THE EGYPTIAN FERTILITY SURVEY

1980

Volume II

Fertility and Family Planning

Central Agency for Public Mobilisation and Statistics

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Editors

CAPMAS   **Awad M. Hallouda**
                    Saad Zaghloul Amin
WFS   **Samir M. Farid**

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THE EGYPTIAN SETTING

1.1 INTRODUCTION

The dominant feature of life in Egypt is the River Nile which flows through the country for 1800 kms from south to north. Since ancient times the river has been the principal source of water necessary for agriculture and as such has always been the primary determinant of population settlement.

The Nile originates in Uganda and Ethiopia and flows north from these headwaters through the Sudan before reaching Egypt's southern border. There the river widens into Lake Nasser, created in the early 1970s by the completion of the Aswan High Dam. It then flows generally northward until it reaches the Mediterranean.

In Upper (southern) Egypt, the river flows through a narrow valley which gradually widens further north. This southern part of Egypt above Cairo consists of a strip of fertile land often only a mile or two wide along the Nile, surrounded by arid desert. At Cairo, about 200 kms from the sea, the Nile fans out through a wide, fertile delta, which the river has created over millennia.

As far back as the year 5100 BC, advanced farming existed in the Nile valley. Around 3400 BC, King Menes unified the kingdoms of Upper (southern) and Lower (northern) Egypt. For the next 3000 years, Egypt was the site of one of the major civilizations in world history.

Over the last several centuries, two major developments took place in Egypt. Following centuries of native rule, the country fell under the influence of a succession of foreign powers. The second development is not unconnected with the first: prosperous Egypt became a universal symbol of exploitation. By the mid-twentieth century, Egypt has come to be synonymous with a hopeless, irretrievable poverty.

After the Egyptian revolution in 1952, Egypt went through a complex process of social engineering that transformed the political, economic and social structure of the country, at a pace which has seldom been equalled in the nation's long history. Transitional situations are usually complex, and during the past three decades Egypt has simultaneously witnessed forward movements, tensions, setbacks and major achievements.

Economic and social development has not occurred without problems. Chief among these has been the rapid growth of the population. The current annual rate of growth of about 2.7 per cent is not only a problem in and of itself, but is also the root from which many other serious problems stem.

1.2 RECENT DEMOGRAPHIC TRENDS

Few if any countries in the developing world have so long a history of population records as Egypt. The earliest census is dated to 3340 BC, but in modern times censuses began in 1800, when Egypt's population was found to be 2.5 million. This estimate was followed by a mid-century count of 4.5 million. Regular censuses began in 1882 (6.7 million), and were followed thereafter from 1897 at ten-year intervals until 1947. They were resumed in 1960, 1966 (sample census) and 1976. Registration of births and deaths began very early, albeit sporadically, in 1839 and became compulsory in 1912.

The course of population growth is summarized in table 1.1. In the 50 years from 1897 to 1947, Egypt's population nearly doubled, from 9.7 million to over 19 million persons. The next doubling took less than 30 years, from 1947 to 1976. In 1982, the estimated size of Egypt's population was 45 million. The population growth rate, which was 1.5 per cent annually at the beginning of this century, fell for a period and then began rising rapidly from the early 1950s, reaching a rate of approximately 2.5 per cent in the early 1960s. For the period 1960–76, the growth rate slackened, but by the early 1980s it had risen again to nearly 3 per cent.

These growth rates largely reflect the interplay of fertility and mortality, since external migration was, until the early 1970s, negligible. The crude death rate fluctuated around 25 per 1000 until the late 1940s. The figures in table 1.2 show that the reported crude death rate declined from around 19 per 1000 in the early 1950s to 10 per 1000 in the early 1980s. The expectation of life at birth has risen from 39 years in 1952 to over 56 years in the late 1970s.

The reported crude birth rate declined from over 40 per 1000 in the mid-1960s to 34 in 1972, but it rebounded and slowly rose to over 40 per 1000 in 1980.

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Table 1.1 Trends in Egypt's population size, 1882–1982[a]

Year	Population size (000s)	Population growth (%)
1882	6 712	2.46
1897	9 669	1.47
1907	11 190	1.29
1917	12 718	1.09
1927	14 178	1.17
1937	15 921	1.77
1947	18 967	2.48
1960	26 985	2.40
1966	30 076	2.42
1976	38 198	2.77
1982	45 000	

[a]Census figures for the years 1882–1976. The figure shown for 1982 is provisional.
Source: CAPMAS 1982. *Statistical Yearbook 1952–81.* Cairo: CAPMAS

Table 1.2 Births, deaths and natural increase, 1952–80

Year	Crude birth rate per 1000	Crude death rate per 1000	Natural increase rate per 1000
1952	45.2	17.8	27.4
1953	42.6	19.6	23.0
1954	42.6	17.9	24.7
1955	40.3	17.6	22.7
1956	40.7	16.4	24.3
1957	38.0	17.8	20.2
1958	41.1	16.6	24.5
1959	42.8	16.3	26.5
1960	43.1	16.9	26.2
1961	44.1	15.8	28.3
1962	41.5	17.9	23.6
1963	43.0	15.5	27.5
1964	42.3	15.7	26.6
1965	41.7	14.1	27.6
1966	41.2	15.9	25.3
1967	38.9	14.2	24.7
1968	37.9	16.0	21.9
1969	36.8	14.4	22.4
1970	35.0	15.1	19.9
1971	35.0	13.1	21.9
1972	34.3	14.4	19.9
1973	35.7	13.0	22.7
1974	35.6	12.6	23.0
1975	36.0	12.1	23.9
1976	36.4	11.7	24.7
1977	37.3	11.8	25.5
1978	37.3	10.4	26.9
1979	39.8	10.8	29.0
1980*	40.8	10.4	30.4
1981*	38.0	10.2	27.8
1982*	36.9	10.3	26.6

*Provisional.
Source: CAPMAS 1983. *Statistical Yearbook 1952–1982.* Cairo: CAPMAS

The high rate of population growth has resulted in an age structure where, in 1976, about 40 per cent of the population is below age 15 and only 3.6 per cent at ages 65 and over (table 1.3). The resulting dependency ratio (ratio of population under 15 or 65 and over to the population aged 15–64) is 0.77. However, only 58 per cent of the population aged 15–64 was economically active in 1976. This gives a much higher effective dependency ratio of 1.3.

The problems and risks associated with the rapid rate of population growth are complicated further by one basic fact about Egypt, namely the extreme scarcity of cultivable land relative to people. Over 97 per cent of Egypt's 1982 population of 45 million persons is crowded on to less than six per cent of the total land area of one million square kilometres (386 000 square miles). The remaining 96 per cent of the land area is desert.

The concentration of the population in the Nile Valley and the Delta, gives Egypt, in 1982, density rates of 45 persons per square kilometre for the total area, but over 820 persons per square kilometre of inhabitable land. Since the cultivated portion of Egypt's surface is no more than 2.5 per cent of the total land area, the effective density is over 1450 persons per square kilometre. In Cairo, density reaches 26 148 persons per square kilometre.

Egypt is relatively more urbanized than most other countries at a comparable stage of development. The urban population increased from 17 per cent in 1907, to 33 per cent in 1947, and to 44 per cent in 1976 (table 1.4).

Table 1.3 Per cent distribution of Egypt's population by age and sex according to the 1976 census

Age	Male	Female	Total
<15	40.5	39.3	40.0
15–49	47.0	47.9	47.4
50–64	9.1	9.1	9.0
65+	3.4	3.7	3.6
Total	100	100	100

Source: CAPMAS. *Statistical Yearbook 1952–81.* Cairo: 1982

Table 1.4 Percentage of urban population, 1907–76[a]

Year	Per cent urban
1907	17.2
1917	20.8
1927	26.9
1937	28.2
1947	33.5
1960	38.0
1966	40.0
1976	43.8

[a]Census figures.
Source: CAPMAS 1982. *Statistical Yearbook 1952–81.* Cairo: CAPMAS

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The spatial distribution of the population presents a classic example of high metropolitan primacy. According to the 1976 census, nearly 60 per cent of the total urban population lived in two of the world's oldest cities, Cairo and Alexandria. The capital alone had a population of nearly 7 million in what is termed Greater Cairo. The 1976 census also shows six cities in the range 200 000 to 300 000 inhabitants, ten cities in the range 100 000 to 200 000, and a further 126 towns with less than 100 000. The rural population lives in 4066 villages: 2400 in Lower Egypt and 1666 in Upper Egypt.

The pattern of urbanization has been dominated particularly by the growth of the country's prime city, Cairo. The city was founded more than 1000 years ago in a locality on the east bank of the Nile opposite Sakkara, and just a few miles away from the ancient capital Memphis. During the period between 1947 and 1976, the urban population increased from 33 to 44 per cent of the total, while the population of Greater Cairo increased from 11 to nearly 20 per cent of the total, to account for almost half of the total urban population.

The education system has expanded rapidly during the past three decades. The introduction of free education at all levels triggered an unprecedented demand on education which was then followed by unprecedented expansion of the school system.

