basis of husbands' responses.

7.7 Future Intention to Use Contraceptives

Women who knew a method of contraception but never used contraceptives were asked if they or their spouses had thought of using family planning method in the future. Information of this kind can shed some light on the future demand for family planning. Data in Table 7.20 Show that 26 percent of women who had heard about a family planning method but never used it, intend to use in the future. The percentage of never users who intend to use contraception in the future declines with advancing age. It is

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[*] Addis Ababa results are based on only 177 cases of matched husbands and wives.

highest among women of youngest age group (15-19 years)and lowest among women of highest age-group (45-49 years). About 37 percent of young women (15-19 years) who have heard of family planning and never used a method expressed their intention in using contraception in future. This proportion was only 9 percent among women of highest age-group. It is to be also noted here that over one-quarter of women below the age of 30 who have heard of family planning but never used a method expressed their intention to use it in the future. This is undoubtedly an encouraging response. It shows that there is a good demand for family planning particularly among young couples, although one can't say at this stage for sure that how many of these potential users will eventually accept family planning and at what stage of their life cycle? However, if they adopt family planning while they are still young-this will have a greater demographic impact than if they adopt it at later stage of their life cycle. Adoption of family planning at early ages will also allow couples to space their births. Therefore all out efforts should be made to persuade these young potential users to accept family planning at their early ages.

Data in Table 7.20 also show variation in intention to use in the future by place of residence, number of living children and level of education of the respondents. The proportion of future users, among those who heard a method but never use, is highest in Addis Ababa (44.0%) follwed by other urban centers (35.0%) while this is lowest in rural areas (23.0%). The proportion of future

Table 7.20 Percentage (Weighted) Distribution of the Response to the Question, "Have You or Your Spouse Thought of Using Any Family Planning Method in the Future?", Asked to Women Who Knew a Method But Never Used it, By Selected Background Characteristics, FFS 1990.

Characteristics	Number (Weighted)	Percent (intend to use in the future)
Age		
15-19	700,393	36.8
20-24	589,185	29.8
25-29	552,916	26.0
30-34	539,096	22.7
35-39	440,870	20.6
40-44	253,833	13.8
45-49	207,240	9.4
TOTAL	3,283,532	25.8
Place of Residence		
Rural Domain	2,673,573	22.9
Urban Domain	609,959	38.3
Addis Ababa	245,057	43.8
Other urban	364,902	34.7
TOTAL	3,283,532	25.8
Number of Living Children		
0	855,274	35.6
1-2	881,645	21.0
3-4	760,562	22.1
5-6	527,289	21.7
7+	258,765	28.4
Level of Education		
Illiterate	2,672,188	21.3
Other Non-formal	46,581	27.9
Primary	247,806	32.7
Junior Secondary	136,891	48.3
Senior Secondary & above	180,065	63.8

users assumes an U-Shaped relationship with the number of living children in which the proportion of future users is relatively higher among those with no living children and those with the highest (7+) number of living children while this is lower for

women with in-between parities. The proportion of future users,
among those who knew a method but never used one, reaches nearly as
high as 36 percent for women with no living children and 28
percent for those with 7 or more children. These proportions were
around 21 to 22 percent for women with in-between parities.

The proportion of future users, among those who knew are
higher in census with the level of education of the respondents,
from 21 percent among women with no education to 33; 48 and 64
percent among women with primary, Junior secondary and Senior
secondary and higher level education respectively(see Table 7.20).

7.7.1. Method Preferred by Future Users

Type of method preferred by future users of contraceptives is
shown in Table 7.21. In both rural and urban areas the future
users who knew a method but never practiced it intend to use more
frequently the modern methods than the traditional methods. Among
the modern methods the pill is the most preferred method. Injection
is the second most preferred method among the future users, in
rural areas while in Addis Ababa and other small towns (i.e., other
urban areas) the second most preferred method among the future
users was periodic abstinence followed by injection.

This overall finding of highest preference for pill followed
by injection among potential users also holds at every age-group of

Table 7.21   Percentage (Weighted) Distribution of Women Who Knew a
Contraceptive Method But Never Used it But Who Intend
To Use In The Future by Method Preferred and Place of
Residence, FFS 1990.

| Method | Place of Resedence | | | | |
	Rural	Urban	Addis Ababa	Other Urban	Total
Modern reversible					
Pill	75.9	60.4	53.1	66.6	71.6
IUD	0.2	3.2	4.2	2.5	1.1
Injection	9.9	11.0	10.6	11.4	10.2
Vaginal Methods	-	-	-	-	-
Condom	-	1.6	2.7	0.7	0.4
Sub Total	86.0	76.3	70.6	81.2	83.3
Modern irreversible					
Tubectomy	1.5	1.8	2.8	1.0	1.6
Vasectomy	0	0	0	0	0
Sub Total	1.5	1.8	2.8	1.0	1.6
Traditional					
Periodic Abstinence	1.4	15.6	20.1	11.7	5.3
Sexual Abstinence	0.8	1.4	2.0	1.0	1.0
Withdrawal	-	0.3	0.2	0.4	0.1
Douche	0.1	0.3	0.7	-	0.2
Traditional methods	0.4	0.1	0.2	-	0.3
Sub Total	2.7	17.7	23.3	13.1	6.9
Others	4.4	1.6	1.7	1.4	3.6
Not Stated	5.4	2.6	1.6	3.3	4.6
Total %	100.0	100.0	100.0	100.0	100.0
Weighted Number	611,530	233,868	107,212	126,656	845,398

Table 7.22 Percentage (Weighted) Distribution of Women Who Knew a
Contraceptive Method But Never Used it But WHO Intend
To Use in The Future by Method Preferred, And Age,
FFS 1990

Method	Age Group			
	15-24	25-34	35-44	45+
Pill	68.8	74.6	73.7	78.1
IUD	1.8	0.4	0.1	-
Injection	10.7	9.4	9.9	10.6
Condom	0.8	0.1	-	-
Tubectomy	0.4	1.9	5.1	1.8
Periodic Abstinence	7.9	3.5	1.0	-
Sexual Abstinence	1.2	0.7	1.2	-
Withdrawal	0.2	-	-	-
Douche	0.3	-	-	-
Traditional Medicine/ herb	0.6	0.1	-	-
Others	2.9	3.7	5.1	9.4
Not Stated	4.4	5.6	3.9	-
Total %	100.0	100.0	100.0	100.0
Weighted Number	433,715	266,177	126,138	19,368

the respondents (see Table 7.22). This overall finding also holds
at each education level except for those with senior secondary and
university education and above (see Table 7.23). Among the
potential users with senior secondary education pill is still the
most preferred method. However, for this group periodic abstinence
is the second most preferred method. However, for the potential
users with university education and above, periodic abstinence is
the most preferred method followed by pill (See Table 7.23).

Table 7.23   Percentage (Weighted) Distribution of Women Who Knew a
Contraceptive Method But Never Used it But WHO INTEND
To Use in The Future by Method Preferred and Level of
Education, FFS 1990.

Method	Level of Education				
	Illiterate	Primary	Junior Secondary	Senior Secondary	University/ higher
Pill	77.8	71.9	57.1	51.4	42.7
IUD	0.1	2.1	1.6	5.1	–
Injection	8.9	11.7	20.1	8.9	8.5
Condom	0.1	–	0.3	2.8	–
Tubectomy	2.0	0.9	1.8	–	–
Periodic Abstinence	0.6	8.5	9.2	24.2	48.8
Sexual Abstinence	0.8	0.9	2.5	0.9	–
Withdrawal	–	–	–	0.7	–
Douche	–	–	0.9	0.7	–
Traditional Medicine	0.3	1.3	–	–	–
Others	4.7	0.6	0.4	2.0	–
Not Stated	4.8	2.1	5.5	3.4	–
Total %	100.0	100.0	100.0	100.0	100.0
Weighted Number	570,248	81,030	66,144	114,961	13,015

7.7.2.   Reasons For No Intention of Using a Method

Respondents who have heard of family planning but never used
a method and also expressed no intention to use it in the future
were further asked to provide reason(s) for this decision of non-
use.   This information is valuable from family planning programme
point of view.   The frequency distribution of the responses by
reasons for not planning to use a method in the future by never
users is provided in Table 7.24.   The principal reason cited for

Table 7.24   Percentage Distribution of Reasons For NO INTENTION of
Using Family Planning Method in the Future, FFS 1990

Reasons	Percent Distribution
Religious prohibitions	1.4
Opposed to Family Planning	2.0
Husband's Disapproval	3.6
Other Relatives Disapproval	0.2
Side Effects	4.3
Lack of Knowledge	15.8
Difficult to obtain	0.8
Too much cost	0.0
Inconvenient to use	0.3
Fatalistic	35.2
Menopause/sub fecund	5.2
Others	25.6
Unsure	5.6
Not Stated	0.0
Total Percent	100.0
Number	2,437,014

not planning to use a method in the future by never users was
'fatalism' (i.e., fate or destiny is pre-determined by nature or
God -whatever will happen, will happen- which can't be altered
whether you accept family planning or not) followed by 'lack of
knowledge'. About thirty-five percent of the never users were not
willing to accept family planning in the future for being fatalist
while 16 percent of the never users had no intention of using a
method of family planning for lack of knowledge.   A large
proportion of these 51 percent of the non-users could possibly be
persuaded to use contraception by subjecting them to suitable
information, education and communication services. It, therefore,
calls for strengthening IEC programme of the government.

7.8   Unmet Need for Contraception

In this section of the chapter we will assess contraceptive use in relation to need, that is, desire to avoid further childbearing altogether[1]. An estimate of unmet contraceptive need is essential for future planning purposes. There are various ways one can measure unmet need for contraceptives. One very popular measure of unmet need for contraceptives is the percentage of currently married women who say that they want no more children but are not using any method of contraception. This group of women in the present survey, accounted for 1.2 percent of all currently married respondents. These proportions in rural, urban, Addis Ababa and other-urban centers are 0.70, 5.8, 7.1 and 5.0 percent respectively. The above measure of unmet need for contraceptive is, however, very crude which doesn't take into account biological risk of conception and therefore unnecessarily takes into consideration those women for whom practice of contraception is irrelevant. In order to account for this drawback we have re-defined unmet need for contraceptives as the percentage of currently married women who are exposed to risk (biological) of

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1. This was determined by asking two questions – one to currently married pregnant woman and the other to currently married non-pregnant women. The question asked to pregnant woman was, "After the child you are expecting would you like to have another child or would you prefer not to have any (more) children?" The determining question for non-pregnant woman was, "would you like to have a (another) child or would you prefer not to have any (more) children?" Those who answered "no more" to the above questions formed the basis of the present analysis.

contraception (i.e., those who are not pregnant, fecund[1], sexually active[2] and not post-partum amenorrhoeic)[3] and wanted no more children but were not using any method of contraception . This group of women represents less than one (0.43%) percent of all currently married women. These estimates for rural, urban, Addis Ababa and other urban areas were 0.3, 1.9, 3.1 and 1.3 percent respectively. However, if we also consider those using traditional methods as non-users, the above estimate of unmet need for contraceptives turns out to be 0.6 percent for the country as a whole. The corresponding estimates for rural, urban, Addis Ababa and other urban areas are 0.3, 3.7, 6.4 and 2.3 percent respectively.

7.8.1. Reasons for Not Using a Method, Although Wanted No More Children

The currently married women who wanted no more children but were not using a method were further asked to state the reasons for

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1. Fecundity status was determined by asking the following question, "As far as you know, is it physically possible for you and your husband to have children if you want one? Those who answered 'yes' to the above question were considered as fecund.

2. Sexually active status was determined by asking the following question, "Have you had sexual intercourse in the last four weeks"? Those was said 'yes' were considered as sexually active.

3. Post-partum non-amenorrhoeic woman is one whose menstruation had resumed since the birth of the last child.

not using. The distribution of these reasons are provided in Table 7.25. The major specific reason cited for not using any method of contraception, although wanted no more children, was health concern (42.6%) followed by husband's disapproval (22.7%).

Table 7.25 Percentage (weighted) Distribution of Non-pregnant Women Who are Sexually Active, Fecund, Not Post-partum Amenorrhoeic and Want No More Children But Were Not Using Any Contraceptive Method by Main Reason for Not Using, FFS, 1990

Reasons	Number (Weighted)	Percent
Health Concern	7,774	42.6
Inconvenient to Use	841	4.6
Husband's Disapproval	4,137	22.7
Others	5,279	28.9
Not Stated	221	1.2
Total	18,252	100.0

7.8.2. Differentials

The socio-demographic characteristics of the currently married women who say that they want no more children but are not using any method of contraception are provided in Table 7.26.

Data in Table 7.26 show that unmet need for contraception increases slowly with age reaching its highest (1.7%) at age-group 35-39 and declines thereafter. However, the variations in unmet need between age-groups are negligible.

Table 7.26 Of All Currently Married Women, the Percentage Who Want
No More Children But are Using No Method of
Contraception, FFS, 1990.

Socio-demographic Characteristics	Number (Weighted)	Percent
Age		
15-19	364,798	0.5
20-24	717,776	1.1
25-29	851,734	1.0
30-34	880,903	1.4
35-39	703,781	1.7
40-44	443,522	1.1
45-49	312,324	1.1
Total	4,274,838	1.2
Education (Respondent)		
Illiterate	3,926,809	1.0
Primary	182,093	5.4
Junior Secondary	44,923	7.4
Senior Secondary	67,542	6.3
University/Higher	10,303	8.6
Place of Residence		
Rural	3,859,027	0.7
Urban	415,811	5.8
Addis Ababa	146,357	7.1
Other Urban	269,454	5.0
Total	4,274,838	1.2
Religion		
Christian	2,692,570	1.5
Muslim	1,280,606	0.6
Work Status		
Currently working	2,593,283	1.1
Currently not-working	1,681,555	1.3
Occupation (Respondent)		
Professional & Technical	16,159	5.2
Administrative & Managerial	1,701	-
Clerical & Related	17,025	6.5
Sales Worker	458,905	1.7
Social Service	21,925	12.3
Agriculture & Related	1,974,877	0.8
Production and Transport	95,764	1.7

Unmet need by level of education shows an increasing trend except for one lone departure in which the level of unmet need among women with senior secondary education is found to be lower than that of the level noted for women with junior secondary education. The unmet need for contraception is highest among women with university/higher education while this was lowest for illiterate women' Women with junior secondary education occupy the intermediary position. The proportion of currently married women who wanted no more children but were not using any method of contraception rises from mere 1.0 percent among illiterate women to 5.4, 7.4, 6.3 and 8.6 percent among women with Primary, Junior Secondary, Senior Secondary and University/higher level education.

The unmet need for contraception is found to be considerably higher in urban, particularly in Addis Ababa than in rural areas. Only about one percent of the rural currently married women who wanted no more children were not using any method. The corresponding proportions in urban, Addis Ababa and other urban areas were 5.8, 7.1 and 5.0 percent respectively.

The unmet need for contraceptive is found to be slightly higher for Christians than for Muslims while there is no difference in unmet need for contraception between working and non-working women.

The unmet need for contraception is found to be highest among women engaged in 'social service' works followed by women engaged

in 'clerical' works and 'professional and technical' works, while this was found to be lowest among women engaged in agricultural and related works. The proportion of currently married women who wanted no more children but were not using any method of contraception was as high as 12 percent among service workers. The corresponding proportions among clerical, professional/technical and agricultural/related works were 6.5, 5.2 and 1.0 percent respectively.

From the preceding findings, it appears that the unmet need for contraception varies by level of education, place of residence and occupational status of the respondent.

CHAPTER VIII

FERTILITY PREFERENCE

8.1 Introduction

In the 1990 FFS basic information on the fertility preferences of women has been collected. Among a series of questions addressed to currently married pregnant women or fecund women included: the desire for more children, sex preference and desired time for the birth of the next child. However, question on the total number of children desired was asked to all women regardless of marital, pregnancy or fecundity status. A woman was considered to be fecund if she or her husband were not sterilized and she also believed herself to be physically capable of having a child if she wanted one.

8.2 Desire for Additional Children

Data in Table 8.1 show the proportion of currently married fecund women by desire for additional children and number of living children. As shown in the table, 64.6 percent desire additional children, about 24.0 percent want no more children and 11.6 percent could not decide. Moreover, among those who wanted additional children 31.8 percent could not give a specific number of children they wanted, rather they believed that it was up to God. The proportion of women wanting more children diminishes with increasing number of living children. Among childless women and those who have only one child 87.0 percent reported that they

Table 8.1 Percentage Distribution of Currently married Fecund Women

by Number of Additional Children Desired and Number of

Living Children (Including Current Pregnancy). 1990 FFS

Number of Additional Children Desired	Number of living Children											
	0	1	2	3	4	5	6	7	8	9	10+	Total
Want no more	7.1	4.9	14.2	18.2	25.4	32.1	42.4	46.8	60.9	64.3	75.4	23.7
Want more												
1	0.1	3.3	1.9	3.6	4.7	3.5	3.2	2.2	3.0	1.4	–	3.0
2	4.2	6.3	13.2	10.6	9.8	7.9	8.1	5.0	3.5	4.9	3.8	8.7
3	3.4	12.6	7.2	8.2	5.2	2.8	2.3	2.3	2.7	1.4	–	6.0
4	13.5	13.1	8.5	7.0	5.4	3.6	0.8	2.6	1.6	–	–	6.8
5+	24.1	16.5	10.0	6.9	4.2	3.5	3.3	2.9	0.6	–	–	8.2
Number not Stated	0.3	–	–	–	0.1	–	–	–	–	1.1	–	0.1
Up to God	41.2	35.6	34.8	34.6	31.2	30.1	26.2	25.5	11.9	13.7	12.1	31.8
Total	87.0	87.3	75.7	70.9	60.6	51.4	43.8	40.5	23.3	22.6	15.9	64.6
Undecided	5.7	7.8	10.0	11.0	14.0	16.4	13.3	12.6	15.8	13.1	8.7	11.6
Not Stated	0.2	–	–	–	–	–	0.4	–	–	–	–	0.1
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	251923	542130	652122	635811	596817	508000	335941	198948	110776	54209	28759	3915436

wanted more children and the proportion decreases gradually reaching about 16.0 percent for women with ten or more children. Conversely, the proportion of women wanting no more children increases with the number of living children. The proportion is about 5.0 percent for women with only one child against 75.4 percent for those who have ten or more children. Thus, in accordance with the aim of this analysis those women who decided not to have any more children could be taken as the potential candidates for utilizing family planning services.

8.3. Differentials in Proportion Wanting no More Children

Women who answered "No" to the question "Do you want another child sometime?" in the survey were considered to be those who want to limit or stop child-bearing, and hence, more likely to adopt contraception. Table 8.2 presents percentage of currently married fecund women who want no more children according to background variables. As seen in the table the proportion increases positively with number of living children for all background variables.

In examining data on percentage of women wanting no more children it may be observed that there is less desire for more children among women in urban areas than those in rural areas. Among urban areas, however, the proportion wanting no more children is higher in the capital city (Addis Ababa) compared to other urban areas. The data indicated that only 44.5 percent of urban, 21.5

Table 8.2 Percentage Distribution of Currently Married Fecund Women Who Wanted No More
Children by Number of Living Children (Including Current Pregnancy)
and Background variables, 1990 FFS

Background Variables	Number of Living Children										
	0	1	2	3	4	5	6	7	8	9+	Total
place of Residence											
Rural	7.3	4.8	13.0	16.1	22.0	29.1	38.4	44.9	58.7	66.3	21.5
Urban	4.4	6.4	26.1		60.9	60.1	80.5	61.2	73.9	81.9	44.5
Addis Ababa	-	5.6	30.8	35.5	65.9	63.2		73.6	79.4	93.1	47.5
Other Urban	6.3	6.7	23.3	42.4	56.3	59.8	81.2	57.2	70.7	77.6	42.8
Current age											
<25	7.3	5.2	13.1	17.4	19.8	4.3	41.3	100.0	-	-	10.1
25-34	7.6	3.0	15.7	17.9	23.1	30.2	41.6	42.4	65.5	59.7	22.8
35-44	-	5.7	12.7	20.4	31.7	33.0	42.7	46.2	60.2	66.1	35.7
45-49	16.2	37.0	12.7	15.4	31.9	58.4	45.9	55.9	59.3	76.5	47.1
Age at 1st marriage											
<15	12.1	4.4	10.4	18.1	21.2	31.7	51.1	55.0	65.8	77.3	25.0
15-19	5.6	6.1	16.2	17.7	28.2	33.7	37.9	43.4	60.1	60.1	23.6
20-29	4.8	1.8	15.4	21.8	26.2	27.7	39.4	42.4	55.9	68.7	21.1
30+	-	-	-	-	-	-	-	-	-	-	-
Duration of marriage											
<10	6.8	5.0	15.4	18.9	24.4	24.4	75.4	-	-	-	11.7
10-19	5.9	2.5	11.3	17.4	23.9	30.6	37.6	41.2	63.7	54.7	24.2
20-29	7.8	15.5	8.8	25.5	32.8	33.7	48.1	52.8	62.3	72.1	41.5
30+	-	-	26.7	-	21.1	70.7	49.7	50.8	54.7	73.6	48.9
Education											
Illiterate	7.0	4.2	12.3	16.5	24.1	30.4	41.1	46.2	60.0	67.0	22.9
Non-formal	-	6.4	23.2	-	27.0	74.5	-	65.8	100.0	100.0	24.7
Primary (1-6)	11.6	9.9	32.4	39.2	45.5	63.0	71.8	45.5	76.2	100.0	32.9
Junior Secondary (7-8)	8.0	15.7	13.9	30.4	42.0	48.8	100.0	100.0	100.0	100.0	29.4
Senior Secondary and above	-	4.6	29.4	39.7	23.4	82.7	100.0	80.4	-	-	35.0

Table 8.2 (cont.d)

Background Variables	Number of Living Children										
	0	1	2	3	4	5	6	7	8	9+	Total
Ethnicity											
Amara	15.9	7.0	22.8	26.1	36.0	43.1	56.7	68.0	80.9	80.6	32.1
Oromo	5.0	5.0	14.6	22.3	24.5	37.3	49.9	53.2	72.3	70.6	26.3
Kembata	-	2.8	9.8	2.0	-	-	7.6	13.7	52.3	-	5.7
Welayta	8.4	4.0	4.0	23.5	35.2	27.2	46.4	30.4	47.9	59.3	20.7
Sidama	-	2.6	2.2	4.4	12.4	13.3	26.7	32.3	70.1	61.9	13.9
Gurage	3.1	4.6	4.5	2.8	10.5	22.5	28.8	33.0	15.9	81.3	13.8
Gedeo	-	-	2.4	-	31.0	17.8	31.7	26.3	19.8	41.8	13.0
Hadiya	-	-	-	1.1	11.7	2.0	21.2	16.7	20.4	66.8	6.5
Religion											
All Christian	7.5	5.3	16.6	22.1	28.4	35.4	46.0	52.3	66.1	75.6	27.1
Orthodox	8.8	6.5	18.4	24.7	31.4	40.1	50.3	60.9	68.7	83.8	30.1
Protestant	5.6	1.4	8.8	11.6	18.5	14.6	33.6	28.1	44.8	51.6	16.6
Catholic	-	-	4.1	9.7	-	18.0	12.0	-	100.0	100.0	9.1
Muslim	8.3	4.2	10.9	13.0	19.6	24.9	38.3	37.6	46.1	53.0	18.3
Traditional Religion	-	8.1	9.7	7.3	24.5	45.1	13.2	26.1	27.7	60.0	16.9
Work Status											
Not working	4.8		13.7	15.9	23.3	25.6		38.3	54.2	65.2	20.6
Working	8.8	4.8	14.5	19.7		36.2	48.9	52.0	64.0	70.6	25.7
Occupation											
Professional and Technical	-	-	7.7	77.9	47.4	78.8	100.0	-	-	-	42.5
Administrative and Managerial	-	-	-	-	-	100.0	-	-	-	-	12.3
Clerical and related	-	8.7	26.9	16.7	100.0	90.9	100.0	100.0	-	-	38.0
Sales workers	11.6	3.2	14.8	18.1	18.2	33.3	45.1	33.9	62.3	60.4	22.5
Social service Workers	-	48.6		32.1	88.2	67.2	70.7	100.0	100.0	100.0	49.1
Agriculture and Related	8.7	4.4	14.2	19.5	28.0	35.6	48.9	57.2	67.3	73.3	26.0
Production and Transport	-	7.5	14.1	12.4	21.7	31.5	49.8	58.6	32.0	100.0	22.8

Table 8.2 (Cont'd)

Background Variables	Number of Living Children										
	0	1	2	3	4	5	6	7	8	9+	Total
Husband's work status											
Not Working	34.0		47.7	34.8	36.1	46.3	59.4	61.2	100.0	-	40.0
Working	6.4	4.9	13.6	18.0	25.3	32.0	42.2	46.5	60.4	68.2	23.4
Husband's Occupation											
Professional and Technical	-	-	33.9	33.0	55.6	30.6	69.9	51.1	80.0	75.0	34.6
Administrative and Managerial	-	17.8	21.9	48.7	64.0	45.4	100.0	100.0	-	100.0	48.0
Clerical and Related	-	3.3	31.3	77.9	94.8	80.2	100.0	100.0	100.0	100.0	44.1
Sales Workers	-	2.1	11.4	19.3		25.6	44.7	43.6	57.6	76.6	25.1
Social Service Workers	-	9.5	24.7	29.9	44.9	74.0	82.9	69.3	100.0		35.9
Agriculture and Related	7.3	4.5	12.1	16.2	21.7	29.4	38.4	44.2	58.7	64.8	21.6
Production and Transport	3.3	11.1	19.8	27.1	43.1	63.8	63.7	76.9	71.6	100.0	38.0
Husband's Education											
Illiterate	7.3	4.9	11.8	14.3	24.8	29.1	37.6	42.4	57.2	67.8	22.2
Non-formal	22.8	6.7	20.1	26.1	22.6	31.6	52.2	63.3	50.5	74.8	28.4
Primary (1-6)	3.2	4.2	15.9	24.7	18.9	44.7	57.6	60.1	81.7	65.3	24.3
Junior Secondary (7-8)	2.4	5.0	21.4	40.0	40.4	45.0	48.3	18.0	82.1	49.5	27.7
Senior Secondary and above	3.1	5.4	19.9	33.0	48.7	58.5	87.3	93.8	86.6	83.1	30.6
Total	7.1	4.9	14.2	18.2	25.4	32.1	42.4	46.8	60.9	68.2	23.7

percent of rural, 47.5 percent of Addis Ababa and 42.8 percent of women in other urban areas reported themselves as wanting no more children. The proportion also decreases with increasing age at first marriage and increases with age, duration of marriage and number of living children.

Furthermore, the desire to have no more children among educated women was the highest (35.0 percent) for those women with educational level of senior secondary and above followed by women with primary education (about 33.0 percent), while the lowest proportion was reported by the illiterate women. There is also great variation in fertility preference between ethnic groups: 32.0 percent of Amara women want no more children while the proportion was 6.5 for the Hadiya women. The data revealed that the proportion for women in the remaining ethnic groups lies between these two extremes.

As regards to religion, 30.1 percent of the Orthodox Christian, 18.3 percent of the Muslim, 16.9 percent of followers of Traditional Religion, 16.6 percent of Protestant and 9.1 percent of Catholic women want to cease childbearing. With respect to women's work status, 26.0 percent of working women and 21.0 percent of non working women wanted no more children. On the other hand, when husband's work status is considered 40.0 percent of women whose husband had no work and 23.4 percent whose husband had worked wanted no more children.

It is to be also noted here that 42.5 percent of women engaged in professional and technical jobs, 12.3 percent in administrative and managerial, 38.0 percent in clerical and related, 22.5 percent in sales work, 49.1 percent in social service work, 26.0 percent of women engaged in agriculture and related activities and 22.8 percent of women working in production and transport sector wanted no more children. Similarly, 34.6 percent of women whose husbands are engaged in professional and technical jobs, about half of those in administrative and managerial, 44.1 percent in clerical and related activities, 25.1 percent in sales work, 35.9 percent in social service work, 21.6 percent in agriculture and related work and 38.0 percent in production and transport activities stated that they wanted no more children than what they have currently.

The proportion of women wanting no more children increases with rising educational attainment of their husband. As can be seen from the data, except for the women with non-formal education group which show 28.4 percent, the proportion rises from 22.2 percent for the illiterates to 30.6 percent for those women who are married to husbands having an educational level of senior secondary and above.

8.4. Differentials in Mean Additional Number of Children Wanted

Data in Table 8.3 present the mean additional number of children wanted by currently married fecund women according to background variables. Generally, the mean additional number of

Table 8.3 Mean Additional Number of Children Wanted by Currently Married Fecund

Women. Number of Living Children (Including Current Pregnancy)

and Background Variables. 1990 FFS

Background Variables	Number of Living Children											
	0	1	2	3	4	5	6	7	8	9	10+	Total
Place of residence												
Rural	4.7	3.8	2.9	2.5	1.8	1.3	0.9	0.8	0.4	0.2	0.1	2.3
Urban	3.3	2.8	1.8	1.0	0.5	0.6	0.2	0.3	0.6	0.1	-	1.2
Addis Ababa	3.3	2.6	1.4	1.1	0.5	0.6	0.2	0.4	0.1	-	-	1.0
Other Urban	3.4	2.9	2.0	1.0	0.5	0.6	0.2	0.3	0.9	0.2	-	1.2
Current age												
<25	4.4	3.7	3.1	2.5	1.9	-	3.5	-	-	-	-	3.4
25-34	5.2	3.6	2.5	2.2	1.8	1.3	0.9	0.8	0.5	-	-	2.0
35-44	5.9	4.2	2.6	2.3	1.2	1.1	0.8	0.7	0.5	0.2	0.2	1.3
45-49	0.7	2.3	1.1	2.0	1.8	0.4	0.1	0.7	0.2	0.3	-	0.7
Age at 1st marriage												
<15	3.6	3.6	3.0	2.2	1.7	1.2	0.6	0.6	0.1	0.2	-	1.9
15-19	4.9	3.7	2.6	2.4	1.5	1.2	1.0	0.9	0.5	0.3	0.2	2.2
20-29	5.0	3.8	2.9	1.7	1.9	0.9	0.9	0.6	0.9	-	-	2.3
30+	-	6.9	1.2	2.0	-	-	-	-	-	-	-	4.1
Duration of marriage												
<10	4.5	3.7	3.0	2.3	1.8	1.1	0.9	-	-	-	-	3.3
10-19	6.4	3.7	2.5	2.3	1.7	1.3	1.1	0.9	0.7	-	-	1.8
20-29	3.1	2.6	2.4	1.9	1.0	0.9	0.6	0.6	0.4	0.3	0.2	0.9
30+	-	4.0	-	3.6	1.7	0.3	0.1	1.0	0.2	-	-	0.7
Education												
Illiterate	4.7	3.9	2.9	2.4	1.7	1.2	0.9	0.8	0.4	0.2	0.1	2.2
Non-formal	4.8	2.7	2.0	2.1	2.0	0.9	1.7	-	-	-	-	2.1
Primary (1-6)	3.3	3.2	2.0	1.4	0.8	0.5	0.2	0.7	1.0	-	-	1.9
Junior Secondary (7-8)	2.4	2.0	3.3	1.2	1.1	0.7	-	-	-	-	-	1.8
Senior Secondary and above	3.6	2.6	1.8	1.0	0.5	0.2	-	0.4	1.0	-	-	1.5