Between 1937 and 1976, illiteracy among the population at ages ten years and over decreased from 76 per cent to 42 per cent for males, and from 94 per cent to 71 per cent for females. Illiteracy, however, is much lower among the younger generations who have benefited, in increasing proportions, from the development and democratization of the educational system. The percentage of the population at ages 5–24 years enrolled at all levels of instruction, increased from 22 per cent in 1952 to over 60 per cent in 1982.

Permanent emigration has traditionally been negligible. But temporary emigration to other Arab countries has been very considerable since 1973. The number of Egyptians working abroad in 1965 was recorded as 100 000, while the 1976 population census presented a figure of 1.4 million as the number of Egyptians resident abroad. In 1982, the number of Egyptians working or living in other Arab countries was officially estimated at 1.7 million.

Data on the occupational structure of the emigration movement show that scientific and technical occupations dominated the flow of emigration in the 1960s. Since 1973, the whole occupational structure has been involved in the emigration movement. During the last few years,

the flow has been dominated by skilled and unskilled workers and farmers. The remittances from emigrants have had profound effects not only on the national economy, but also on the modes of life of millions of Egyptians, particularly in rural areas.

1.3 POLICIES AND INSTITUTIONS

The government of Egypt maintains that the current rate of population growth is too high and that it impedes development efforts and frustrates the hopes for improving the quality of life for every Egyptian.

The government has a clearly defined policy with respect to population growth, which involves direct intervention to modify a number of demographic variables, in combination with a development-oriented approach. It desires to reduce fertility through both direct measures such as family planning and indirect measures such as raising educational levels, extending social security, and reducing infant and child mortality.

Egypt's policy with respect to population growth, and the relative balance it has maintained between direct and indirect measures, has gone through a number of different phases, some of which are clearly marked.

These policies were formally initiated in 1962, but actually originated in 1939 when the newly created Ministry of Social Affairs was given the task of studying population-related issues. After the Egyptian revolution, a National Population Commission was established in 1953 to examine population issues. The first formal population policy statement was included in the National Charter in 1962, and a Supreme Council for Family Planning was established in 1965. The Supreme Council's technical secretariat — the Family Planning Board — which was established in 1966, assists the Council in planning, co-ordinating, monitoring and evaluating family planning activities. In 1973, the Council's name was changed to the Supreme Council for Population and Family Planning, and the Board's name was changed to the Population and Family Planning Board (PFPB).

The Ministry of Health's rural and urban health units were designated as the main channels for providing family planning services, and beginning in 1966 about 2000 of these units provided contraceptives in rural and urban areas.

During the period 1966–73, the family planning programme followed a 'traditional' clinically oriented approach, with an emphasis on the distribution of

contraceptive supplies and information concerning fertility regulation.

From about 1973 to 1975, the official view maintained that the answer to population problems lay in development and that complex population matters could not be addressed merely through the delivery of family planning and related services. Accordingly, the government drafted a nine-point plan, which was the core of its 'development approach'. Of the plan's nine goals, only two involved direct intervention to modify fertility (increasing the coverage of services, and improving communications programmes), while the other seven were all indirect measures which explicitly stressed socio-economic factors as instruments of population change.

In 1975, population policy entered a new phase, which was essentially an amalgam and refinement of the first two phases, although it broadened its focus to include problems in relation to population distribution and structure, as well as growth.

Beginning in 1977, the government began to place more emphasis on direct measures such as upgrading family planning services in some 3750 health units located throughout the country; making family planning methods available in more than 4400 pharmacies at nominal prices, equal to those at family planning centres; and strengthening population education and IEC (information, education, and communication) programmes. At present, the government considers rapid population growth as an issue of major national concern.

1.4 ORIENTATION AND ORGANIZATION OF THE STUDY

The primary purpose of the 1980 Egyptian Fertility Survey (EFS) was to provide planners and policy makers with a comprehensive set of data suitable for evaluating: (1) the causes and determinants of rapid population growth in Egypt; and (2) the alternative strategies for dealing with the complexities of the current demographic realities.

The EFS was planned and executed by the Central Agency for Public Mobilisation and Statistics (CAPMAS) of the government of the Arab Republic of Egypt. The EFS was conducted as part of the World Fertility Survey (WFS), and with the collaboration of the World Bank.

A nationally representative probability sample of 10 596 households was drawn from a master sample design which was developed at CAPMAS with the collaboration of WFS. The design of the master sample has taken into consideration the possibility of utilizing it in designing and drawing other samples for future surveys.

The sample design was a multi-stage stratified one. Shiakhas (districts) in urban areas and villages (including hamlets) in rural areas were the primary sampling units. In designing the sample, all the urban shiakhas and villages were ranked according to the level of literacy and the number of households. With probability proportional to size, 92 shiakhas from the urban areas and 108 villages/hamlets were selected.

The EFS was designed as a two-phase survey. In the First Phase Survey, three questionnaires were used: the household schedule, the individual questionnaire for ever-married women, and the community-level questionnaire for rural areas. The individual questionnaire was the main component of the survey. It was administered to Egyptian, ever-married women, under 50 years of age, who were usually resident in the sample households. The Second Phase Survey utilized two questionnaires: the household economic questionnaire, and the individual questionnaire for husbands.

The First Phase Survey covered all the households in the sample, while the Second Phase Survey covered a subsample of about one-third of the households interviewed in the First Phase Survey. This subsample was selected in two stages. In the first stage, half of the sample areas covered in the First Phase Survey were systematically selected. Within these areas or clusters, two-thirds of the households which had at least one ever-married woman who had been successfully interviewed in the First Phase were systematically selected for the Second Phase Survey.

The First Phase Survey carefully documents levels of nuptiality; fertility; infant and child mortality; breast-feeding and other biological factors; attitudinal dimensions of childbearing; knowledge and use of contraception; availability and accessibility of family planning services; and the potential demand for contraception. The first phase also documents the sociological and background factors affecting the biological, attitudinal and behavioural determinants of fertility.

In the Second Phase Survey, the data were enriched by collecting attitudinal and cognitive data from husbands, and data on the economic characteristics of households. Data derived from the second phase are used in this report to compare the attitudes, preferences, knowledge and reported behaviour of husbands and wives; and to

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examine the effect of household income on the fertility attitudes, preferences and behaviour of husbands and wives.

This volume presents the major findings of the First Phase Survey of the Egyptian Fertility Survey 1980. The analysis will be presented in terms of the sample as a whole as well as for different subgroups of the sample. These subgroups will be defined by a number of background characteristics which will be referred to as the 'explanatory variables' or the 'socio-economic characteristics' of the respondents. These variables were included in the questionnaires used in the EFS, partly because they have a proven capacity to capture significant dimensions of the Egyptian society, and partly because they have hypothesized relationships to the survey's main focus of study. The objective of chapter 2 is to examine the data collected in the survey on these characteristics and to provide a demographic and socio-economic profile of the EFS sample.

This is followed by three chapters (3–5) on levels, trends and differentials in nuptiality, fertility and infant and child mortality. Chapter 6 describes patterns of breastfeeding and some other biological factors affecting fertility.

Chapter 7 examines the attitudinal dimensions of childbearing and the determinants of desired family size. These dimensions are an important part of the background against which achieved fertility and contraceptive use in Egypt should be gauged.

Individual choices about family size are made effective through fertility regulation. The data collected in the EFS permits a comprehensive assessment of various dimensions of fertility regulation in Egypt. Chapter 8 investigates levels of knowledge and use of family planning, and reviews demographic and socio-economic differentials in these variables. Availability and accessibility of family planning services are evaluated in chapter 9.

In chapter 10, fertility preferences and contraceptive intentions are considered jointly. The focus of attention will be on the consistency between stated preferences and behaviour, and on the potential contraceptive demand.