Table 8.3 (cont.d)

Background Variables	Number of Living Children											Total
	0	1	2	3	4	5	6	7	8	9	10+	
Ethnicity												
Amara	3.1	2.8	1.8	1.2	0.9	1.1	0.3	0.6	–	0.2	–	1.4
Oromo	4.9	3.6	2.9	2.2	1.7	1.0	0.7	0.7	0.3	0.2	0.2	2.1
Kembata	4.9	3.8	4.0	4.0	2.7	–	1.3	–	–	–	–	3.1
Welayta	4.8	4.0	2.6	1.9	1.3	0.6	0.4	0.6	0.2	–	–	2.0
Sidama	5.1	4.0	3.7	2.9	2.3	1.9	1.0	0.8	–	–	–	2.7
Gurage	5.2	4.9	4.3	3.5	2.8	1.9	1.5	1.3	1.6	0.3	–	3.1
Gedeo	8.2	6.0	4.2	4.6	2.0	2.2	2.9	1.5	1.1	2.0	0.2	3.7
Hadiya	6.3	3.9	5.1	3.9	3.1	2.8	1.4	–	–	–	–	3.2
Religion												
All Christians	4.3	3.4	2.4	1.8	1.3	1.1	0.7	0.4	0.3	0.1	–	1.8
Orthodox	4.0	3.3	2.3	1.5	1.1	1.0	0.5	0.4	0.3	0.1	–	1.7
Protestant	4.9	3.8	2.9	3.1	2.3	1.5	1.1	0.7	0.3	–	–	2.5
Catholic	5.8	4.6	2.9	1.5	4.0	2.4	3.9	–	–	–	–	3.1
Muslim	4.6	4.2	3.3	3.1	2.3	1.3	0.9	1.2	1.1	0.4	0.4	2.6
Traditional Rligion	5.5	4.8	4.4	3.8	1.5	1.3	2.4	2.5	1.2	–	–	3.3
Work Status												
Not working	4.9	4.0	3.0	2.7	1.9	1.3	1.1	0.8	0.5	0.2	0.1	2.4
Working	4.3	3.5	2.6	2.0	1.5	1.1	0.6	0.7	0.4	0.2	0.2	2.0
Occupation												
Professional and Technical	–	3.3	2.4	0.2	0.6	0.2	–	–	–	–	–	1.4
Administrative and Managerial	2.0	3.0	–	1.0	–	–	–	–	–	–	–	2.1
Clerical and Related	4.9	1.3	1.5	2.2	–	0.3	–	–	1.0	–	–	1.3
Sales Workers	5.4	3.8	2.9	2.8	2.3	1.2	0.4	0.7	0.5	–	–	2.4
Social Service Workers	–	0.7	3.2	1.2	0.5	1.0	–	–	–	–	–	1.4
Agriculture and Related	4.1	3.6	2.5	1.9	1.3	1.1	0.7	0.7	0.3	0.3	0.2	1.9
Production and Transport	4.1	3.1	4.2	1.5	2.0	0.9	1.1	–	1.0	–	–	2.2

Table 8.3 (Cont'd)

Background Variables	Number of Living Children											
	0	1	2	3	4	5	6	7	8	9	10+	Total
Husband's work Status												
Not working	2.9	2.7	2.0	0.7	0.6	–	0.1	–	–	–	–	1.3
Working	4.6	3.7	2.8	2.3	1.6	1.2	0.8	0.8	0.4	0.2	0.1	2.1
Husband's Occupation												
Professional and Technical	5.2	2.6	1.1	1.7	0.5	0.7	–	1.1	0.2	–	–	1.6
Administrative and Managerial	3.0	2.5	1.3	0.4	0.5	1.1	–	–	–	–	–	0.9
Clerical and Related	2.4	2.4	2.3	0.4	–	0.2	–	–	–	–	–	1.5
Sales Workers	4.6	4.2	2.4	1.8	1.0	1.1	0.7	0.5	1.1	0.4	–	2.1
Social Service Workers	4.1	2.2	1.6	1.6	1.3	0.6	–	0.3	–	–	–	1.5
Agriculture and Related	4.6	3.9	3.0	2.5	1.8	1.3	0.9	0.8	0.4	0.3	0.1	2.2
Production and Transport	4.3	3.1	2.5	1.6	0.9	0.4	0.3	0.4	0.8	–	–	1.6
Husband's Education												
Illiterate	4.5	3.9	3.0	2.6	1.6	1.3	0.9	0.9	0.4	0.3	0.1	2.1
Non-formal	3.5	3.8	2.4	1.4	1.9	1.5	0.7	0.3	1.1	–	–	1.9
Primary (1-6)	5.0	3.8	2.7	2.0	2.0	0.8	0.5	0.6	0.3	–	–	2.3
Junior Secondary (7-8)	5.2	3.1	3.1	1.4	1.0	0.6	2.2	0.5	–	–	–	2.2
Senior Secondary and above	4.4	2.7	2.1	1.1	1.3	0.7	–	0.1	0.1	–	–	1.8
Total	4.54	3.70	2.76	2.28	1.64	1.17	0.82	0.75	0.43	0.22	0.10	2.10

children wanted declines as the number of living children increases. For instance, the average number of children desired by women who have no child was about 4.5 and it gradually decreases to 0.1 for those women who have 10 or more children.

There is a difference of about one child in the mean additional number of children wanted between rural and urban women. The data reveal that rural women would like to have 2.3 more children while urban women want 1.2. The respective figure is about one child for Addis Ababa and 1.2 children for other urban areas. Differences are obeserved in mean additional number of children wanted by age group, age at first marriage and duration of marriage categories. The data reveal that the association is negative with current age of women and duration of marriage and it is positive with age at first marriage. Among educational categories women who had higher level of education desire lesser number of additional children compared to those with lower level of education. On the other hand, among the ethnic groups the Gedeo's wanted 3.7 additional children followed by Kembata and Gurage (3.1 each). The lowest mean additional number of children wanted was reported by the Amara ethnic group (1.4). With regard to religion the highest mean number of additional children wanted was recorded for followers of traditional religion (3.3) followed by the Catholic women (3.1), while the lowest was reported by the Orthodox Christian women (1.7).

Regarding the work status of women respondents the non working

group wanted 2.4 additional children while working women wanted 2 children. But, when the work status of their husband is considered those women whose husband have no work wanted 1.3 children while those whose husbands are working wanted 2.1 children.

The mean additional number of children wanted by the occupation of women was highest for sales workers (2.4 children) and lowest for clerical and related (1.3 children) workers. The second higher mean number of children wanted was observed for production and transport workers (2.2 children) followed by administrative and managerial (2.1 children); agriculture and related (1.9 children); professional and technical; and social service workers (1.4 children). Whereas differentials in the mean additional number of children wanted according to husband's occupation indicated higher mean for agriculture and related workers (2.2 children). This is followed by sales workers (2.1 children); professional and technical (1.6 children); production and transport (1.6 children); social service; clerical workers (1.5 children each); and administrative and managerial (0.9 children).

Likewise, differentials in mean additional number of children wanted is also observed between husband's educational attainment. It can be observed that the mean additional number of children wanted is 2.1 for women married to illiterate husbands, 1.9 for women married to husbands having non-formal education and 2.3 for women married to husbands who have primary level education. The average decreases to 1.8 children for women married to husband who

have an educational level of senior secondary and above.

8.5. Desired Time for the Next Child

Women who desired to have more children were asked how long they wanted to delay their next child. The data on Table 8.4 show the proportion of currently married fecund women who want additional children and how soon the next child is wanted by number of living children. The data indicate the motivation of women to space child birth. In general, 27.4 percent of the women like to have the next child as soon as possible or within one year, 15.4 percent want in the second year and 34.4 percent want in the third year or later. About 23.0 percent of the women could not give the desired time for the birth of their next child.

The desired timing to have the next child generally depends on the number of living children. For instance, the proportion of women who have no living child and who want their next child as soon as possible is 43.6 percent and it gradually decreases to 9.3 percent for women who have 3-4 children. Similarly, the proportion of women with no living child and who want their next child in the third year or later is 8.4 percent and this proportion becomes 39.0 percent for those women who have 3-4 living child.

8.6. Total Number of Children Desired

The question used to measure the total number of children

Table 8.4 percentage Distribution of Currently Married Fecund Women Who Want Additional Child by Number of Living Children and How Soon the Next Child is Wanted (Including Current Pregnancy). 1990 FFS

How Soon the Next Child is Wanted	Number of Living Children				
	0	1-2	3-4	5+	Total
As soon as possible	43.6	16.9	9.3	9.4	15.2
In the next year	17.5	11.6	12.1	11.4	12.2
In the 2nd years	8.5	15.6	16.6	16.0	15.4
In the 3rd years	6.0	17.0	18.1	19.7	17.0
In more than 3 years	2.4	18.9	20.9	15.5	17.4
Whenever it happens	15.4	11.9	14.9	18.6	14.6
Do not know	6.6	8.0	7.9	9.1	8.1
Not stated	–	0.1	0.2	0.3	0.1
Total	100.0	100.0	100.0	100.0	100.0
Number	219.118	967,113	812,590	531,969	2,530,789

desired was "If you could choose exactly the number of children to have in your life how many would that be?". The data generated in response to this question are presented in Table 8.5. The data in the table provide the distribution of women according to total number of children desired by number of living children. Almost three fifths of the women were unable to respond to the question because they believed that the total number of children they desire could only be decided by the fate of God. The data also revealed that 13.8 percent of women expressed their desire to have a total of four children. 6.6 percent of women desired a total of six

Table 8.5   Percentage Distribution of Women According to Total Number of

Children Desired by Number of Living Children. 1990 FFS

Number of Living Children	Number of Children Desired												Total	Number of Women
	0	1	2	3	4	5	6	7	8	9	10+	Up to God		
0	0.8	0.7	7.7	3.5	20.4	5.3	7.2	1.1	2.5	0.2	2.3	48.3	100.0	1,502,642
1	0.4	0.6	4.2	3.7	17.9	5.2	7.5	1.4	2.7	0.3	3.6	52.7	100.0	741,510
2	0.3	0.3	2.2	1.3	13.2	4.0	7.5	2.2	2.4	0.5	4.5	61.5	100.0	814,018
3	0.2	0.4	1.5	1.1	9.3	3.9	6.7	2.7	4.6	0.4	5.4	63.7	100.0	728,337
4	0.8	0.2	1.5	0.4	9.5	2.1	6.2	2.4	4.8	0.8	4.2	67.2	100.0	728,959
5	0.8	0.1	0.7	0.5	9.1	3.0	4.6	2.0	5.2	0.6	4.9	68.4	100.0	570,284
6	0.4	-	1.6	0.5	8.6	1.0	5.6	0.9	5.6	1.0	7.0	67.9	100.0	394,477
7	-	0.1	0.9	0.5	9.4	1.2	3.6	1.9	3.2	1.5	9.0	68.7	100.0	239,566
8	0.2	-	-	0.2	11.6	1.9	7.0	-	6.0	-	6.5	66.6	100.0	131,533
9	-	-	0.9	-	9.3	2.0	7.4	-	2.1	-	9.5	68.8	100.0	65,967
10+	-	-	-	2.6	16.2	2.3	6.3	2.3	5.4	-	13.7	51.2	100.0	37,545
Total	0.5	0.4	3.3	1.8	13.8	3.7	6.6	1.7	3.6	0.5	4.4	59.5	100.0	5,954,838

children and 4.4 percent wanted ten or more. On the other hand, less than one percent (0.5%) of the women wanted to remain childless. On the whole, 34.3 percent of the women desired to have four or more living children while only about six percent desired to have less than four children.

It is to be also noted from Table 8.5 that the percentage of women who desire more children than the achieved number of living children decreases with the increase in number of living children. About 51.0 percent of the women who have no living child, 46.3 percent of the women who have one living child, ... etc. expressed to have more children than the number they have already achieved. On the other hand, only 6.5 percent of the women who have nine children would like to have more children than the number they have already achieved.

8.7. Preference for the Sex of the Next Child

Respondent's sex preference for the next child might be influenced by the achieved sex composition of the family. To examine this, all currently married fecund women who wanted additional children were asked about sex preference of their next child. The data collected with respect to this question was grouped into different combination of boys and girls and presented in Table 8.6.

Among the women who have all boys 70.2 percent preferred a

daughter. 21.8 percent were undecided and only 8.0 percent preferred another son. Similarly, larger proportion of women who have an excess of boys over girls also desired to give birth for a daughter. As shown in the table, among the women who have more boys 56.0 percent preferred a daughter, 14.0 percent wanted another son while 30.0 percent were undecided.

Table 8.6 Preferences for the Sex of the Next Child by Family
Composition Among Currently Married Fecund Women
Who Wanted Another Child. 1990 FFS

Family Sex	Preference for the Sex of Next Child			
Composition	Boy	Girl	Undecided	Total
All Boys	8.0	70.2	21.8	100.0
More Boys	13.7	55.9	30.3	100.0
All Girls	70.3	2.7	27.0	100.0
More Girls	79.1	3.1	17.8	100.0
Balance	38.1	22.2	39.7	100.0

Conversely, women who have all daughters or more daughters showed a strong preference to have a son. For example, among women who have only daughters 70.3 percent desired a boy, 2.7 percent wanted another daughter and 27.0 percent were undecided. And among women who have more daughters 79.1 percent desired a boy, 3.1 percent wanted another daughter and 17.8 percent did not state a specific preference of the sex of their next child. On the other hand, among women who have equal number of boys and girls 38.1 percent desire a son, 22.2 percent desire a daughter and 39.7

percent were undecided.

Therefore the above finding suggests that among women who have unequal number of boys and girls the general tendency of the preference was towards balanced sex composition, but among women who have equal number of boys and girls preference for son slightly dominated over the daughter.

CHAPTER IX

CHILD HEALTH CARE AND SURVIVAL

9.1 Introduction

In the 1990 Family and Fertility Survey (FFS) some detailed data were collected on child health/maternity care and childhood mortality. These data are expected to shed light not only on the adequacy (coverage) and quality of existing child health and maternity care services but also help in assessing early age (childhood) mortality situation in the population and identifying the sectors of the population at high health risk. By closing the gaps in the coverage (adequacy), by improving the quality of child health and maternity services and by providing services to the sectors of the population at high health risk, the government will be in a position to improve the health of the population in general and that of children and mothers in particular. These information, therefore, will provide valuable inputs to the formulation of appropriate health policies and programs on the part of the government. The data on child-health, maternity care and childhood mortality are presented in the following order. First comes the data on ante-natal and maternity care services followed by health indicators of children. Finally, data on levels and trends of infant/childhood mortality are presented.

9.2   Ante-natal and Maternity Care

9.2.1   Ante-natal Care

Mothers were first asked about ante-natal care and type of assistance received at delivery of births. The survival and well being of the child as well as the mother depends, to a great extent, on the quality and adequacy of health care services a mother receives during pregnancy and at time of delivery. Neo-natal tetanus is one of the major causes of neo-natal deaths in developing countries and Ethiopia is no exception to it. Deaths due to neo-natal tetanus could be prevented if mothers were subjected to tetanus toxoid vaccinations during pregnancy. And this vaccination is provided under routine immunization programs of the government. In FFS, mothers were asked whether they were given any injection to prevent the baby from getting tetanus, that is convulsions, when they were pregnant with their last (ultimate) and last but one child (penultimate). Information on tetanus vaccination were collected on last (ultimate) and last but one (penultimate) births. The resulting data will give us an idea of success of immunization programs of the government in the prevention of neo-natal tetanus by indicating its coverage. Although the reliability of this assessment depends, to a large degree, on the extent to which the respondent could distinguish tetanus toxoid vaccination from other injections she may have received during pregnancy. The chances of survival and well-being of the child, as mentioned earlier, also depend on the type of supervision/care received at the delivery of the baby. For ultimate (last birth) and penultimate births (last but one),

mothers were also asked if anyone assisted them with the delivery of the child. If they had received an assistance at delivery, they were further asked who provided the care.

Data in Table 9.1 indicate that for 17 percent of penultimate births and for 25 percent of ultimate births, the mothers received

Table 9.1 Among Penultimate and Ultimate Children, the Percentage of Mothers Receiving Tetanus Toxoid Injection, by Age of the Child, FFS 1990

Age of the Child	Number (weighted) of Children	% of Mother Receiving Tetanus
A. Penultimate		
Age: 1	59,431	22.5
2	359,329	22.8
3	730,776	20.0
4	697,948	16.1
5+	2,089,003	14.2
NS	–	–
Total	3,941,517	16.5
B. Ultimate		
Age: 0	1,155,173	28.8
1	971,824	27.7
2	802,795	27.2
3	474,535	27.2
4	236,224	19.4
5+	917,370	14.7
NS	–	–
Total	4,563,100	24.8

at least one tetanus toxoid injection. Examination of data on mother's receipt of tetanus toxoid vaccination and age of child shows an inverse relationship for both penultimate and ultimate child, possibly indicating an apparent increase in receipt of

tetanus toxoid by pregnant women over time. The finding of higher proportion of mothers of ultimate births receiving tetanus toxoid over those of mothers of penultimate births also indicate indirectly an increase in receipt of tetanus toxoid by women over time, assuming that the penultimate children are, on the whole, senior to ultimate children.

The variations in receipt of tetanus toxoid are also examined by selected background variables. These were examined only for ultimate births for sake of brevity. The results are presented in Table 9.2. The proportion receiving tetanus varies by age of mother. This is relatively higher among younger than among older mothers, indicating once again increase in receipt of tetanus toxoid over time. It may be observed that younger (less than 30 years) mothers received at least one tetanus toxoid injection for 28 percent of their ultimate births. The corresponding figure for relatively older mothers was 23 percent.

As expected, there shows a positive relationship between level of education of mothers and receipt of tetanus toxoid. In other-words, the proportion of mothers receiving tetanus increases with their level of education. For example, illiterate mothers received tetanus toxoid for only 22 percent of their ultimate births. The corresponding figures were 41.0, 54.5, 61.0 and 68.5 percent for mothers with primary, junior secondary, senior secondary and higher education respectively. It shows that mothers with senior secondary and higher education are three times more likely to receive tetanus toxoid than the illiterate mothers for their ultimate births. This

Table 9.2   Among Ultimate (last) Births the Percentages of
Mothers Receiving Tetanus Toxoid Injection,
by Selected Background Variables,
FFS 1990

Background variables	Number (weighted) of Ultimate Births	% of mothers Receiving Tetanus
Age of mother		
<30 years	1,873,851	27.8
30-49 years	2,689,249	22.7
Education of Mother		
Illitirate	4,155,551	21.6
Non-formal	46,686	41.0
Primary	207,579	54.5
Junior secondary	56,491	61.0
Senior secondary and higher	96,794	68.5
Work Status of mother		
Currently not working	1,717,615	25.4
Currently working	2,845,485	24.1
Religion		
Christian	2,948,863	25.7
Muslim	1,311,704	24.5
Place of Residence		
Rural	4,014,951	20.4
Urban	548,149	56.7
Addis Ababa	200,840	59.5
Other urban	347,309	55.1
Total	4,563,100	24.8

could be attributed to greater awareness of the educated mothers in the prevention of neonatal tetanus.

There is almost no differential in the proportion receiving tetanus injection by work status of the mother. However, births (ultimate) to urban women, particularly women of capital city, Addis Ababa, are three times more likely to receive tetanus injection (60.0 percent) than births (ultimate) to rural women (20.0 percent). This is expected in view of the fact that the facilities for tetanus toxoid vaccination are higher in urban, particularly in the capital city, than in rural areas. This is partly because of higher concentration of health care units and service providers in the former than in the latter. This is true for all countries characterized by urban biased development approach.

9.2.2 Maternity Care

Table 9.3 presents data on type of assistance received by mothers at delivery of penultimate and ultimate births. It shows that two-thirds of births (68 percent of penultimate and 65 percent of ultimate) are delivered by relatives/friends while about one-fifth of births (19 percent of penultimate and 20 percent of ultimate) are delivered by mid-wives. Medical supervision of deliveries are very low. Only five percent of penultimate and seven percent of ultimate births were assisted at delivery by a doctor. Furthermore, the proportion of women without any type of

Table 9.3   Percent Distribution of Penultimate and Ultimate Children by Age and

Type of Assistance Received by Mothers During Delivery,. FFS 1990

Age of Child	Type of Assistance Received During Delivery							Number (Weighted) of Children
	Doctor	Community Health Agent	Mid-Wife	Relatives and Friends	None	Others	Not Stated	
Penultimate								
1	7.2	-	24.6	59.7	8.1	-	0.4	59.431
2	5.8	0.8	20.2	66.3	6.3	0.2	0.3	359,329
3	3.3	0.7	21.8	66.7	7.0	0.3	0.1	730,776
4	3.4	0.9	16.7	71.1	7.7	0.1	0.1	697,948
5+	5.4	0.8	18.5	67.5	7.2	0.3	0.2	3,941,517
Ultimate								
0	4.8	0.9	21.4	64.8	7.8	0.2	0.1	1,156,173
1	5.3	0.8	19.8	66.3	7.4	0.4	-	971,824
2	5.2	1.1	17.7	68.1	7.5	0.4	-	802,795
3	9.6	1.5	19.3	61.2	7.5	0.4	0.5	474,535
4	10.6	0.5	19.5	63.2	5.9	0.2	0.2	236,224
5+	9.6	1.1	18.8	62.2	7.7	0.4	0.1	917,370
Total	6.8	1.0	19.6	64.7	7.5	0.3	0.1	4,563,100

assistance at delivery is as high as 7 percent for penultimate and 8 percent for ultimate births.

We have also examined types of assistance received at delivery by selected background variables for ultimate births and these are presented in Table 9.4. There are almost no differentials by age of mother in the type of assistance received at delivery of

Table 9.4 Percent Distribution of Ultimate Births and Type of Assistance
Received by Mothers During Delivery by Selected Background
Variables, PFS 1990.

Back ground variables	Type of assistance received during delivery							Number (weighted) of Ultimate children
	Doctor	Community Health Agent	Mid-Wife	Relatives and Friends	None	Others	Not Stated	
Age of Mother								
<30	6.9	1.1	18.9	65.9	6.6	0.5	0.1	1,873,851
30-49	6.6	0.9	20.0	64.0	8.1	0.3	0.1	2,689,249
Education of Mother								
Illiterte	3.4	0.7	20.1	67.3	8.0	0.3	0.1	4,155,551
Non-formal	12.3	5.6	17.0	62.0	2.5	-	0.5	46,686
Primary	30.9	2.6	16.1	47.9	2.2	0.1	0.2	207,579
Junior secondary	51.4	1.7	18.5	24.1	4.0	0.4	-	56,491
Senior secondary and higher	68.7	5.3	8.2	15.5	1.3	0.7	0.2	96,794
Work Status of Mother								
Currently Working	5.7	0.8	13.6	73.1	6.4	0.4	0.0	2,845,485
Currently not working	8.4	1.3	29.5	51.0	9.3	0.3	0.2	1,717,615
Place of Residence								
Rural	2.7	0.5	19.2	68.9	8.3	0.3	0.1	4,014,951
Urban	36.4	4.3	21.9	34.7	2.0	0.4	0.3	548,149
Addis Ababa	51.7	6.8	15.0	24.0	0.9	0.8	0.8	200,840
Other Urban	27.5	2.8	25.9	41.0	2.7	0.1	0.0	347,309
Religion								
Christian	9.0	1.2	2.0	70.1	7.5	0.1	0.1	2,948,863
Muslim	3.1	0.7	39.5	50.1	5.8	0.5	0.3	1,311,704
Total	6.8	1.0	19.6	64.7	7.5	0.3	0.1	4,563,100

ultimate births. However, the type of assistance received at delivery varies by educational level and place of residence of respondents.

Better educated women and urban women, particularly women in Addis Ababa are more likely to obtain assistance at delivery from a doctor than are other women. This is also borne out by the data. For example, the proportion of births (ultimate) assisted at delivery by a doctor rises from a mere 3.0 percent for women with no education to 31.0, 51.0 and 69.0 percent for women with primary, junior secondary and senior secondary and higher level education respectively. Conversely, the proportion of births (ultimate) attended at delivery by a relative/ friend is higher among lower educated than among higher educated women. For example, 67.0 percent of ultimate births to women with no education were assisted at delivery by a friend/relative. The corresponding proportion among women with primary, junior secondary and senior secondary and higher level education were 48.0, 24.0 and 16.0 percent respectively. In other-words, the proportion of births to women with no education who are assisted at delivery by a relative/friend is 4 times higher than it is for births to women who completed senior secondary and higher level education. Conversely, the proportion of births to women with senior secondary and higher level education who are assisted at delivery by a doctor is about 20 times higher that it is for births to women with no education.

As expected, the proportion of births assisted at delivery by a doctor is higher in urban areas particularly in Addis Ababa, while the proportion of births assisted at delivery by a friend/relative is higher in rural areas. Only three percent of births (ultimate) to rural women, compared with 36 percent of births to urban women and 52 percent of births to women in Addis Ababa were assisted at delivery by a doctor. On the other-hand, about sixty-nine percent of births to rural women, compared with 35 percent of births to urban women were assisted at delivery by a friend/relative.

That the majority of births (ultimate) are attended at delivery by a relative/friend also holds for working and non-working women and for Christians and Muslims except for the fact that the currently non-working women and Muslim women received relatively higher assistance at delivery from a mid-wife than the working and Christian women.

The finding clearly suggests that the majority of pregnant women, particularly rural pregnant women, depend on the assistance of non-medical personnel at delivery. This overwhelming dependence on non-medical supervision of deliveries is one of the major factors responsible for prevailing high infant mortality in Ethiopia, particularly in rural areas.

9.3   Child Health Indicators

Respondents in 1990 FFS were asked questions on the coverage of immunizations and the prevalence of diarrhoea among surviving penultimate and ultimate children.   On the basis of responses to these questions health status of children, particularly those of penultimate and ultimate children, were assessed and these responses formed the basis of analyses of the present section of the chapter.

9.3.1   Immunization of Children.

The data on immunization coverage were restricted to penultimate and ultimate children still alive at the time of the survey.   The reason for excluding the dead children from the estimate of immunization coverage is due to the fact that childhood death usually takes place at a very early age, their inclusion would bias downwards the results, because many such children died before they had any chance of immunization.

Mothers of surviving penultimate and ultimate children were asked if their children had health cards.   If the answer was 'yes' to the above question, the interviewer would ask for physical verification of health cards. If the health card was available, the interviewer then copied from the card the dates on which the child had received immunizations against the following diseases: tuberculosis (BCG); diphtheria, whooping cough (pertussis) and tetanus (DPT); polio and measles.   In the event that the child had

no card or the interviewer failed to physically verify the card, the mother was then asked whether the child ever had a vaccination to prevent him/her from getting diseases? No information on specific vaccinations were collected for these children because of possible response bias that may arise from mother's recall lapse and also she may not be aware of the different types of vaccinations, due to her lack of knowledge about immunization program in general.

It may be observed from Table 9.5 that health cards were seen for only 4 percent of penultimate and 13 percent of ultimate children and mothers reported for an additional 22 percent of penultimate and 23 percent of ultimate children had at least one immunization but couldn't produce a card. It indicates that about 26 percent of penultimate children and 36 percent of ultimate children have received some immunization. The proportion of children received some immunization is higher for ultimate than penultimate children and this holds even when age of the child is controlled. The finding of higher immunization coverage of ultimate children over those of penultimate children probably indicates increase in coverage of immunization over time, assuming that the ultimate children, in general, are younger than the penultimate children. That the coverage of immunization has increased over time could be also verified by the finding of higher proportion of children receiving some vaccination at younger than older ages. And this holds for both penultimate and ultimate children.

Table 9.5 Among All Surviving Children, the Percentage with Health
Cards Seen by Interviewer and the Percentage Who are
Immunized as Recorded on a Health Card or as Reported
by the Mother, FFS 1990.

Age of Children	Among all Surviving Penultimate/Ultimate Children,Percent with			Number of all Surviving Children (weighted)
	Health card seen	Mother reports child immunization	Total Number of children recorded some immunization	
Penultimate Children				
1	22.8	18.7	41.5	33,243
2	8.0	27.9	35.9	244,545
3	6.6	24.8	31.5	554,369
4	5.4	20.7	26.1	537,837
5+	2.0	20.0	22.0	1,623,861
Not Stated	-	-	-	1,704
Total	4.2	21.7	25.9	2,995,558
Ultimate Children				
0	15.8	12.5	28.3	1,063,082
1	20.9	23.5	44.4	892,354
2	13.7	26.9	40.6	760,087
3	8.8	34.2	43.0	426,336
4	7.9	31.9	39.8	204,945
5+	1.9	23.4	25.3	768,574
Not Stated	-	-	-	2,351
Total	12.8	22.8	35.6	4,117,726

Table 9.6 and Figure 9.1 show that among surviving penultimate
children for whom health cards were available, 96 percent have
received a BCG vaccination, 69 percent have received three doses of