The concluding chapter of this volume presents a brief synthesis of the various findings of the study.
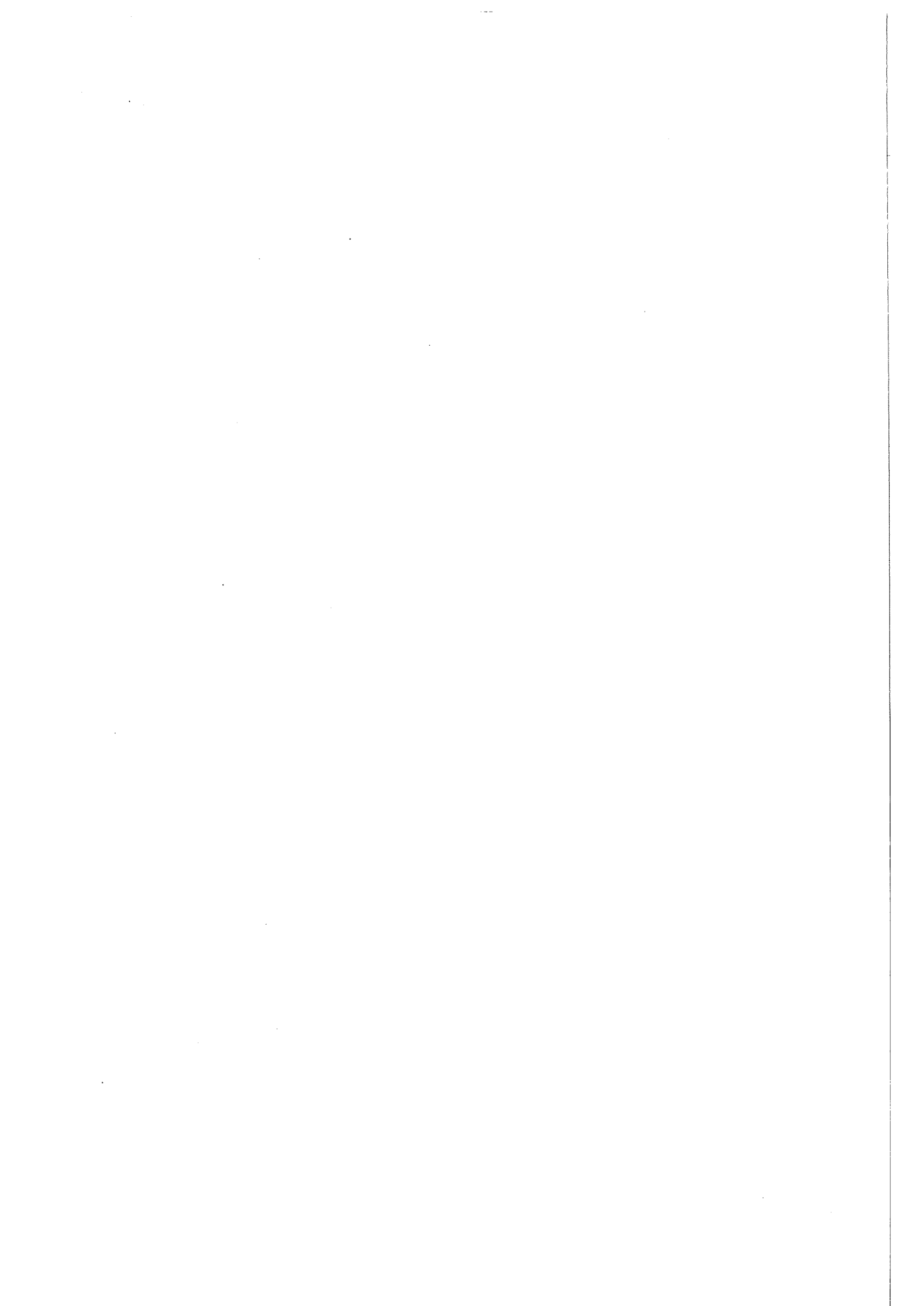
CHARACTERISTICS OF THE SURVEY RESPONDENTS

2.1 INTRODUCTION

The first phase of the Egyptian Fertility Survey 1980 consisted of two components: the household survey and the individual survey. A large number of detailed tables from these two surveys have been prepared and published in volume IV of this report. In the following chapters, the major findings of the EFS on nuptiality, fertility, child mortality, family size desires and family planning will be presented in the form of summary tables, with cross-reference where appropriate to the detailed tabulations.

The analysis will be presented in terms of the sample as a whole as well as for different subgroups of the sample. These subgroups will be defined by a number of background characteristics which will be referred to as the 'explanatory variables' or the 'socio-economic characteristics' of the respondents. These variables were included in the questionnaires used in the EFS, partly because they have a proven capacity to capture significant dimensions of the Egyptian society, and partly because they have hypothesized relationships to the survey's main focus of study.

The objective of this chapter is to examine the data collected in the survey on these characteristics and to provide a demographic and socio-economic profile of the EFS sample. The chapter is divided into seven sections. Section 2.2 gives a brief description of the population enumerated in the household survey. Section 2.3 defines and describes the background variables used in the analysis of the EFS data, and gives an indication of the relative size of the different subgroups. In section 2.4 the demographic composition of the background variables by age and by duration of marriage is analysed. This will enable a better understanding of the survey's major findings.

As it is likely that the background variables are themselves inter-related, a prior clarification of some of these inter-relationships is essential in order to place the substantive findings of the survey in their proper context. A description of association between socio-economic variables is given in section 2.5. A brief description of standardization techniques used in the analysis is given in section 2.6. Finally, section 2.7 explains the use of the tables of sampling errors which are shown in appendix I.

2.2 POPULATION ENUMERATED IN THE HOUSEHOLD SURVEY

A total of 10 079 households were successfully interviewed for the household survey using the household schedule. Listing of household members was done on a *de jure* (usually resident in the household) basis. The *de jure* population numbered 53 726 persons. The average household size based on the *de jure* population was 5.3.

Table 2.1 shows the per cent distribution of the population enumerated in the household survey, according to age and sex. The same information is shown in table 2.2 but for broader age groupings. The figures show a very young population for Egypt and conform to the pattern observed in most developing countries; thus, about 40 per cent of the population enumerated in the survey are less than 15 years old. About 47 per cent of the female population are in the childbearing age range 15–49 years.

A detailed evaluation of the quality of age reporting in the EFS has been carried out and is published

Table 2.1 Per cent distribution of the *de jure* population enumerated in the EFS 1980 household survey, according to age and sex

Age	Males	Females
Under 5	15.7	14.7
5–9	12.5	12.0
10–	12.8	12.0
15–	12.2	11.4
20–	9.0	9.6
25–	7.2	7.5
30–	5.4	6.0
35–	4.8	5.3
40–	4.3	4.2
45–	3.7	3.6
50–	3.3	3.5
55–	2.8	3.4
60–	2.5	2.8
65–	1.7	1.8
70 +	2.1	2.2
All	100.0	100.0

Source: Table A1

Table 2.2 Per cent distribution of the *de jure* population enumerated in the EFS 1980 household survey, in broad age groups

	Age				All
	<15	15–49	50–59	60+	
Males	41.0	46.6	6.1	6.3	100
Females	38.7	47.6	6.9	6.8	100
Total	40.0	47.0	6.5	6.5	100

Source: Table A1

elsewhere.[1] This evaluation has revealed that there are shifts in the age distribution of males and females of moderate magnitude, and that the impact of these irregularities can be defused by presentation of results in terms of five-year age groupings.

2.3 DESCRIPTION OF THE EXPLANATORY VARIABLES

The main findings of the survey are presented in this report not only for the sample as a whole but also for different subgroups of the sample. These subgroups are defined by a number of geographic and socio-economic variables, which will be referred to as the 'socio-economic characteristics'.

The geographic characteristics included in the individual survey were childhood type of place of residence, current type of place of residence, and region of residence. The socio-economic characteristics included education of respondent and her spouse, occupation of her current or last husband, the respondent's work experience both before and after marriage, and religion.

Table 2.3 shows the per cent distribution of ever-married women interviewed in the individual survey according to major background characteristics.

For the purposes of preparing the present report, it was considered excessive to use all available variables, and accordingly only the following five background characteristics of the women and the two characteristics of their current (or last) husbands have been used in most tabulations:

A Wife's characteristics

Type of place of residence

Region of residence
Type of locality
Level of education
Pattern of work

B Husband's characteristics

Level of education
Occupation

A brief description of each of these seven variables is given below.

2.3.1 Type of place of residence
Sample areas were classified as 'urban' or 'rural' in accordance with the official standard designation used by all government agencies. According to the individual survey, about 42 per cent of the ever-married women lived in urban areas and 58 per cent lived in rural areas.

2.3.2 Region of residence
Egypt is divided into 26 administrative units called governorates. For the purposes of the present analysis, these governorates have been grouped into the following four regions.[2]

Greater Cairo: this region includes the governorate of Cairo, part of the governorate of Giza across the Nile, and part of Kalyubia governorate in the north-west of Cairo. This region will be referred to as 'Cairo'.

Alexandria: includes Alexandria governorate.

Lower Egypt: this region includes all the eight governorates lying in the north in the Nile Delta (Behera, Dakahlia, Damietta, Gharbia, Kafr-el-Sheik, Kalyubia — except the part included in Greater Cairo, Menoufia, and Sharkia); the three governorates along the Suez Canal (Ismaila, Port Said, and Suez); and the frontier governorate of Matoh, along the Mediterranean and west of Alexandria.

Upper Egypt: this region includes all the eight governorates lying south of Cairo along the Nile Valley (Giza — except the part included in Greater Cairo, Beni Suef, Fayoum, Minya, Asiut, Souhag, Kena, and Aswan); and the two frontier governorates east and west of the Nile Valley (the Red Sea, and the New Valley).

About 18 per cent of the ever-married women in the sample lived in Cairo, more than 5 per cent in Alex-

[1]El-Deeb, B. Evaluation of the Egyptian Fertility Survey 1980. In A.M. Hallouda and S.M. Farid, eds *The Demographic Transition in Egypt.* Voorburg, Netherlands, forthcoming.

[2]The two governorates in Sinai were not included in the sample.