FIGURE 9.1

Immunization Coverage of Penultimate Children with Health Cards, FFS 1990
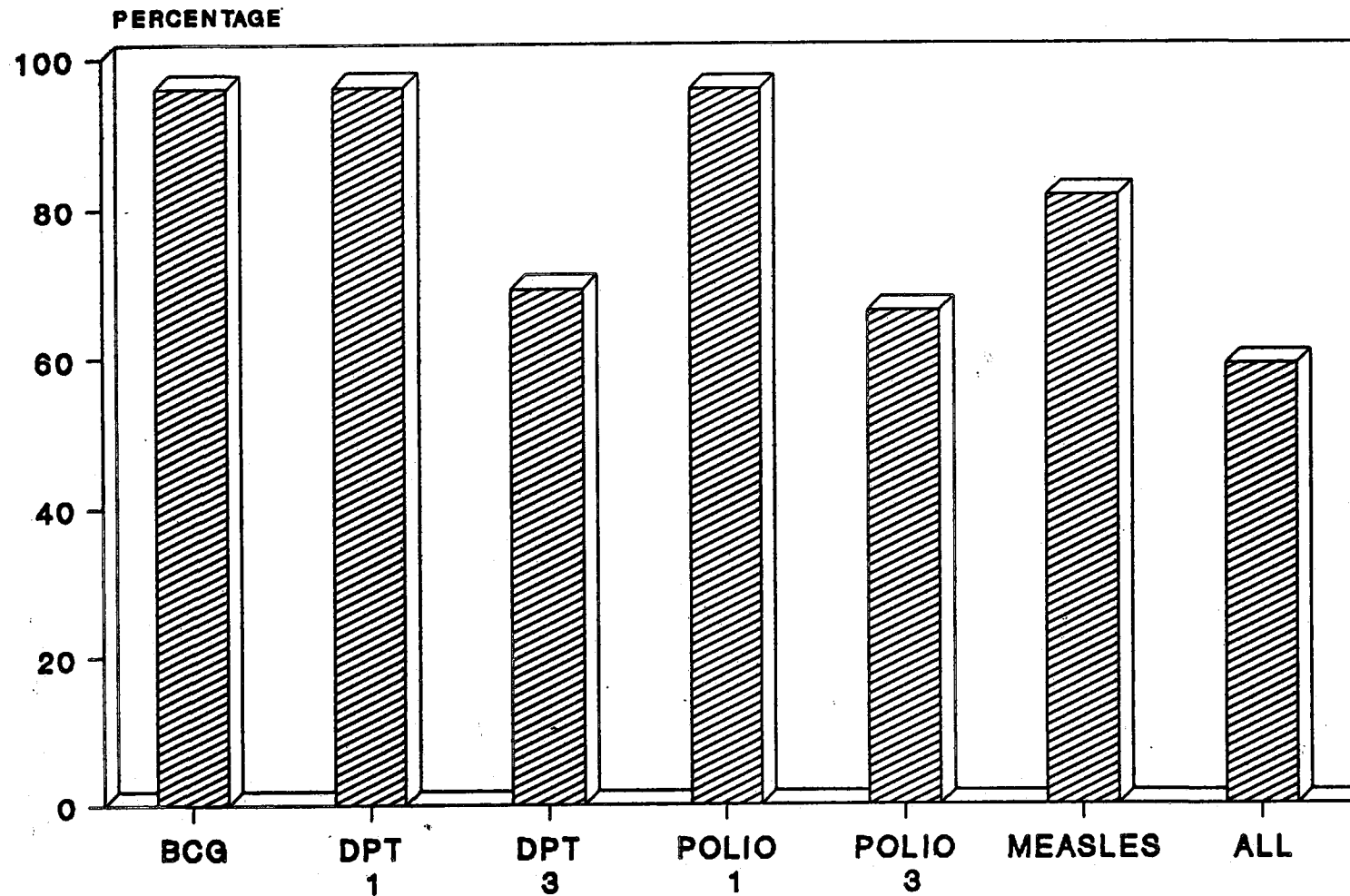
Table 9.6   Among All Surviving Children with Health Cards the Percentage for Whom
BCG, DPT, Polio, and Measle Immunizations* are Recorded on the
Health Card by Age of the Child, FFS 1990.

Age of Children	Among all Surviving Penultimate/Ultimate Children with health card seen the percentage who have received									Number of all Surviving Children (weighted)
	BCG	DPT			polio			Measles	All immunizations*	
		1	2	3	1	2	3			
PENULTIMATE CHILDREN										
1	95.7	92.6	87.7	61.9	92.3	87.7	61.9	78.7	65.80	33,243
2	87.9	95.4	80.6	59.8	94.3	61.7	57.8	74.9	51.9	244,545
3	100.0	100.0	82.7	76.3	100.0	83.9	71.9	76.3	64.4	554,369
4	100.0	100.0	76.7	71.7	99.3	74.3	71.7	88.2	55.9	537,837
5+	92.9	90.9	72.0	66.9	89.5	69.0	61.6	87.2	58.9	1,623,861
Not Stated	-	-	-	-	-	-	-	-	-	1,704
Total	96.0	96.2	78.6	69.2	95.8	74.4	66.2	81.6	59.1	2,995,558
ULTIMATE CHILDREN										
0	99.9	91.6	58.0	38.4	94.9	59.9	38.8	19.1	10.0	1,063,082
1	95.6	96.7	66.0	53.9	96.0	65.4	52.7	74.8	41.5	892,354
2	94.6	95.2	71.1	52.3	92.3	68.3	50.8	75.5	44.0	760,087
3	93.5	96.6	82.5	63.6	92.1	78.3	61.1	73.8	54.4	426,336
4	98.3	89.5	82.1	82.1	89.5	82.1	82.1	61.6	61.6	204,945
5+	80.4	89.6	73.5	73.5	86.3	68.7	67.1	80.7	62.7	768,574
Not Stated	-	-	-	-	-	-	-	-	-	2,351
Total	96.3	94.3	66.3	50.8	94.2	65.7	49.8	56.8	34.0	4,117,726

* BCG, at least 3 doses of DPT and polio, and Measles.

FIGURE 9.2

Immunization Coverage of Ultimate Children with Health Cards, FFS 1990

DPT vaccine, 66 percent have received three doses of polio vaccine and 82 percent have received vaccine against measles. The proportion of surviving ultimate children receiving a BCG vaccine, three doses of DPT and polio were 96, 51, and 50 percent respectively. The proportion of surviving ultimate children receiving vaccine against measles was 57 percent (see Table 9.6 and Figure 9.2). Overall, 59 percent of penultimate and 34 percent of ultimate children with health cards have been fully immunized against vaccine preventable diseases. The higher coverage of penultimate children compared with ultimate children may be attributed to the fact that some of the ultimate children are still too young to be expected to have received all immunizations.

The data in Table 9.6 further show that a considerable drop-off between the proportion of children who receive the first dose of either DPT or polio and the proportion who go on to get the second and third doses. For example, among surviving penultimate children for whom health cards were available, 96 percent received first dose of DPT and polio vaccines while 69 percent and 66 percent continued on to receive third dose of DPT and polio respectively. The attrition rate from 1st dose to third dose turns out to be 28 and 31 percent for DPT and polio respectively. A similar type of drop off is also noticed among the ultimate children. The attrition rate is higher among the ultimate than among the penultimate children and this holds even when age of the child is controlled. It should be noted here that the proportion received all immunizations varies by age groups, although the

differences are not very large. The coverage of immunization (i.e., the proportion received all immunizations), in general, tends to increase with age of the child; particularly for the ultimate children. But for the penultimate children, there shows no clear relationship between age and coverage of immunization (see Table 9.6).

The variations in immunization coverage by background variables are also examined and the results are presented in Table 9.7. However for the sake of brevity, the analysis is confined to only surviving ultimate children. The data in the table show relatively higher immunization coverage for boys than girls, although the differences are not large. About 37 percent of boys and 31 percent of girls with health cards have been fully immunized against vaccine preventable diseases. Also fewer girls than boys complete the full course of DPT and Polio vaccines, although their starting position was the same.

The children with health cards seen is relatively higher for younger than older mothers. However, the proportion of children with health cards fully immunized against vaccine preventable diseases is higher for older than younger mothers. About 43 percent of children of older mothers with health cards have been fully immunized as against 26 percent of children of younger mothers with health cards. Also a higher proportion of children of older than younger mothers receive full doses of DPT and Polio vaccines. The difference in immunization coverage of children of

Table 9.7 Among All Surviving Ultimate (last births) Children. the Percentage with Health Cards Seen by Interviewer. the Percentage Who are Immunized as Recorded on a Health Card or as Reported by the Mother. and. Among Children with Health Cards. the Percentage for Whom BCG. DPT. Polio. and Measle Immunizations are Recorded on the Health Card by Some Background Variables. Ethiopia. FFS 1990.

Status of Child	Among all Surviving Ultimate Children, Percent with			Among all Surviving Penultimate/Ultimate Children with health card seen the percentage who have received									Number of all Surviving Ultimate Children (weighted)
	Health card seen	Mother Reports Child Immunization	Total Number of Children Recorded Some Immunization	BCG	DPT 1	DPT 2	DPT 3	Polio 1	Polio 2	Polio 3	Measles	All immunizations [*]	
Sex of the Child													
Male	13.3	22.8	36.1	96.6	94.3	69.5	54.4	93.8	68.6	53.0	57.0	36.9	2,069,117
Female	12.2	22.7	34.9	96.0	94.4	62.8	46.8	94.6	62.6	46.2	56.7	30.8	2,048,609
Age of Mother													
<30	15.8	22.8	38.6	95.8	92.9	63.3	45.6	92.8	63.6	43.8	50.7	25.3	1,728,571
30-49	10.6	22.7	33.3	96.8	95.9	69.6	56.3	95.7	68.0	56.2	63.5	42.4	2,389,155
Education of Mother													
Illiterate	11.8	20.2	32.0	96.2	94.6	64.5	49.0	94.2	64.8	47.6	57.0	32.8	3,739,676
Primary	21.6	43.4	64.9	96.6	94.0	83.7	67.0	95.2	81.3	70.3	66.0	45.5	189,252
Junior secondary	25.0	53.0	78.0	98.4	97.9	80.5	69.6	97.9	80.5	70.0	44.3	40.7	52,839
Senior secondary and higher	23.8	63.5	87.3	96.7	86.1	57.7	54.4	88.2	63.2	54.4	48.1	38.1	92,154
Non-formal education	21.6	35.6	57.2	96.2	100.0	30.4	30.4	100.0	30.4	24.2	48.4	24.2	43,796
Place of residence													
Rural	11.8	18.8	30.6	96.4	93.9	63.8	46.8	94.0	63.2	46.0	57.0	31.6	3,630,433
Urban	19.9	52.3	72.3	95.5	96.3	77.6	68.3	95.2	76.9	66.5	55.1	44.6	487,293
Addis Ababa	20.7	61.8	82.5	94.6	90.4	80.9	73.6	93.4	80.1	72.4	56.8	49.8	182,779
Other Urban	19.5	46.6	66.1	96.1	100.0	75.5	64.8	96.3	74.8	62.6	55.7	41.2	304,514
Total	12.8	22.8	35.6	96.3	94.3	66.3	50.8	94.2	65.7	49.8	56.8	34.0	4,117,726

[*] BCG. at least 3 doses of DPT and Polio. and Measles.

younger and older mothers may be attributed to the differences in age composition of children. The children of higher aged women are likely to be relatively older than the children of younger women. This could lead to higher immunization coverage of children of older women than children of younger women due to longer exposure of the former than the latter.

The proportion of children with health cards seen tends to increase with the rise of level of education of mothers, except that this proportion is slightly lower for the mothers with senior secondary and above than the mothers with junior secondary education. The proportion of children with health card seen is highest for the mothers with junior secondary education (25.0 percent) followed by mothers with senior secondary education and above (24.0 percent) while this was lowest for the mothers with no education (12 percent). Also the children of mothers with some formal education (primary and above) have greater propensity to receive the full doses of DPT and Polio vaccines than are the children of illiterate mothers. Consistent with this finding, we also observe that the proportion of children with health cards fully immunized is lower among women with no formal aducation, compared with any other group of women with some formal education.

The proportion of children (ultimate) with health cards seen is higher in urban than rural areas. This is found to be highest in Addis Ababa followed by other urban centers. A higher proportion of children are immunized in urban areas particularly in

Addis Ababa than in rural areas. The proportion of children with health cards fully immunized are 31.6, 44.6 and 49.8 in rural, urban and Addis Ababa respectively. It is to be also observed here that although about the same proportion of rural children as urban children receive the first few immunizations, far few of them go on to receive the remaining doses. It indicates a grater discontinuity of rural than urban children in the receipt of either DPT or Polio vaccine from the 1st dose to the last dose.

We have also made an attempt to provide an estimate of coverage of immunization for all ultimate and penultimate children, including those whose cards were not verified. This was obtained by multiplying the proportion of children with particular immunizations recorded on health cards by the proportion of children whose health cards were checked. This yields an estimate of 4.4 percent[1] of ultimate children who are fully immunized. The corresponding estimate for penultimate children was 2.5 percent. This could be considered, at best, a minimum estimate of coverage, since the method under consideration assumes all children without cards have not received any immunization.

9.3.2 Diarrhoea.

The data on diarrhoea episode were collected for penultimate and ultimate children by asking mothers whether these children have

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[1] This was obtained by multiplying the 34.0 percent of ultimate children with health cards fully immunized by the 12.8 percent whose health cards were verified.

had diarrhoea in the 24 hours before the interview. The responses
to the above question were provided in Table 9.8. The data in the
table indicate that 4 percent of penultimate and 9 percent of
ultimate children have had diarrhoea in the last 24 hours before

Table 9.8   Percentage (weighted) of Penultimate/Ultimate Children
Having a Diarrhoea Episode within Last 24 Hours by
Age of the Child, FFS 1990

Age of the Child	Number of Children (weighted)	% Having Diarrhoea in Last 24 Hours
A. Penultimate		
1	33,243	16.8
2	244,545	8.6
3	554,369	5.4
4	537,837	3.7
5+	1,623,861	1.9
Not stated	1,704	—
Total	2,995,558	3.6
B. Ultimate		
0	1,063,082	11.6
1	892,354	11.0
2	760,087	9.3
3	426,334	8.3
4	204,945	6.1
5+	768,574	2.0
Not Stated	2,351	—
Total	4,117,727	8.6

the interview. Diarrhoea prevalence is highest among children under 1 year and 1 year old. And this holds for both penultimate and ultimate children.

Data on prevalence of diarrhoea were also examined by selected background variables for ultimate birth and these are presented in Table 9.9. It may he observed that the prevalence of diarrhoea is

Table 9.9 Percentage (weighted) of Ultimate Children (Last Births) Having a Diarrhoea Episode within Last 24 Hours by Some Background Variables, FFS 1990

Background Characteristics	Number of Children (weighted)	Prevalence % Having Diarrhea in Last 24 Hours
Sex of Child		
Male	2,069,117	9.3
Female	2,048,609	8.0
Education of Respondent		
Illiterate	3,739,676	8.9
Non-formal	43,796	4.4
Primary	189,262	5.9
Junior Secondary & above	144,993	6.0
Work Status of Mother		
Currently working	2,561,767	8.3
Currently Not-working	1,555,959	9.2
Place of Residence		
Rural	3,630,433	9.3
Urban	487,293	3.5
Addis Ababa	182,779	3.8
Other urban	304,514	3.4
Religion		
Christian	2,664,169	7.6
Muslim	1,181,219	10.0

about three times higher among rural children than urban children and about two times higher among children of illiterate mothers than mothers with primary education and somewhat higher among children of Muslim than children of Christian mothers. Differences in the prevalence of diarrhoea by sex of child and work status of mother are small.

9.4 Infant/Childhood Mortality

In this section of the chapter an assessment is made of infant/child mortality by utilizing birth history data collected in the FFS. Birth history data collected in this survey, included detailed information on each live birth occurred to women aged 15-49. This include information on sex of the child, month and year of birth, survival status of the child, and age at death in days, months and years of dead children. On the basis of these information level and trends of infant and child mortality rates were ascertained.

The mortality measures employed here are as follows:

Neo-natal mortality -   the number of deaths of infants under 1 month of age during a year per 1000 live births.

Infant mortality ($_1q_0$) -the probability of dying before the age of one year.

Under 5 mortality ($_5q_0$) - the probability of dying before the age of five years.

Before these rates are presented, readers should be reminded of some limitations of the estimates of infant and child mortality derived using survey data. These are as follows: First, most mortality estimates using survey data are based on relatively fewer number of cases, this could lead to unreliable estimates particularly when level of mortality is low. One way to overcome this problem is to calculate the rate for five or ten years. And this is also followed here. Second, mortality data based on birth history are collected through retrospective reports. This method of data collection can lead to under-reporting of events and misplacement of dates of births and deaths due to recall lapse. However, this problem of recall lapse is less serious for the data collected for the time periods close to the survey date. Third, estimates of mortality trends using birth histories, at a given point in time, suffer from truncation bias. This is because estimates of mortality in the past are based on those births reported by women aged 15-49 who were interviewed at the time of the survey and therefore births in the past given by women aged 50 years and above at the time of the survey were excluded. The error due to truncation bias increases progressively with the time period covered goes further in the past. To minimize the effect of this bias, analysis of trend in infant/child mortality from FFS is confined to a period not exceeding 20 years preceding the survey.

9.4.1 Infant/Child Mortality Trends

Table 9.10 and Figure 9.3 depict infant mortality trends by

Table 9.10   Infant Death/ Mortality Rates by tears of Birth Under Various Methods, 1990 FFS

Year of Birth	Infant Death Rate A	Infant Mortality Rate B	C
1971	193.93	179.96	178.78
1972	153.42	169.04	179.10
1973	191.72	193.75	186.76
1974	150.38	149.56	164.66
1975	160.22	166.01	161.70
1076	120.19	130.21	133.76
1977	141.80	126.52	141.34
1978	111.95	116.77	119.18
19790	144.44	165.82	133.37
1980	124.10	130.66	146.66
1981	152.84	129.32	144.82
1982	127.27	140.48	135.30
1983	115.31	123.77	115.92
1984	131.89	111.66	131.08
1985	109.88	117.90	108.79
1986	122.39	113.35	123.17
1987	102.43	105.37	105.46
1988	100.98	91.68	97.23
1989	98.36	94.09	94.06

$$* \frac{D_0}{B} \times 1000 \qquad **(\frac{D'_y + D''_{y+1}}{B_y}) \times 1000 \qquad ***(\frac{D'_y}{B_y} + \frac{D''_{y-1}}{B_{y-1}}) \times 1000$$

Where

D_0 = deaths of infant (under 1 year) during a year, B =live births during a year,

D'_y = babies born in a given year (B_y) who die before thier first birth day in the same year as the year of birth,

D''_{y+1}= babies born in a given year (B_y) who die in year y+1 i.e.,in the following year while moving towards its first birth day,
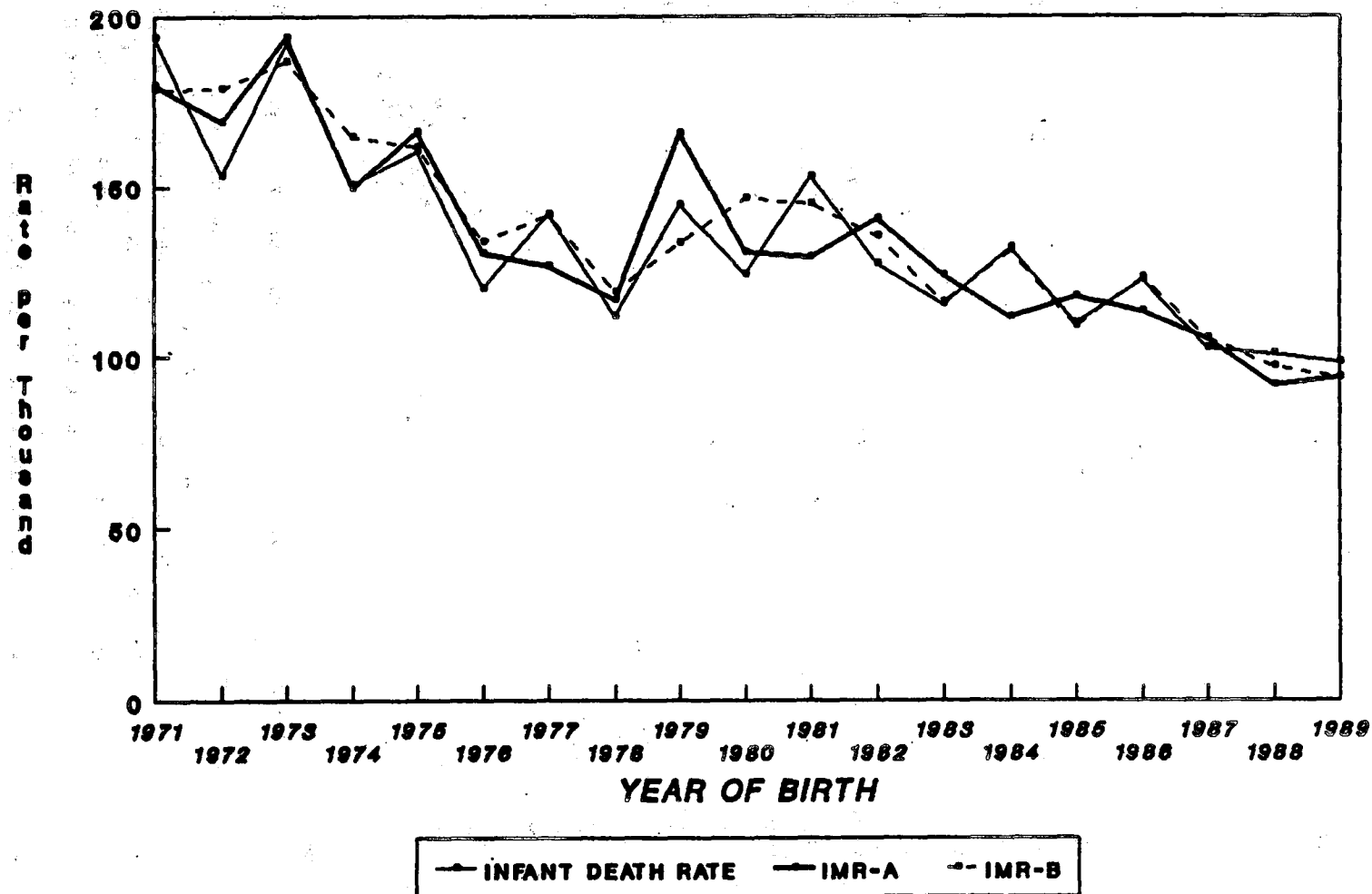
D'_y = the portion of deaths occuring to births in year y (B_y),

D''_y = the portion of deaths occuring to births of the previous year (B_{y-1})

Note : For details, see the section on Infant Mortality.

FIGURE 9.3

Infant Death/Mortality Rates by Year of Birth, Under Various Methods, 1990 FFS (Ethiopia)

year of birth based on birth history data (later to be referred as direct method). Infant mortality rates were calculated under three different methods: 1) A (conventional), (ii) B (Cohort) and iii) (C) (Periodic). Each of these methods is described below:

Method A: Infant death rate. This a conventional measure of infant mortality rate which is simply a ratio of infant deaths to births of the same year. This can be also defined as the number of infant deaths per year per 1000 live births during the year, which can be written as follows:

$$\frac{D_0}{B} 1000$$

where D_0 represents deaths of infants (under 1 year) during a year and B represents live births during the same year. However, this can not be considered as a true probability measure of infant mortality rate because not all of the infant deaths in a given year occurred to births in the same year, some occurred to births of the previous year. In other words infant death rate fails to match infant deaths to the proper cohort of births or the initial (true) population exposed to the risk of death. A true probability measure of infant mortality i.e., what is the chance that a new born child will die before it reaches its first birth day?, calls for aligning infant deaths to the same cohorts of births. These have been proposed under methods B and C.

Method B: Infant mortality rate under procedure B simply measures the proportion of a cohort of births dying before the first birth day (i.e., the proportion of one year's birth dying in infancy). It can be also defined as the probability of dying of a cohort of live births before reaching age one year. The cohort of births in a given year Y (B_Y) loses D'_Y members through death in year Y (i.e., some of the babies born in a given year who die before their first birth day in the same year as the year of birth (i.e., born and died in the same year)) and D''_{Y+1} members through death in year Y+1 (i.e., in the following year) while moving towards its first birth day. This can be written as follows:

$$(\frac{D'_y + D''_{y+1}}{B_Y}) 1000$$

It shows that the rate under this approach is derived by re-arranging parts of infant deaths of two calendar years. Although it (the rate) represents the complete experience of one cohort during infancy and corresponds exactly to the notion of infant mortality (q_0) in the life table, "it doesn't fit to the popular notion of a rate based on events of just one calendar year, and therefore is not fully conventional "(Barclay, 1958, pp. 133-143). The infant mortality rate that is both correct (i.e., provides a probabilistic measure) and based on events of a calendar year is given in method C.

Method C: Infant mortality rate under procedure C provides a rate based on yearly events by matching the infant deaths occurring in

a given year to the births of the appropriate year and cohort. The infant deaths that occur during a calendar year represent deaths among two annual cohorts of births. Procedure C calculates the rate by separating the deaths in numerator to match the two cohorts of births, which may be expressed as follows:

$$(\frac{D'_Y}{B_y} + \frac{D''_Y}{B_{Y-1}}) 1000$$

where D'_Y + D''_Y together constitute infant deaths in a year Y, D'_Y is the portion of infant death occurring to births in year Y (By) and D''_Y is the portion of infant deaths occurring to births of the previous year (B_{Y-1}).

The infant mortality rates obtained by direct method under any approach indicate an erratic trend over the years (see Table 9.10 and Figure 9.3). In the absence of any evidence to support this fluctuations it may be speculated that these could arise from sampling fluctuations resulting from small number of events coupled with omission and misplacement of events reported by women. These errors are likely to be more severe when the analysis is limited to single year. However, the single year data, in general, tend to indicate a gradual decline in infant mortality rate over the years in Ethiopia. And this declining trend in infant mortality holds irrespective of the method of estimate one employs (see Figure 9.3).

Table 9.11 and Figure 9.4 present infant mortality rates under various methods for a combined base period of four to five calendar years.   It may be observed that the infant mortality rate obtained

Table 9.11   Infant Death/Mortality Rates Under various Methods for a Combined Base Period of Five Years, 1990 FFS

Year of Birth	Infant Mortality Rates Under various methods		
	A^{*}	B^{**}	C^{***}
1971-74	169.2	173.1	177.4
1975-79	133.6	138.8	137.9
1980-84	129.5	127.0	134.8
1985-89	107.0	104.8	105.8

  * as   * in Table 9.10
 ** as ** in Table 9.10
*** as *** in Table 9.10

for the period 1985-89 under various methods almost coincide with each other.   It varies with a narrow range of 105 and 107, yielding an average rate of 105.8 for the period 1985-89.   However, if we take the average of the estimates provided by Cohort (B) and Period methods (C), the two most appropriate methods of calculating infant mortality rate, the rate turns out to be 105.5 for the period 1985-89.   For the same period, we have also derived an adjusted infant mortality rate by allowing for heaping of infant deaths at 12 months.   As noted in the chapter on Data Quality, there are apparent heaping of infant deaths at 12 months. Considering half of the deaths reported at age 12 months as infant deaths, we have derived an adjusted rate.   This turns out to be 111.5, taking the

FIGURE 9.4

Infant Death/Mortality Rate Under Various Methods for a Combined Base Period of Five years, 1990 FFS (ethiopia)

average of the rates derived under the two most appropriate methods ((Cohort (B) and Period (C) methods)) (see Table 9.12). We may therefore assume that infant mortality rate would be around 112 during the period 1985-89.

Table 9.12 Adjusted[1] Infant Death/Mortality Rates for the Combined Period of Five Years Preceding the Survey, 1990 FFS

Year of Birth	Infant Mortality Rates under Various Methods		
	A[*]	B[**]	C[***]
1985-89	114.2	110.2	112.8

adjusted for heaping

* as   * in Table 10.9
** as ** in Table 10.9
*** as *** in Table 10.9

The sustained decline in infant mortality rate is clearly evident when the rates are presented for a combined base period of four to five calendar years and this holds for each series of estimates (see Table 9.11 and Figure 9.4). Confining our analysis to the rate obtained under most appropriate methods (Methods B and C), we find this rate declining from over 170 during pre-revolution period (1971-74) to 105/106 during the five-year period preceding the survey (1985-89), a fall of 40 percent. The corresponding decline in infant mortality under the conventional approach (method A) was about 38 percent. This dramatic fall in infant mortality

rate over the last 19 years could be attributed to considerable improvement in the health services that took place during this period.

Infant mortality rate calculated indirectly, using information on proportion dead among children ever born by age of women, also shows decline from over 150 per 1,000 live births in the seventies to around 140 per 1,000 live births in the eighties (see Table 9.13).

Table 9.13   Indirect Estimation of Infant Mortality Rates Using Trussell Equation and Coale-Demney West Model Life Table, FFS 1990

Reference period		Estimated IMR
August	1988	140
July	1986	135
January	1984	142
March	1981	141
May	1978	157
May	1975	153

Consistent with the decline of infant mortality rate we also observe sustained decline in neo-natal mortality and under five mortality (see Table 9.14 and Figure 9.5) Neo-natal mortality declined by 29 percent from 66 per 1000 live births during 1975-79 to 47 per 1000 live births during the five year period preceding the survey (1985-89). The proportion of children dying before the age of five years, declined from 219 per 1000 among children born in 1975/79 to 200 per 1000 among those born in during the period 1980-84.

FIGURE 9.5

Trends in Infant and Child Mortality

Table 9.14 ✓ Neo-natal, Infant and Childhood Mortality for the Combined Period of Five Calendar Years Preceding the Survey, 1975-89, 1990 FFS

Year	Neo-natal Mortality Rate [*] (per 1000)	Infant Mortality Rate (q_0) [**] (per 1,000)	Under 5 Mortality Rate $_5q_0$ [***] (per 1,000)
1975-79	65.9	138.8	219.4
1980-84	57.4	127.0	199.5
1985-89	46.9	104.8	a

[*] Neo-natal mortality rate is defined as the number of deaths of infants under 1 month of age during a year per 1000 live births during the year.

[**] The probability of dying before the age of one year (cohort approach).

[***] The probability of dying before the age of five years.
a) Not computed because of incomplete exposure of children born in the last five years.

9.4.2 Infant Mortality Differentials

Table 9.15 and Figure 9.6 present infant mortality differentials by place of residence, sex of the child, education of mother, religion, work status, occupation, access to safe drinking water and availability of latrine, for the five year period (1985-89) preceding the survey.

As expected, infant mortality is higher for the rural population (105 per 1000) than for the urban population (94 per 1000). Infant mortality rate is higher for male (120 per 1000)

Table 9.15   Infant Mortality Rates[1] (Direct) by Background
              Characteristics of the Mother For the 5-year
              Period (1985-89) Preceding the Survey, 1990 FFS

Background Characteristics	Infant Mortality Rate ($_1q_0$) (1985-89)
Place of residence	
Rural	104.8
Urban	93.6
Sex of the child	
Male	119.84
Female	95.87
Education	
Illiterate	109.75
Primary Education	93.24
Junior Secondary	73.43
Senior Secondary & above	70.04
Work Status	
Not Currently Working	14.97
Currently Working	103.50
Occupation	
White Collar[2]	60.22
Blue Collar[3]	101.84
Agricultural	104.46
Access to Safe Drinking Water	
Has access to Safe Drinking Water[4]	104.32
Has No access to Safe Drinking Water	109.10
Access to Latrine	
Has access to flush	73.23
Has access to pit	108.94
Has no access (i.e., Open air)	108.82

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[1] Calculated on birth cohort basis (i.e., based on deaths occurring to those born during a certain period) as per procedures outlined in method B of Table 9.10. It is simply defined as the probability of dying of a cohort of life births before reaching age one year.

[2] White collar occupations include Professional, Technical and Related works; Administrative and Managerial works and Clerical works.

[3] Blue collar occupations include: Sales, Social Service, Production and Transport works.

[4] Has access to Tap and protected Spring/well water.