Table 2.3 Per cent distribution of ever-married women interviewed in the EFS individual survey, according to socio-economic characteristics[a]

Socio-economic characteristics	Per cent	Socio-economic characteristics	Per cent	Socio-economic characteristics	Per cent
A Wife's characteristics					
Type of place of residence		*Literacy*		*Pattern of work*	
Urban	42.2	Illiterate	77.2	Worked before and after marriage	11.6
Rural	57.8	Literate	22.8	Worked before marriage only	5.5
				Worked after marriage only	7.5
Region of residence		*Educational status*		Never worked	75.3
Cairo	18.1	Illiterate: no school	58.6		
Alexandria	5.4	Illiterate: some school	18.5	*Occupation since marriage*	
Lower Egypt	44.2	Can read and write	9.8	Prof., tech. and clerical	4.9
Upper Egypt	32.3	Primary	4.7	Sales	1.4
		Secondary	5.7	Agriculture	9.5
Type of locality		University	2.6	Service	1.3
Metropolitan	23.5			Manual	2.1
Cities: Lower Egypt	6.1	*Work status before marriage*		Did not work	80.8
Cities: Upper Egypt	2.7	Family	6.8		
Towns: Lower Egypt	5.5	Employee	9.2	*Place of work since marriage*	
Towns: Upper Egypt	4.4	Self-employed	1.2	Family farm	7.3
Villages: Lower Egypt	32.6	Did not work	82.8	Other farm	2.2
Villages: Upper Egypt	25.2			At home	1.9
		Work status since marriage		Away from home	7.8
Childhood type of residence		Family	7.8	Did not work	80.8
Urban	43.3	Employee	8.7		
Rural	56.7	Self-employed	2.7	*Religion*	
		Did not work	80.8	Muslim	94.1
				Christian	5.9
B Husband's characteristics					
Literacy		*Work status*		*Occupation*	
Illiterate	49.5	Family	3.2	Prof., tech. and admin.	10.2
Literate	50.5	Employee	63.6	Clerical	5.2
		Self-employed	32.7	Sales	6.2
Educational status		Did not work	0.5	Farmers (self-employed)	21.0
Illiterate: no ool	43.3			Agricultural workers	16.8
Illiterate: some school	6.2	*Childhood type of residence*		Service	11.7
Can read and write	25.4	Urban	37.7	Manual	28.9
Primary	8.4	Rural	62.3		
Secondary	10.1				
University	6.6				

[a]Total number of ever-married women: 8788.

andria, 44 per cent in Lower Egypt, and 32 per cent in Upper Egypt.

2.3.3 Type of locality

Information on both the 'type of residence' variable and the 'region of residence' variable was combined to create this variable with the following seven categories.

1 *Metropolitan:* includes the two regions of Greater Cairo and Alexandria.

2 *Cities — Lower Egypt:* includes all the capital cities of the governorates constituting the Lower Egypt region, and the city of El-Mehalla El-Kobra which is one of the largest industrial centres in Egypt.

3 *Cities — Upper Egypt:* includes all the capital cities of the governorates constituting the Upper Egypt region.

4 *Towns — Lower Egypt:* includes all other urban areas in the Lower Egypt region.

5 *Towns — Upper Egypt:* includes all the cities and towns in Upper Egypt except those in category (3).

6 *Villages — Lower Egypt:* all areas defined as rural in the Lower Egypt region.

7 *Villages — Upper Egypt:* all areas defined as rural in the Upper Egypt region.

In some tabulations in this report, categories 2 and 4 and categories 3 and 5, will be collapsed into two larger groupings which will be referred to as Urban Lower Egypt, and Urban Upper Egypt, respectively.

As may be seen from table 2.3, nearly one-fourth of the respondents live in metropolitan areas, one-third in rural Lower Egypt, and one-fourth in rural Upper Egypt. The remaining 19 per cent are distributed as follows: 6

and 3 per cent in the cities of Lower and Upper Egypt, respectively; and 5 and 4 per cent in the towns of Lower and Upper Egypt, respectively.

2.3.4 Level of education

The educational system in Egypt has four tiers: primary, covering six years of schooling; preparatory covering three years; secondary also covering three years; and higher institute and university which last in most cases for four years.

In the individual survey, both the respondent's literacy status and educational attainment were obtained. Responses to the questions on these two characteristics were combined into a single variable with six categories.

The first category includes the illiterate ever-married women who have never attended school; this group represents 59 per cent of the total number of ever-married women in the individual sample.

The second category includes the illiterate ever-married women who went to school but dropped out after a short period; this group includes 18 per cent of the women in the sample.

The third group, 10 per cent, includes women who are literate but have not completed primary school.

The fourth group, 5 per cent, contains those who have completed the primary level of education and spent between six and eight years at school.

The fifth group, 6 per cent, contains those who have completed the intermediate preparatory or the secondary school, and spent between 9 and 15 years in the educational system.

The sixth and last group, about 3 per cent, contains the ever-married women with university education.

2.3.5 Pattern of work

Details about employment were obtained from each ever-married woman interviewed in the individual survey, both for her current or most recent work since marriage and for work done before marriage. The definition of 'work' was an occupation apart from ordinary household duties, whether paid in cash or in kind or unpaid, whether on own account or for a family member or for someone else, whether done at home or away from home. The information collected on timing of work has been summarized in the following four categories:

1 Those who worked before and after marriage. This

category includes 1023 ever-married women or 12 per cent of the individual survey sample. All but 136 of these women are also currently working.

2 Those who worked before their first marriage but not since marriage. This category includes 485 ever-married women or 5 per cent of the individual sample.

3 Those who have worked since marriage but did not work before their first marriage. This category includes 663 ever-married women or 8 per cent of the individual sample. Of these women, all but 91 are currently working.

4 Those who never worked. Out of the 8788 ever-married women of the individual survey sample, 6616 or 75 per cent have never worked.

2.3.6 Husband's level of education

The EFS results show that husbands are more educated than are their wives. About one-half of all husbands are literate, compared to only less than one-fourth of their wives.

Responses to the questions on husband's literacy/educational attainment were combined into a single variable with six categories similar to those used to describe the educational status of the wives.

2.3.7 Husband's occupation

For currently married women this variable relates to the current (or most recent, if retired or unemployed) occupation of the husband; for women who are not currently married, the reference is to their last husband's occupation.

Responses to the question of husband's occupation have been coded using the detailed 3-digit standard classification of CAPMAS, and a single digit classification corresponding to WFS recommendations. In tabulations, only seven broad categories are used. These categories relate to the WFS system as follows:

Category	WFS category
Professional, technical, administrative and managerial	1
Clerical	2
Sales	3
Farmers (self-employed)	4
Agricultural workers (employees)	5
Service	6, 7
Manual	8, 9

10

This amalgamation of the occupational categories is introduced in order to simplify the discussion; it is also made necessary by the smallness of sample sizes of certain categories.

However, it should be recognized that there are inherent difficulties in any occupational classification. For example, the Sales category ranges from a street vendor to a salaried salesman in a modern enterprise. The activities, requirements, and rewards associated with these jobs are very different. Similarly, there is a wide range of jobs and incomes in other occupational categories. Nevertheless, it is not unreasonable to expect that this broad classification will capture some aspects of the socio-economic status of the population studied.

Table 2.3 shows that 38 per cent of all husbands are engaged in agricultural occupations (21 per cent self-employed, and 17 per cent agricultural workers); 29 per cent in manual jobs (skilled 25 per cent, and unskilled 4 per cent); 12 and 6 per cent in the service and sales sectors, respectively; 5 per cent in clerical occupations; and 10 per cent in professional, technical and administrative positions.

2.3.8 Other variables

In some of the tabulations, particularly those presenting the differentials in age at marriage and early marital fertility, three other background variables have been used. These are woman's occupation before first marriage (defined in the same way as her husband's occupation); her childhood place of residence (urban or rural) defined as the woman's subjective impression of the place where she spent most of her childhood years; and 'work status' before marriage.

2.4 DEMOGRAPHIC COMPOSITION OF THE SOCIO-ECONOMIC CATEGORIES

It is commonly observed that women with different background characteristics also differ in their demographic composition, for instance in terms of age and age at marriage. In Egypt, where in recent years there has been a significant improvement in the educational status of women, there is a much higher proportion of educated women at younger rather than at older ages. A common consequence of improving educational opportunities is a changing nuptiality pattern (educated women are likely to marry late), a fact of relevance in the EFS where the individual survey was restricted to ever-married women. Variations between categories can also be caused by age-misreporting, the pattern of which may vary from one

category to another, and, for subgroups, by sampling fluctuations.

For a critical understanding of the data, it is important to recognize the nature of these differences between categories of the socio-economic variables, even though an attempt is made to include explicit control by relevant demographic variables in the cross-tabulations discussed here. Table 2.4 has been constructed to illustrate differences in composition by age and marriage duration between various socio-economic categories. The figures show the proportion belonging to a particular age, or marriage duration group, within a specified socio-economic variable category, divided by that proportion in the total sample of ever-married women. The figures thus indicate the relative size of an age or marriage duration group in a particular category, compared to the proportion of that group in the whole sample. A figure larger than 1.0 means that the group is relatively over-represented in the given category.