FIGURE 9.6

Infant Mortality Rates(Direct) by Background Characteristics
of the Mothers For the 5-year Period (1984-89)
Preceding the Survey, Ethiopia 1990

NOTE : ILL•ILLITERATE,PRY•PRIMARY,JS•JUNIOR SEC. SSA•SENIOR SEC. & ABOVE,NW•NON-WORKING,W•WORKING
WC•WHITE COLLAR,BC•BLUE COLLAR,AG•AGRI,USD•UNSAFE DRINK SD•SAFE DRINK,AF•ACC. FLASH,AP•ACC. PIT,OA•OPEN AIR

than for female children (96 per 1000). This is also consistent with the earlier findings (CSA, 1991).

Education, particularly mother's education, has been found to be an important predicator of infant mortality (Caldwell, 1989). This has been also supported by data collected in FFS of Ethiopia. Data clearly indicate an inverse relationship between infant mortality and mother's education. The higher the level of education of mothers, the lower the chances the child will die before reaching his/her first year of life. A child born to a mother with the highest level of education (i.e., senior secondary and above) has 36 percent less risk of dying before attaining first year of life than a child born to a mother with no education.

The data also reveal variation in infant mortality rates by work status of mother. It is higher for children of non-working than for children of working mothers (115 per 1000 vs. 104 per 1000).

Children whose mothers are engaged in white collar occupations have lower risk of dying before reaching their first birth day than those children whose mothers are engaged in agricultural and/or blue collar occupations.

It is also shown that the infant mortality rate is slightly lower for children who live in a household which has access to flush latrine (73 per 100) and safe drinking water (104 per 1000),

compared to those who live in a household without access to flush latrine (109 per 1000) and safe drinking water (109 per 1000).

An additional piece of information on high level of child mortality in Ethiopia can be found in Table 9.16 which provided information on mean number of children ever born, surviving and dead, and the proportion dead among children ever born by age of mother. The proportion dead accounted for 23 percent of all children born to women aged 15-49. The proportion dead increases with age of women.

Table 9.16 Mean number of children ever born, surviving, and dead, and proportion of children dead among those born, by age of women, 1990 FFS

Age	Mean Number of Children			Proportion Dead	Number (wieghted) Of women
	Ever Born	Surviving	Dead		
15-19	0.252	0.216	0.036	.143	1,237,721
20-24	1.669	1.393	0.276	.165	978,136
25-29	3.285	2.675	0.610	.186	979,623
30-34	4.883	3.843	1.04	.213	989,693
35-39	5.851	4.529	1.322	.226	814,243
40-44	6.615	4.824	1.791	.271	548,882
45-49	6.943	4.952	1.991	.287	406,540
Total	3.562	2.754	0.808	.227	5,954,838

CHAPTER X

SUMMARY AND CONCLUSIONS

This chapter reviews the major findings of the 1990 National Family and Fertility Survey. In addition, in conclusion it highlights major policy implications of the survey findings.

10.1 Summary of the Major Findings

The National Family and Fertility Survey (NFFS) was conducted from May to July 1990, covering a sample of 8757 women aged 15-49 years. The survey was intended to provide estimates for Addis Ababa, other urban, all urban and rural areas, separately. Thus, a sample of 1551 women in Addis Ababa, 1293 women in other urban areas, 5913 women in rural areas were interviewed during the survey which included: The household questionnaire; Socio-economic characteristics of the household questionnaire; woman's questionnaire; husband's questionnaire; community leader's questionnaire; and community questionnaire. The purpose of the survey was to provide planners and policy makers with data concerning nuptiality patterns, fertility levels and differentials, fertility preferences, patterns of breastfeeding, contraceptive knowledge, use and unmet needs, and maternal and child health.

The study revealed that in Ethiopia marriage is universal and begins at an early age. Over four fifths (82.4 percent) of the women in the age group 15-49 years had entered into marital union.

Most of the first marriages took place before the women attained the age of 18 years (75.5 percent). This holds true for women in rural areas (75.8 percent) as well as those in urban (73.9 percent) areas. The mean age at first marriage for women was found to be 15.6 years for the country as well as for urban and rural areas. Among the women in age group 15-49 about 14.0 percent are in polygynous union. The prevalence of polygyny is substantially higher (15.2 percent) in rural than in urban (6.8 percent) areas.

The survey result indicated that in Ethiopia childbearing begins at early ages. As a result, the proportion of women who became mothers under age 20 years was observed to be about three-fifths in rural (63 percent) as well as the urban (57 percent) areas. Consequently, the fertility level is high with a total fertility rate (TFR) of 7.7 children per woman for the country. That is, women are having an average of nearly eight births by the time they reached the end of their childbearing age. The level of fertility is significantly lower in urban (TFR of 5.8) areas compared to rural (TFR of 8.0) areas of the country. The data also revealed that the maximum fertility occurs at the age group 25-29 years. It seems that since the 1984 census, there has been little change in the overall fertility level for the country and the rural areas. On the other hand, fertility level showed some decline in urban areas.

An analysis of fertility differential compared on the basis of standardised mean parity indicated that fertility is negatively

associated with age at first marriage and positively associated with duration of marriage. Moreover, fertility differential was not very significant between polygynously and monogamously married women. The data also showed inverse relationship between education and mean number of children ever born. Likewise, compared to rural areas fertility level is lower in urban areas. With regard to religion, fertility level was found to be highest among followers of traditional religion and low among the Catholic Christians.

Fertility differentials examined based on the women's occupation showed that the highest among women engaged in agriculture and related activities and low for those engaged in administrative and managerial jobs. In addition, the standardised mean parity was found to be highest among migrant women whose childhood residence was in rural areas and low for migrant women who grew up in large urban centers.

From the survey result, breastfeeding practices were found to be universal in Ethiopia. About 97 percent of the ever married women had breastfed their last child. This is observed to be higher among rural women, illiterate women, women in the age group 40-49 years.

The reasons for high fertility in Ethiopia are that marriage is early and universal as indicated earlier and very low level of contraceptive use. Although, the survey result indicated that 62.7 percent of women reported to know at least one contraceptive

method, only 7.5 percent have ever used a method, with only 3.9 percent are currently using. Prevalence of contraceptive method is even lower among currently married women, with 4.8 percent of married women currently using. Knowledge of at least one method, ever use and current use have a strong positive relationship with women's education. For instance, the proportion currently married non-pregnant women using contraceptive method rises from 2.7 percent among those with no formal education to 19.1, 37.8 and 56.8 percent with primary, junior secondary, senior secondary and university/higher level. Contraceptive use is higher among urban women, particularly among women in Addis Ababa.

The survey result revealed that among all currently married pregnant or fecund women 64.6 percent desired additional children, 24 percent wanted no more. Moreover, the proportion of women wanting no more children increases with the number of living children. Further, the data showed that women in urban areas desire less children than their counterparts in rural areas. Similarly, the desire to have no more children decreases with increasing educational level.

On the other hand, the mean additional number of children wanted declines as the number of living children increases. For instance, women who have no child desired 4.5, while those who have 10 or more living children desired to have only about 0.1 additional children.

Further, all women were asked about the ideal number of children they would like to have in their life time and the response revealed that 34.3 percent of all women desired to have four or more living children, while only about six percent desired to have less than four children.

Further examination of the data on sex preference of children reflect that women who have not an equal number of boys and girls generally preferred a balanced sex composition, but among women who have an equal number of boys and girls, women who prefer to have sons dominates those who prefer to have doughters.

Concerning the health of mothers and infants, the survey result indicated that for about 17 percent of ultimate births, mothers received at least one tetanus toxoid injection. Among the ultimate births receipt of tetanus toxoid injection varys by age and background variables. It is higher for younger mothers, that is 28 percent of births for mother under 30 years of age and 23 percent for those mothers aged 30-49. The survey revealed that illiterate mothers received tetanus toxoid for only 22 percent of their ultimate births, the corresponding figures were 41.0, 55.0, 61.0 and 69.0 for mothers with primary, junior secondary and senior secondary and above education, respectively. Moreover, rural mothers received tetanus toxoid injection for one-fifth of their ultimate births, and the corresponding figure for urban mothers is about 57 percent.

Concerning maternity care, about two-thirds of penultimate and one-fifth of the ultimate births were delivered by the assistance of relatives and mid-wives, respectively. On the other hand, only five percent of the penultimate and seven percent of the ultimate births were assisted by a doctor at delivery. The data regarding the type of assistance received at delivery by background variables indicate that there is no variation by age of mothers. However, as one expects ultimate births who were assisted by a doctor at delivery is positively related with the educational level of mothers. That is, the proportion of ultimate births that received the assistance of a doctor at delivery was only three percent to illiterate mothers and the corresponding figures are 31.0, 51.0 and 64.0 percent for mothers with primary, junior secondary and senior secondary and above education, respectively. The assistance received at delivery by a doctor is higher for mothers in urban compared to those in rural areas, for working compared to non-working mothers and for mothers following Christian religion compared to those following Muslim religion.

In the survey, immunization coverage were restricted only to surviving penultimate and ultimate children and the results indicate that 26 percent of the penultimate and 36 percent of the ultimate children received some immunization. This implies increase of immunization coverage over time. Coverage of immunization is positively related with the educational level of mothers. It is also higher for the children of mothers in urban areas compared to those in rural areas.

The data on prevalence of diarrhoea among children revealed that four percent of the penultimate and seven percent of ultimate children have had diarrhoea. The prevalence of diarrhoea was higher among children who were under one year and for those who were one year old and this holds for both penultimate and ultimate children. It is also higher among rural than urban children, higher among children of illiterate mothers compared to those with primary school and some what higher for children of Muslim compared to Christian mothers.

The survey result indicated a high level of infant and child mortality rate. For the period 1985-89, the infant mortality rate was 105 per 1000 live births and child mortality rate was about 200 per 1000 children aged under five. Infant mortality rate was higher in rural compared to urban areas, the rate is negatively related with educational level of mothers. That is, children born by illiterate mothers encounter higher risk of infant mortality (108.0) and the corresponding rate for children born to mothers with secondary and higher level of education is only 70.0 per 1000 live births. Also children of mothers in white collar occupation has relatively lower infant mortality rate (60.0) followed by blue collar (102.0) and agricultural occupation (105.0). The rate is also found to be slightly lower to households with access to safe water compared to those with no access to safe water and it is also lower to households with flush toilet facilities than those with either pit toilet or with no access to toilet facilities.

10.2   Conclusions and Policy Implications

The survey result revealed the prevalence of all the necessary pre-conditions for the fertility level to be high in Ethiopia. These pre-conditions include: the population is predominantly rural and are engaged in agricultural and related occupations; female age at first marriage is low and that marriage is universal; infant and child mortality rates are high; illitracy is very high and the proportion of population who have attained even primary level of education is very low. Moreover, the proportion of ever married women who have some knowledge about contraceptive methods is relatively low (62.7 percent) and the proportion of those who ever used any method of contraceptives and those who are currently using contraceptive methods are even lower with 7.5 percent and 4 percent, respectively.   If one considers the current use of contraceptive method by residence, the survey result revealed that only about 2 percent and 14.7 percent of rural and urban women, respectively were current contraceptive users. Among the current contraceptive users the survey result indicated that nearly half (46 percent) in rural areas and about a third (32 percent) in urban areas were using traditional contraceptive methods that are not very effective.

Under these circumstances, the most practical option is to make the necessary efforts to foster small family size norms. These efforts could be achieved by creating conditions to increase the level of contraceptive use in order to effectively reduce the

high fertility level that prevails in the country and thereby halting its deterrent effect on socio-economic development of the country. The first step in this respect is the introduction of a nation wide information, education and communication programmes to promote small family sizes and use of family planning services. The need for the information, education and communication programmes is indicated by the proportion of women who have some knowledge about any family planning method. As shown earlier, only about 63 percent of women aged 15-49 reported to have any such knowledge. Similarly, there is a need for making family planning methods more widely available. This is borne out by the fact that only four percent of women in the age group 15-49 were practicing contraceptive methods. The fact that many of those who were current users of family planning methods were users of traditional methods further emphasises the urgency for making modern family planning methods more widely available.

The survey results indicate that many mothers do not receive the necessary health assistance they need at delivery. Similarly, many children were also observed not to have received immunization and neither have many of their mothers received vaccinations while they were pregnant. Thus, it is necessary that these facilities be made available for all mothers and children.

Finally, in order to monitor trends in fertility levels and in the use of family planning services, it is important that surveys like the 1990 Family and Fertility Survey be carried-out at regular, preferably five year, intervals.

APPENDIX I

Estimation Procedures of Parameters

A. Estimation of Ratios

Ratios and their sampling errors for 26 variables related to women from the FFs are considered to be of major interest. The results are presented for the whole sampled part of the country and for four domains namely, Addis Ababa, other urban, all urban (Addis Ababa + other urban) and rural. The list of variables is presented in Annex Table 1 and the list of sampling errors for the country and different domains are presented in Annex Tables 2A to 2E.

Estimate of ratio for any of the variables is given by:

$$r = \frac{Y}{X}$$

Where y and x are weighted aggregates over the whole sample or over a given domain. The aggregates are computed using the following procedure.

Let m_h = Number of PSUs selected from stratum h

m_h' = Number of PSUs covered in stratum h

S_{hiH} = Number of households selected from PSU i stratum h

I_{hiH} = Number of households interviewed from PSU i stratum h

S_{hiW} = Number of women selected from PSU i stratum h

I_{hiW} = Number of women interviewed from PSU i stratum h

HH = The 1989 estimate of total number of households in

a given domain

hh = Predetermined sample number of households in a given domain

W_b = $\dfrac{HH}{hh}$, Basic weight for a domain

W_{hi} = $W_b \dfrac{m_h\ S_{hiH}\ S_{hiW}}{m_h'\ I_{hiH}\ I_{hiW}}$, Adjusted weight

Y_{hij} = The value of variable Y for individual j in PSU i stratum h

Y_{hi} = $W_{hi} \sum_j Y_{hij}$; j varies from 1 to I_{hiW}

= The weighted sum of all values Y_{hij} for all units in PSU i stratum h

Y_h = $\sum_{i=1}^{m_h'} Y_{hi}$

= The sum of values of stratum h

Y = $\sum_{h=1}^{H} Y_h$

= The sum over the whole sample (or a domain)

For 'other urban' domain where the sample design is three stage the adjusted weight, W_{hi} is further adjusted by applying the ratio n/n' to it where:-

n = Number of urban areas selected for the survey

n' = Number of urban areas covered by the survey

Similar terms are defined for the variable x.

B. Estimation of Sampling error

The variance of r is computed using the formula given below:

$$Var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} [\frac{m_h'}{m_{h-1}'} \sum_{i=1}^{m_h'} (Z_{hi}^2 - \frac{Z_h^2}{m_h'})]$$

in which $Z_{hi} = Y_{hi} - rx_{hi}$ and $Z_h = Y_h - rx_h$

Where x_{hi} =   The weighted sum of number of women in PSU i

stratum h

f   =   Overall sampling fraction

The remaining notations are as defined above

The standard error of r, SE, is the square root of the variance; i.e., $SE(r) = \sqrt{var(r)}$.

Design effect, (DEFT) of r is estimated by taking the ratio of the standard error of the estimate under the actual design to the one that would result under simple random sample.

$$DEFT = \frac{SE(r)}{SR(r)}$$

Where SR(r)   = standard error of r assuming the design was simple random sample

Relative error of r is estimated:

$$Rel(r) = \frac{SE(r)}{r}$$

Finally the 95 percent confidence interval of r is given by:

(r - 2SE(r), r + 2SE(r))

APPENDIX   Table   1

List of selected variables from FFS with sampling errors,

Ethiopia, 1990.

Variables	Type	Description	Population
X217A	Proportion	Can Read	All women 15-49
X218A	Proportion	Can Write	All women 15-49
X301A	Proportion	Ever married	All women 15-49
X302	Proportion	Currently married	All women 15-49
X305A	Proportion	In polygynous union	All women 15-49
Q408	Mean	Number of children ever born	All women 15-49
CHDEAD	Mean	Number of children dead	All women 15-49
NLC	Mean	Number of children surviving	All women 15-49
Q431	Proportion	Currently pregnant	All women 15-49
X604A	Proportion	Ever heard method	All women 15-49
X606A	Proportion	Ever used method	All women 15-49
X618A	Proportion	Currently using any method	All women 15-49
X619A	Proportion	Currently using modern method	All women 15-49
X619B	Proportion	Currently using traditional method	All women 15-49
X622	Proportion	Knowing Source of family planning	All women 15-49
X704B	Proportion	Want no more children	All women 15-49
X707A	Proportion	Want next child after 2+ years	All women 15-49
X505P	Proportion	Given tetanus shots to pen. child	All women 15-49
X506P	Proportion	Attended by doctor/nurse/midwife (penultimate child)	All women 15-49
M510P	Mean	Month of breastfeeding (pen. child)	All women 15-49
M514P	Mean	Months of Amenorrhoea (pen. child)	All women 15-49
M516P	Mean	Months of postpartum abstinence (pen. child)	All women 15-49
BCGU	Proportion	With BCG immunization on card (pen. child)	All women 15-49
DPT1U	Proportion	With DPT1 immunization on card (pen. child)	All women 15-49
POL1U	Proportion	With POLIO immunization on card (pen. child)	All women 15-49
MEASU	Proportion	With MEASLES immunization on card (pen. child)	All women 15-49

APPENDIX   Table 2A

Sampling errors for the total women population,

Ethiopia, 1990.

Variable	Value	Standard error	Design effect	Rela-tive error	Confidece limits	
					R-2SE	R+2SE
X217A	0.172	0.006	1.530	0.036	0.160	0.185
X218A	0.165	0.006	1.527	0.037	0.153	0.177
X301A	0.824	0.006	1.521	0.008	0.812	0.837
X302	0.716	0.007	1.521	0.010	0.701	0.730
X305A	0.103	0.005	1.591	0.050	0.093	0.113
Q408	3.562	0.038	1.139	0.011	3.487	3.637
CHDEAD	0.808	0.021	1.531	0.026	0.765	0.850
NLC	2.754	0.026	1.009	0.010	2.702	2.807
X431	0.098	0.004	1.305	0.042	0.090	0.106
X604A	0.627	0.010	1.979	0.016	0.606	0.647
X606A	0.075	0.005	1.826	0.068	0.065	0.086
X618A	0.039	0.004	1.718	0.091	0.032	0.047
X619A	0.024	0.003	1.710	0.117	0.018	0.029
X619B	0.016	0.001	1.055	0.089	0.013	0.019
X622	0.019	0.003	1.771	0.136	0.014	0.024
X704B	0.156	0.005	1.276	0.032	0.146	0.166
X707A	0.211	0.006	1.280	0.026	0.200	0.223
X505P	0.112	0.006	1.667	0.050	0.100	0.123
X506P	0.037	0.003	1.525	0.083	0.031	0.043
M510P	14.098	0.256	1.518	0.018	13.586	14.610
M514P	10.458	0.225	1.549	0.022	10.008	10.909
M516P	3.077	0.132	1.322	0.043	2.813	3.341
BCGU	0.085	0.005	1.744	0.061	0.075	0.096
DPT1U	0.083	0.005	1.760	0.062	0.073	0.094
POL1U	0.083	0.005	1.748	0.062	0.073	0.094
MEASU	0.050	0.004	1.575	0.073	0.043	0.058

APPENDIX   Table 2B
Sampling errors for Addis Ababa women population, Ethiopia, 1990.

Variable	Value	Standard error	Design effect	Rela-tive error	Confidece limits R-2SE	R+2SE
X217A	0.336	0.015	1.278	0.046	0.305	0.367
X218A	0.330	0.015	1.298	0.047	0.299	0.361
X301A	0.570	0.012	0.924	0.020	0.547	0.594
X302	0.399	0.013	1.071	0.033	0.372	0.425
X305A	0.016	0.003	0.950	0.188	0.010	0.022
Q408	2.212	0.075	1.080	0.034	2.061	2.362
CHDEAD	0.255	0.018	1.055	0.073	0.218	0.292
NLC	1.957	0.066	1.074	0.034	1.825	2.089
X431	0.028	0.004	0.935	0.139	0.020	0.036
X604A	0.981	0.004	1.210	0.004	0.973	0.989
X606A	0.302	0.014	1.227	0.047	0.273	0.330
X618A	0.175	0.010	1.068	0.059	0.154	0.195
X619A	0.102	0.008	1.083	0.081	0.086	0.119
X619B	0.072	0.007	1.027	0.093	0.059	0.086
X622	0.074	0.007	1.039	0.093	0.061	0.088
X704B	0.170	0.012	1.308	0.073	0.145	0.195
X707A	0.081	0.007	1.026	0.088	0.067	0.095
X505P	0.247	0.011	1.029	0.046	0.225	0.270
X506P	0.219	0.010	0.980	0.047	0.199	0.240
M510P	7.839	0.387	1.139	0.049	7.066	8.612
M514P	5.280	0.416	1.387	0.079	4.448	6.112
M516P	3.086	0.326	0.988	0.106	2.433	3.739
BCGU	0.099	0.008	0.993	0.076	0.084	0.115
DPT1U	0.095	0.008	1.030	0.081	0.080	0.110
POL1U	0.098	0.008	1.031	0.079	0.083	0.114
MEASU	0.060	0.006	1.023	0.103	0.047	0.072

APPENDIX   Table 2C

Sampling errors for Other Urban women population,
Ethiopia, 1990.

Variable	Value	Standard error	Design effect	Relative error	Confidece limits R-2SE	R+2SE
X217A	0.382	0.019	1.386	0.049	0.344	0.419
X218A	0.374	0.020	1.457	0.052	0.334	0.413
X301A	0.682	0.017	1.280	0.024	0.649	0.715
X302	0.489	0.015	1.080	0.031	0.459	0.519
X305A	0.041	0.008	1.437	0.192	0.025	0.057
Q408	2.841	0.073	0.847	0.026	2.696	2.986
CHDEAD	0.524	0.032	1.120	0.062	0.460	0.589
NLC	2.317	0.062	0.877	0.027	2.192	2.441
X431	0.055	0.006	0.957	0.111	0.043	0.067
X604A	0.906	0.018	2.240	0.020	0.869	0.942
X606A	0.236	0.017	1.429	0.072	0.202	0.269
X618A	0.128	0.013	1.384	0.100	0.103	0.154
X619A	0.092	0.009	1.102	0.096	0.075	0.110
X619B	0.036	0.007	1.276	0.183	0.023	0.049
X622	0.074	0.010	1.352	0.133	0.054	0.093
X704B	0.186	0.014	1.305	0.076	0.158	0.214
X707A	0.107	0.011	1.261	0.101	0.086	0.129
X505P	0.252	0.016	1.344	0.064	0.220	0.284
X506P	0.125	0.014	1.496	0.110	0.098	0.153
M510P	9.852	0.427	1.133	0.043	8.998	10.706
M514P	6.678	0.400	1.283	0.060	5.877	7.479
M516P	2.901	0.402	1.416	0.138	2.098	3.704
BCGU	0.105	0.009	1.075	0.087	0.086	0.123
DPT1U	0.109	0.009	1.061	0.084	0.090	0.127
POL1U	0.105	0.009	1.114	0.091	0.086	0.124
MEASU	0.061	0.006	0.970	0.106	0.048	0.073

APPENDIX   Table 2D

Sampling errors for All Urban women population,
Ethiopia, 1990.

Variable	Value	Standard error	Design effect	Rela-tive error	Confidece limits R-2SE	R+2SE
X217A	0.363	0.013	1.441	0.036	0.337	0.389
X218A	0.356	0.013	1.494	0.038	0.329	0.383
X301A	0.638	0.012	1.285	0.018	0.614	0.661
X302	0.453	0.011	1.158	0.024	0.432	0.475
X305A	0.031	0.005	1.507	0.157	0.022	0.041
Q408	2.590	0.052	0.938	0.020	2.486	2.695
CHDEAD	0.417	0.021	1.189	0.050	0.376	0.458
NLC	2.173	0.045	0.965	0.021	2.083	2.264
X431	0.044	0.004	1.067	0.093	0.036	0.052
X604A	0.936	0.011	2.419	0.012	0.913	0.958
X606A	0.262	0.012	1.429	0.045	0.238	0.285
X618A	0.147	0.009	1.324	0.060	0.129	0.164
X619A	0.096	0.006	1.138	0.065	0.084	0.109
X619B	0.051	0.005	1.170	0.095	0.041	0.060
X622	0.074	0.007	1.329	0.088	0.061	0.087
X704B	0.180	0.010	1.370	0.055	0.160	0.199
X707A	0.097	0.007	1.304	0.075	0.082	0.111
X505P	0.250	0.011	1.326	0.043	0.229	0.272
X506P	0.163	0.009	1.325	0.056	0.144	0.181
M510P	9.037	0.298	1.180	0.033	8.441	9.634
M514P	6.117	0.301	1.400	0.049	5.515	6.719
M516P	2.975	0.274	1.280	0.092	2.427	3.522
BCGU	0.103	0.006	1.103	0.061	0.090	0.115
DPT1U	0.103	0.006	1.111	0.061	0.091	0.116
POL1U	0.102	0.007	1.146	0.064	0.089	0.115
MEASU	0.060	0.005	1.028	0.076	0.051	0.069

APPENDIX   Table 2E

Sampling errors for Rural women population,

Ethiopia, 1990.

Variable	Value	Standard error	Design effect	Rela-tive error	Confidece limits	
					R-2SE	R+2SE
X217A	0.138	0.007	1.502	0.049	0.125	0.152
X218A	0.131	0.007	1.503	0.050	0.118	0.144
X301A	0.858	0.007	1.579	0.008	0.843	0.872
X302	0.763	0.009	1.568	0.011	0.746	0.780
X305A	0.116	0.006	1.453	0.052	0.104	0.128
Q408	3.736	0.042	1.062	0.011	3.651	3.821
CHDEAD	0.878	0.025	1.424	0.028	0.828	0.927
NLC	2.859	0.029	0.928	0.010	2.801	2.917
X431	0.108	0.005	1.209	0.045	0.098	0.117
X604A	0.571	0.012	1.838	0.021	0.548	0.595
X606A	0.042	0.006	2.223	0.138	0.030	0.053
X618A	0.020	0.004	2.145	0.194	0.012	0.028
X619A	0.011	0.003	2.317	0.291	0.004	0.017
X619B	0.010	0.001	1.116	0.148	0.007	0.012
X622	0.009	0.003	2.294	0.310	0.003	0.015
X704B	0.151	0.006	1.194	0.037	0.140	0.162
X707A	0.232	0.007	1.186	0.028	0.219	0.245
X505P	0.087	0.006	1.731	0.073	0.074	0.099
X506P	0.014	0.003	2.082	0.225	0.008	0.021
M510P	15.056	0.298	1.422	0.020	14.461	15.652
M514P	11.246	0.260	1.446	0.023	10.725	11.766
M516P	3.095	0.148	1.273	0.048	2.800	3.391
BCGU	0.082	0.006	1.691	0.074	0.070	0.094
DPT1U	0.080	0.006	1.711	0.076	0.068	0.092
POL1U	0.080	0.006	1.696	0.075	0.068	0.092
MEASU	0.048	0.004	1.524	0.088	0.040	0.057

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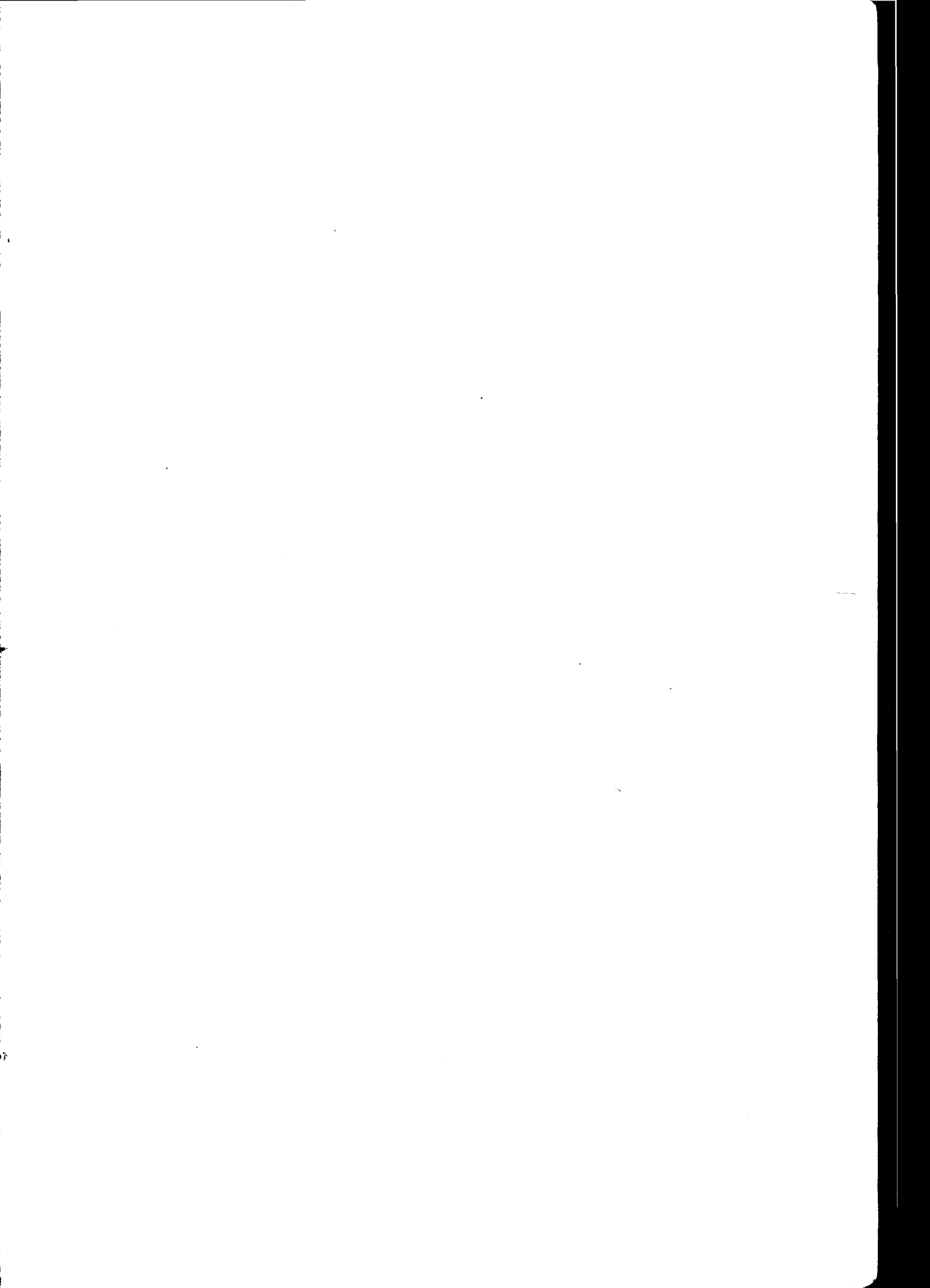
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