For the sample as a whole, the per cent distribution of ever-married women by age and by marital duration is given in the top row of table 2.4. Over one-third of the women are aged 25–34, and more than one in five women have been married for less than five years.

The table shows that urban women are slightly older than rural women, though the difference is small. Regional differences are more pronounced. Women under 25 years of age are over-represented in Upper Egypt and under-represented in Cairo and Alexandria.

Categories by level of education differ greatly in age distribution. Women who have primary or secondary education are over-represented at ages 25–34, and under-represented at older ages. Women who have university education are substantially over-represented at ages 25–34, and under-represented at both younger and older ages.

Figures on the categories of the variable 'pattern of work' suggest that women who worked after marriage tend to be older than women who worked before marriage only or those who never worked.

There are proportionately more women in the age group 25–34 and fewer below and above this age range among those whose husbands are in the professional, technical and clerical occupations; whereas wives of agricultural and manual workers are over-represented at ages below 25.

Thus, strong associations exist between current age and marital duration and certain categories of the women's socio-economic characteristics. A common

Table 2.4 Relative distribution of ever-married women according to current age and duration of marriage within categories of socio-economic characteristics

Socio-economic characteristics	Current age				Years since first marriage				
	< 25	25–34	35–44	45+	< 5	5–9	10–14	15–19	20+
Per cent distribution of the total sample of ever-married women	25.9	36.6	27.2	10.3	21.8	18.9	15.8	14.9	28.6
A Wife's characteristics									
Type of place of residence									
Urban	0.80	1.09	1.04	1.06	1.03	0.98	0.99	1.00	0.99
Rural	1.15	0.93	0.97	0.95	0.97	1.02	1.00	1.00	1.01
Region									
Cairo	0.76	1.10	1.09	1.02	1.03	0.91	1.06	1.05	0.97
Alexandria	0.56	1.14	1.15	1.21	0.87	0.92	1.02	1.16	1.05
Lower Egypt	1.03	1.02	0.96	0.98	1.03	1.02	1.02	0.98	0.96
Upper Egypt	1.17	0.90	0.98	0.99	0.96	1.04	0.94	0.96	1.06
Type of locality									
Metropolitan	0.71	1.11	1.11	1.06	1.00	0.91	1.05	1.08	0.99
Cities: lower	0.76	1.14	1.05	0.97	1.07	1.03	0.99	0.91	0.98
Cities: upper	0.75	1.71	0.99	1.04	1.10	0.86	0.90	1.24	0.95
Towns: lower	0.99	1.07	0.86	0.89	1.14	1.26	0.88	0.70	0.94
Towns: upper	1.11	0.95	0.93	1.07	1.02	0.96	0.91	0.96	1.08
Villages: lower	1.08	0.99	0.96	0.95	1.01	0.98	1.04	1.04	0.96
Villages: upper	1.23	0.86	0.99	0.96	0.93	1.07	0.95	0.94	1.07
Level of education									
Illiterate: no school	1.02	0.95	1.06	1.01	0.84	0.97	1.05	1.06	1.08
Illiterate: some school	1.14	0.93	0.92	1.12	1.04	1.03	0.85	0.89	1.09
Can read and write	0.83	0.99	1.07	1.28	0.97	0.90	0.85	1.22	1.06
Primary	0.90	1.17	0.93	0.82	1.07	1.07	1.38	0.93	0.73
Secondary	0.99	1.37	0.69	0.52	2.11	1.04	0.87	0.72	0.34
University	0.44	1.71	0.83	0.34	1.88	1.56	1.17	0.39	0.19
Pattern of work									
Before and after	0.81	1.29	0.88	0.75	1.35	1.22	1.09	0.78	0.65
Worked before only	1.25	1.04	0.80	0.74	1.33	1.22	0.93	0.89	0.70
Worked after only	0.53	1.10	1.25	1.19	0.54	0.69	1.13	1.13	1.43
Never worked	1.06	0.94	1.01	1.04	0.97	0.98	0.98	1.03	1.03
B Husband's characteristics									
Level of education									
Illiterate: no school	0.94	0.94	1.07	1.19	0.79	0.92	0.98	1.10	1.17
Illiterate: some school	1.58	0.86	0.78	0.61	1.42	1.16	0.92	0.64	0.81
Can read and write	0.99	0.91	1.12	1.03	0.84	0.97	0.95	1.00	1.17
Primary	0.97	1.05	1.00	0.91	1.03	1.01	1.12	1.04	0.88
Secondary	1.17	1.26	0.65	0.58	1.59	1.18	1.14	0.89	0.41
University	0.67	1.43	0.83	0.77	1.65	1.22	1.02	0.74	0.48
Occupation									
Prof., tech. and admin.	0.85	1.28	0.84	0.82	1.53	1.22	1.03	0.76	0.56
Clerical	0.79	1.25	0.87	0.96	1.27	0.96	1.22	0.87	0.77
Sales	0.74	0.99	1.12	1.39	0.70	0.90	0.96	1.00	1.33
Farmers	1.06	0.85	1.12	1.08	0.86	0.86	0.99	1.07	1.17
Agricultural workers	1.19	0.93	0.94	0.90	0.93	1.11	1.00	1.03	0.96
Services	0.82	0.94	1.18	1.20	0.66	0.97	0.98	1.09	1.25
Manual	1.06	1.03	0.93	0.91	1.11	1.00	0.97	1.01	0.93

Source: Tables 2.2.6 and 1.2.2.

method of taking these differences into account is to study differentials in fertility or related topics only within specified marriage duration or age groups. These demographic controls should be sufficiently fine to eliminate any effect of compositional differences on the findings. In presenting the results, wherever relevant, the sample is divided into five or ten-year groups by current age or marriage duration. These controls should be adequate for the purpose.

When sample size does not permit sufficiently detailed cross-classification of the data, an alternative method of

taking into account differences in composition by age or marriage duration, etc is direct 'standardization'. Further details on the procedure are given in section 2.6.

2.5 ASSOCIATION BETWEEN SOCIO-ECONOMIC VARIABLES

Association between socio-economic variables can be expected, in that individuals possessing a particular characteristic may often also be more likely to possess certain other characteristics. For example, women living in urban areas tend also to be better educated.

Further, the background variables that have been selected for use in the present analysis are only a subset of a larger number of variables that characterize the milieu in which Egyptian women live and function. These variables are not of the same type. Some are strictly individual characteristics, such as level of education and husband's occupation. Others, such as region of residence or type of place of residence, stand for a whole set of unspecified characteristics.

Thus, with a cross-sectional survey and only a relatively small number of explanatory variables, it will be impossible to resolve questions of a causal nature. It may be possible to say, for example, that fertility is lower in one region of the country than in another, but one could not then infer that residence in that region was a *cause* of low fertility. Such a statement would imply that national

fertility would be reduced if all people, regardless of their other characteristics, could be induced to migrate to that region. In order to reach such a conclusion properly, one would require repeated observations of migrants to and from that region and possible changes in fertility which followed migration.

Because of this fundamental limitation on causal inference, imposed by the nature of the data, one should not take observed relationships at face value. Some of these apparent relationships are simply indicators of others which are more basic. For example, suppose that the region of lowest fertility and highest contraceptive use were also the region with the highest educational level, and suppose that it were found that in all regions better educated women had lower fertility and higher contraceptive use. It would then be logical to infer that the role of education was more important than region as a determinant of fertility and contraceptive prevalence, and that regional differences were simply a manifestation of differences in other variables, including education.

A detailed examination of pairs of background variables has disclosed that the two variables most strongly associated are place of residence and education. Table 2.5 shows, for each locality, the per cent distribution of ever-married women by their educational status and that of their husbands.

At the national level, urban women are better educated than rural women. Thus, ever-married women in Cairo, Alexandria, and the cities of Lower and Upper

Table 2.5 Per cent distribution of all ever-married women according to type of locality by: (A) woman's education, and (B) current (or last) husband's education

Type of locality	Level of Education						All
	Illiterate: no school	Illiterate: some school	Can read and write	Primary	Secondary	University	
A Woman's education							
Metropolitan	39	17	16	9	12	6	100
Cities: Lower Egypt	40	16	14	8	14	8	100
Cities: Upper Egypt	40	18	13	7	13	9	100
Towns: Lower Egypt	44	21	14	9	9	3	100
Towns: Upper Egypt	64	15	10	5	4	2	100
Villages: Lower Egypt	66	21	7	3	2	1	100
Villages: Upper Egypt	75	18	5	1	1	0	100
All	58	18	10	5	6	3	100
B Husband's education							
Metropolitan	22	5	30	12	16	15	100
Cities: Lower Egypt	23	4	28	12	18	15	100
Cities: Upper Egypt	33	5	18	9	20	15	100
Towns: Lower Egypt	31	5	26	13	17	8	100
Towns: Upper Egypt	52	7	18	6	10	7	100
Villages: Lower Egypt	48	7	28	8	7	2	100
Villages: Upper Egypt	64	8	19	4	4	1	100
All	43	6	26	8	10	7	100

Egypt have a similar level of female literacy of around 44 per cent. The level of literacy drops to 35 per cent in the towns of Lower Egypt, 21 per cent in the towns of Upper Egypt, 13 per cent in rural Lower Egypt, and only 7 per cent in rural Upper Egypt.

A clustering of the regions by husband's literacy status reveals a different pattern. Cairo, Alexandria and the cities of Lower Egypt fall in one category, 73 per cent literate; followed by the towns in Lower Egypt and the cities in Upper Egypt, about 63 per cent literate; while rural Lower Egypt and the towns of Upper Egypt fall in the third category with literacy levels of 45 and 41 per cent, respectively. The fourth cluster contains rural Upper Egypt with 28 per cent of husbands being literate.

Association also exists between female labour participation and education, residence and husband's occupation. Table 2.6 shows a non-linear relationship between women's work and education. The percentage of ever-married women who have ever worked decreases from 22 per cent for illiterate women to 14 per cent for those who can read. This percentage then increases to 19 per cent for women who completed their primary education, 54 per cent for women with secondary education, and as much as 88 per cent for those with university education.

Female labour force participation is highest in Lower Egypt, 30 per cent of the women have ever worked; and it decreases to 25 per cent in Cairo and Alexandria, and to 18 per cent in Upper Egypt.

The proportion of women who have ever worked is lowest among the wives of manual, sales and service workers, about 20 per cent; and highest among the women whose husbands have professional positions, 40 per cent. The wives of agricultural workers and clerical workers show intermediate levels, 27 and 31 per cent, respectively.

The ever-married women who have ever worked since marriage have the following occupational distribution: 50 per cent in agriculture, 25 per cent in professional and clerical occupations, 11 per cent in manual jobs, and 14 per cent in the sales and service sectors.

The detailed tabulations also show the expected association between type of place of residence and husband's occupation. Broadly speaking, husbands of rural women have the following occupational distribution: 61 per cent in agriculture; 31 per cent in sales, service and manual occupations; and the remaining 8 per cent in professional or clerical positions. For husbands of urban women, 69 per cent are manual, service or sales workers; 25 per cent are in professional or clerical occupations, while the remaining 6 per cent are engaged in agricultural activities.

There is also an association between the woman's education and her husband's education, the majority of women with a given level of education are married to men with equivalent or higher level of education. This suggests that a given level of education for the wife would tend to reflect a socio-economic status for the family higher than that reflected by an equivalent educational level for the husband.

These patterns of association between socio-economic variables show that differentials in one variable should not be treated as if they were unrelated to differentials in another variable. Advanced statistical techniques, beyond the scope of this report, would be required to separate fully the roles of associated variables, and even then, any causal sequences can only be speculative.

2.6 NOTE ON STANDARDIZATION

As has been noted above, the background or socio-economic variables define parts of the sample to be compared and contrasted in the study of differentials in fertility behaviour, preferences, and regulation. Comparisons across sub-populations are hampered by the statistical association that may exist between the variable which defines the sub-populations and some other

Table 2.6 Percentage of ever-married women who have ever worked according to level of education, region and husband's occupation

Level of education	Per cent ever-worked	Region	Per cent ever worked	Husband's occupation	Per cent ever worked
Illiterate: no school	22	Cairo	25	Prof., tech. and admin.	40
Illiterate: some school	21	Alexandria	23	Clerical	31
Can read and write	14	Lower Egypt	30	Sales	19
Primary	19	Upper Egypt	18	Farmers	28
Secondary	54			Agricultural workers	26
University	88			Service	21
				Manual	19
Overall percentage: 25					

variables. For example, in comparing mean parities of several educational categories, the conclusion will be more complex if education and marriage duration are associated. Marital duration has a clear, largely biological relationship to parity and if, say, the higher educational groups have a disproportionately high number of women with short marriage durations, then the high educational groups will have low fertility for that reason alone.

In studying differentials, it is therefore necessary to control relevant demographic and other characteristics of the categories being compared. When sample size does not permit sufficiently detailed cross-classification of the data, an alternative method of taking into account differences in composition is direct standardization.[3]

Standardization is applied to cross-classification of a mean response by, say, a background variable (such as education) and a demographic variable (such as marital duration). In order to control for the latter, for each level of the background variable a weighted average of the cell means is calculated. The weights used are proportional to the grouped distribution of the demographic variable in the population as a whole. For example, in comparing parity for different educational categories, the demographic variable 'marital duration' is controlled by cross-classifying mean parity by education and marital duration, and then calculating for each educational level a weighted average of the mean parities of each marriage duration group, with weights proportional to the marginal distribution of marital duration for the whole sample. In this way, the same distribution by marital duration is applied to each educational level. Except for the approximation resulting from working with grouped data, any observed differences in the 'standardized' means of each educational level are thus not the result of differences in marital duration between the categories being compared.

2.7 STANDARD ERRORS

For certain important statistics in the text the estimated standard error is given in appendix I. For example, in chapter 4, the estimated mean number of children ever born (over the entire sample) is given as 4.13 and its associated standard error is 0.04. Assuming that the survey responses themselves are accurate (ie zero non-sampling error), the standard error in the present context is a measure of the size of the expected (absolute) difference between the observed sample mean and the true population mean. The standard error is important since its knowledge allows a good estimate to be made of a range of values in which the true population value should fall. Assuming that the survey responses themselves are accurate (ie zero non-sampling error), in 2 samples out of 3, the true population value of the variable of interest lies within one standard error of the estimated value, and in 19 samples out of 20 the true population value lies within two standard errors of the estimated value. Accordingly, an interval of plus or minus two standard errors around the sample estimate nearly always (19 times out of 20 or 95 per cent of the time) contains the true population value. This interval is called the 95 per cent confidence interval and is commonly chosen as giving a range of values in which the true (population) value should fall.

In the above example, the 95 per cent confidence interval is $4.13 \pm 2(0.04) = 4.05$ to 4.21; that is, with 95 per cent confidence it can be said that the mean number of children ever born in the population lies between 4.05 and 4.21 children ever born.

Standard errors for the difference between pairs of estimates are also given in appendix I; these are important for determining the likelihood that the observed difference is real or merely caused by sampling variation. In chapter 4, the percentage of (currently married) women pregnant at the time of the survey is shown to vary with age at first marriage. For example, consider comparing the percentage pregnant for the age at first marriage groups under 15, 15–19 and 20–24. The estimated percentages were 13.24 and 16.04 for the age at first marriage groups under 15 and 15–19 respectively, giving an estimated difference of 2.8 per cent. This difference has an estimated standard error of 0.94 so that a 95 per cent confidence interval for the difference is $2.8 \pm 2(.94) = 0.92$ to 4.68. The estimated percentages were 16.04 and 15.87 for the age at first marriage groups 15–19 and 20–24 respectively, giving an estimated difference of 0.17 per cent. This difference has an estimated standard error of 1.12 so that a 95 per cent confidence interval for the difference is $0.17 \pm 2(1.12) = -2.07$ to 2.41.

In general, it is reasonably certain that the sample reflects a real difference in the population if the 95 per cent confidence interval for the difference does not include the value zero. In statistical terminology, the difference is then said to be statistically significant at the 5 per cent level. On the other hand, the term 'not statistically significant' is used to describe a difference with a 95 per cent confidence interval which includes the

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[3]For more detailed discussion of the method, see: Pullum, T.W. (1978). Standardization. *WFS Technical Bulletins* no 3.

value zero; in such cases there is no significant evidence that the observed difference in the sample reflects a difference in the population.

In the above example, the 95 per cent confidence interval for the estimated percentage difference between the age at first marriage groups < 15 and 15–19 does not include the value zero, so there does appear to be a real difference in the percentage pregnant between the age at first marriage groups < 15 and 15–19. The 95 per cent confidence interval for the estimated percentage difference between the age at first marriage groups 15–19 and 20–24 does include the value zero, so the observed difference could be merely caused by sampling variation.

A more detailed presentation of sampling errors may be found in appendix I. Sampling errors have been calculated for the major variables in the EFS, using the WFS computer program CLUSTERS. An outline of the procedure for estimating sampling errors together with the tables of sampling errors for the individual survey are also given in appendix I. The tables show the estimated sampling errors for means, percentages, and proportions, and differences between means, percentages, and proportions for subgroups or subsamples of the population.

MARRIAGE PATTERNS

3.1 INTRODUCTION

In Egypt, the normative system supporting the family is so deeply ingrained, so linked with traditions and sentiments, that the basic features of the family are taken for granted and treated as sacred. The family is one of the things for which people specifically live and work. It is the unit in which reproduction is authorized and expected, and to which the responsibility for child care is assigned. Marriage and fertility are, therefore, viewed as interrelated, as social and demographic processes and as sequential phases in the life cycles of women.

The profound and extensive transformations that took place in Egypt during the past three decades can be described as essentially 'favouring' the family. Yet from the standpoint of consequences and implications, these transformations and the new realities that were forced on the social fabric of the Egyptian society, have introduced factors of change across the demographic scene of the country. Chief among these are the transitions that have taken place in the event that marks the formation of the family–marriage.

In this chapter, attention will be focussed on the patterns and levels of marriage in Egypt. Section 3.2 gives an overall picture of the current marital status of the population enumerated in the household survey. In section 3.3, recent trends in the timing and level of first marriage are analysed. Section 3.4 examines variations in the age at first marriage of different socio-economic subgroups. Finally, some aspects of marital stability are discussed in section 3.5. It should be recalled that information on date of marriage refers to the date when marriage was consummated, *zifaf*, and not the earlier date on which the marriage contract was signed, *Katb el-Kitab*.

3.2 CURRENT MARITAL STATUS

Table 3.1 gives the distribution of the population enumerated in the household survey by current age and sex, according to marital status. The figures give an overview of the relative frequency of the various possible statuses.

The legal minimum age at marriage in Egypt was determined in the Marriage Act 1924 as 16 years for females and 18 for males. As may be seen from table 3.1, very few women under age 15 are married. The proportion of the population that is single declines very rapidly with increasing age. By ages 30–34, only 3.6 per cent of women are single, compared with 14.9 per cent of men. By about age 50 the percentage remaining single is 1.3 per cent for women and about 1 per cent for men. These very low proportions show that marriage is almost universal in Egypt.

As the proportion of single persons declines with increasing age, the proportion of the population that is ever married rises by a corresponding amount. The proportion of currently married persons increases rapidly up to ages 30–34 and then starts to decline due to the effects of widowhood and divorce. Between ages 25 and 50, the proportion divorced among women ranges between 2 and 3 per cent. The percentage of women who are widowed climbs steadily with age but is not substantial until about ages 50–54 where it reaches 29 per cent.

3.3 AGE PATTERNS OF FIRST MARRIAGE

3.3.1 Introduction

Social norms, economic factors and age structure of the population, all work intricately together to shape the character of marriage in a society. The elements involved in this process are wide ranging and include such factors as preferred age differences between husbands and wives, the relative availability of men and women with desired characteristics, the costs of forming a household, the acceptability of divorce and remarriage; and education, employment and other opportunities that may be viewed as a temporary disincentive or alternative to marriage.

The basic approach underlying the demographic analysis of nuptiality is to view the process of first marriage as consisting of a one-stage transition that may be characterized by two aspects. One aspect is the distribution of persons entering first marriage by age, which is related to the timing or *tempo* of nuptiality. The other aspect is the proportion of persons who eventually enter first marriage, or the proportion ever married, which is

Table 3.1 Per cent distribution of the population enumerated in the EFS 1980 household survey by age, sex and marital status

Age	Single	Married	Widowed	Divorced/ separated	Not stated	Total
A Males						
Under 5	100.0	—	—	—	—	100
5–9	100.0	—	—	—	—	100
10–14	99.1	—	—	—	0.9	100
15–19	96.7	2.2	0.0	0.0	1.1	100
20–24	78.1	20.4	0.0	0.2	1.3	100
25–29	42.8	56.2	0.1	0.3	0.6	100
30–34	14.9	83.7	0.4	0.7	0.3	100
35–39	6.0	92.8	0.5	0.5	0.2	100
40–44	2.4	96.6	0.4	0.5	0.0	100
45–49	0.9	97.2	1.1	0.8	0.0	100
50–54	1.3	94.9	2.7	0.7	0.3	100
55–59	0.7	96.3	2.4	0.5	0.1	100
60–64	0.1	93.5	4.4	0.9	0.4	100
65–69	0.6	89.5	9.2	0.4	0.2	100
70+	1.2	83.9	14.3	0.2	0.3	100
B Females						
Under 5	100.0	—	—	—	—	100
5–9	100.0	—	—	—	—	100
10–14	96.7	3.1	0.2	—	—	100
15–19	77.6	21.8	0.0	0.4	0.2	100
20–24	35.4	62.3	0.8	1.3	0.2	100
25–29	13.8	82.2	2.0	2.0	—	100
30–34	3.6	90.5	3.6	2.3	—	100
35–39	2.1	87.9	7.7	2.3	—	100
40–44	2.2	84.6	10.9	2.3	—	100
45–49	1.5	78.9	16.8	2.8	—	100
50–54	1.2	66.2	29.0	3.2	0.4	100
55–59	2.4	57.3	39.0	1.0	0.3	100
60–64	1.9	37.8	57.4	1.1	1.8	100
65–69	2.3	25.5	68.0	1.5	2.7	100
70+	0.9	14.2	82.2	0.9	1.9	100

related to the quantity or *level* of nuptiality. These two characteristics are not necessarily interdependent. A shift in the tempo of nuptiality may have no impact on the level of nuptiality, though it could produce wide fluctuations in the annual number of marriages over a number of years; and conversely the level of nuptiality may change while the age pattern of marriage remains unchanged.

In this section, recent trends in the tempo and level of female nuptiality in Egypt will be analysed by linking data on date of first marriage obtained in the individual survey with data on current marital status from the household survey.

3.3.2 Age-specific first marriage rates

For any given cohort, a measure of the frequency of first marriage is provided by the number of first marriages in a given age group per 1000 single persons in the same age group. This measure is known as the age-specific first marriage rate (ASMR). Table 3.2 sets out values of these rates, for females, by five-year age groups, for five-year birth cohorts.

If the ASMRs of a given cohort are plotted on a chart with ages of women on the horizontal axis, they form a bell-shaped curve, which may be called the age curve of nuptiality (figure 3.1). For Egypt, this curve begins with a minimum in the early teens, then sweeps upward until it attains a maximum of great intensity in the late teens and the early 20s and thereafter it declines to a low level at about age 35.

As may be seen from figure 3.1, the age curve of nuptiality has the same functional form for different cohorts, yet two dimensions of changes over time in the nuptiality curve may be underlined: (1) the early-late dimension, expressed by the age at which the nuptiality curve, for a given cohort, reaches its peak; and (2) the rapid-slow dimension, which reflects the speed with which the age of maximum nuptiality is approached from the beginning of marriageable age, and the subsequent rate of decline until the intensity of first marriage reaches its minimum.

Examining trends in the female cohort age-specific first marriage rates, it may be seen from table 3.2 that over the 30 years before the survey date, the rates have decreased

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Table 3.2 Reconstructed age-specific first marriage rates per 1000 single females, by five-year age groups for five-year birth cohorts, as implied by the EFS 1980

Age at time of first marriage	Current age of cohort (as of 1980)						
	15–19	20–24	25–29	30–34	35–39	40–44	45–49
Under 15	11.6	22.1	31.3	46.4	57.7	58.7	64.0
15–19		127.6	137.3	182.8	190.2	219.1	234.9
20–24			156.7	206.7	214.5	210.2	222.4
25–29				184.3	183.3	147.8	117.8
30–34					69.4	102.6	76.9
35–39						24.8	43.5
40–44							19.2
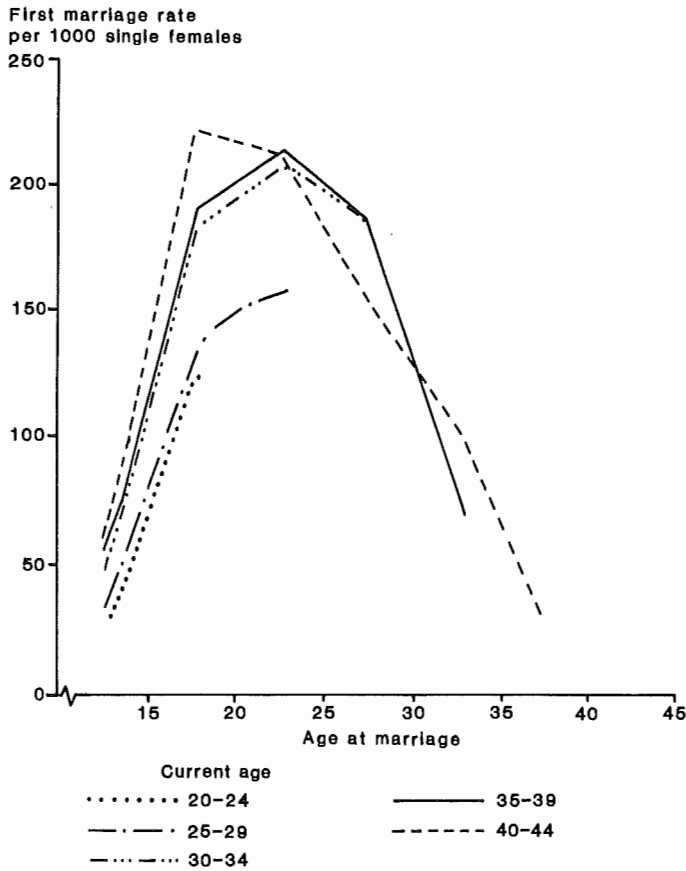
Figure 3.1 Age-specific first marriage rates per 1000 single females

at almost all ages. Especially noteworthy is the dramatic decline in teenage marriages. Rates of over 55 per 1000 single females at ages under 15 years were shown by the cohorts of women currently aged 35 or more, ie women born before 1945. For each of the succeeding cohorts the intensity of marriage under 15 years of age declined steadily and reached a low of around 12 per 1000 single females among the cohort currently 15–19 years old. Substantial decreases in the intensity of first marriage at the crucial age groups 15–19 and 20–24 are also shown by the more recent cohorts. The net effect of these changes in the intensity of first marriage has been a

fundamental shift in the age curve of nuptiality from an early peak pattern to a broader and lower peak pattern.

3.3.3 Levels of cohort nuptiality

The substantial decreases in the intensity of first marriage at young ages and the shift to a later and slower pace of nuptiality have led to considerable shifts in the age distribution of women by marital status. This may be seen from table 3.3 and figure 3.2 which show the cumulative proportions of women ever married before attaining specified ages, by current age.
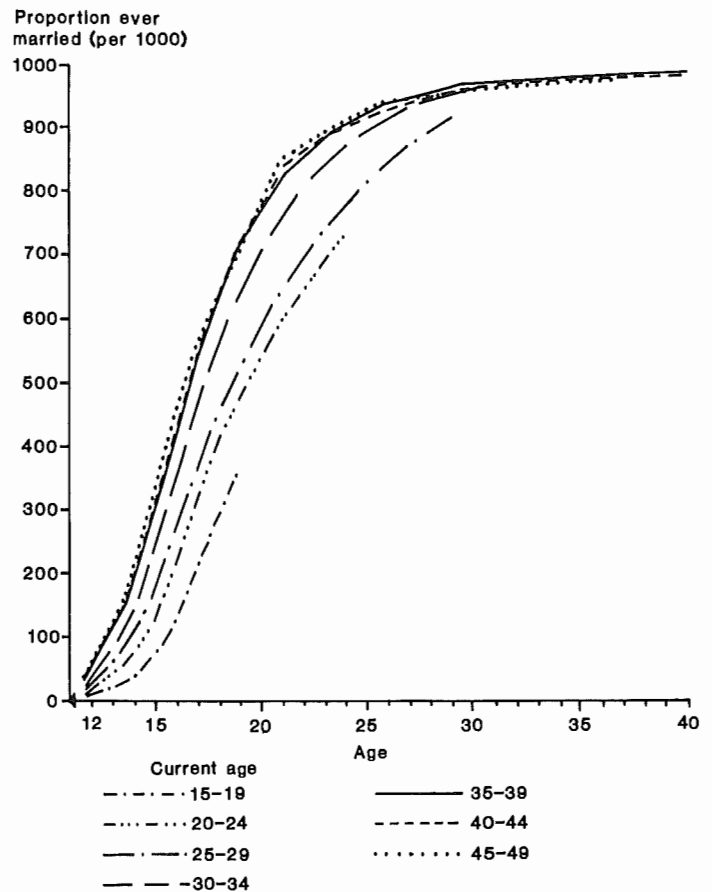
Figure 3.2 Cumulative proportions of women ever married before attaining specified ages, by current age

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Table 3.3 Cumulative proportion of women ever married (per 1000) by age (exact years) for five-year age cohorts, as implied by the EFS 1980

Age (exact years)	Current age (as of 1980)						
	15–19	20–24	25–29	30–34	35–39	40–44	45–49
11	000	000	000	000	000	000	000
12	004	008	012	015	032	029	029
13	014	029	039	061	087	093	085
14	026	058	088	120	158	163	177
15	057	107	150	218	265	269	292
16	105	192	251	325	394	403	429
17	189	295	343	448	514	516	539
18	277	394	436	543	612	621	631
19	345	464	512	628	704	689	701
20		532	575	693	752	763	772
21		589	637	752	809	825	843
22		637	686	798	847	858	868
23		687	733	836	875	878	888
24		728	771	864	900	897	907
25			807	891	916	911	922
26			840	909	939	922	936
27			865	924	943	934	940
28			888	939	951	944	945
29			906	951	962	951	949
30				957	965	958	956
31				964	968	966	958
32				967	970	969	963
33				972	973	974	965
34					975	974	969
35					975	974	970
36					979	975	971
37					979	975	972
38					982	975	975
39					982	977	976
40						977	976
45							984

The figures show a clear trend towards later marriage, and a concomitant tendency for first marriage to become spread over a wider age range, as evidenced by the substantial decreases in the proportions of young marriages. Thus, the proportion ever married before reaching age 25 has decreased from 90 per cent among women currently at ages 35 and over, to 86 per cent for women currently 30–34 years, and to 77 per cent for women currently at ages 25–29. Likewise, the proportion has declined — but more rapidly — for those marrying before age 20; from 76 per cent among the cohorts of women currently at ages 35 and over, to 53 per cent among the cohort aged 20–24.

The downward trend in teenage marriages has been even more striking. About 62 per cent of women currently at ages 35 and over had entered first marriage before reaching age 18, whereas the figure was 54 per cent for women currently 30–34 years old, 44 per cent for women currently 25–29, 39 per cent for women at ages 20–24, and 28 per cent for those aged 15–19.

There has also been a very sharp decline in the very early marriage. The proportion of women ever married by exact age 15 was over 26 per cent among the women currently at ages 35 and over. This proportion continued to decline gradually with every succeeding cohort until it reached a low of 6 per cent among women currently aged 15–19.

3.3.4 Changes in the effective nuptial span

This important transformation in the tempo of female nuptiality reflects, of course, an upward trend in age at first marriage. This may be illustrated by an examination of trends in the ages at which certain proportions of successive birth cohorts were married. In table 3.4 figures are given showing the ages at which 10, 25, 50 and 75 per cent of the initial size of each of the seven age cohorts considered had been married for the first time. The table also shows the inter-quartile range which is obtained by subtracting the age at which the proportion ever married reached 25 per cent from that age at which the proportion reached 75 per cent. It should be noted that the

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Table 3.4 Estimated ages at which 10, 25, 50 and 75 per cent of successive five-year birth cohorts had ever married as implied by the EFS 1980

Current age of cohort (as of 1980)	Percentage ever married				Inter-quartile age ramge
	10	25	50	75	
15–19	15.9	17.7	—	—	—
20–24	14.9	16.6	19.5	—	
25–29	14.2	16.0	18.8	23.4	7.4
30–34	13.7	15.3	17.5	21.0	5.7
35–39	13.2	14.9	16.9	19.8	4.9
40–44	13.1	14.8	16.9	19.8	5.0
45–49	13.2	14.6	16.6	19.7	5.1

figures in table 3.4 are not controlled for the ultimate level of nuptiality and, therefore, cannot be used as indicators of the net effect of changes in the tempo of nuptiality.

Table 3.4 brings out in sharper focus the remarkable transformation in the age pattern of nuptiality which started with the cohorts of women born in the early 1950s, and shows that the two dimensions of the tempo of nuptiality, namely the early-late dimension and the rapid-slow dimension, have worked — with only few exceptions — in such a way as to reinforce each other. Thus, the age at which the proportion ever married reached 25 per cent was less than 15 for each of the cohorts currently aged 35–39, 40–44 and 45–49. This age has risen to 16 years for the cohort aged 25–29 and to almost 18 for the cohort aged 15–19. A similar upward shift amounting to more than three years is also shown for the ages at which 75 per cent of the women in each cohort had entered first marriage.

A concomitant tendency for the effective nuptial span to be expanded into a wider age range is also shown by the increase in the inter-quartile range, from 5 years for the older cohorts aged 35 and over, to 5.7 years for the cohorts currently at ages 30–34, and to 7.4 years for the cohort currently aged 25–29.

Of special interest, however, is the trend in the median age at first marriage, ie the age by which half of the women of any given cohort had entered into a first marriage. The figures in table 3.4 show that the median age at first marriage has risen from less than 17 years for the cohorts of women currently at ages 35 and over, to 17.5 for women at ages 30–34, 18.8 for women at ages 25–29, and to 19.5 for those currently at ages 20–24. Information on women in their late teens suggests that the upward shift in age at first marriage and the tendency for first marriages to be spread over a wider age range was continuing in 1980.

3.4 DIFFERENTIALS IN AGE AT FIRST MARRIAGE

As previously mentioned, age at first marriage is a product of various socio-economic and demographic factors. Although cultural as well as other social systems may encourage and maintain a young age pattern of marriage, differentials by various social characteristics have usually been observed in different societies.

Attention therefore is turned here to the question: 'Does the place where people live or their educational background or their occupational status make a difference to age at marriage?'.

The 45 million Egyptians live on farms, in villages, in smaller urban communities, and in large central cities. Mean age at first marriage, as will be indicated, does indeed vary by type of place of residence, by region, by the amount of education the wife has acquired, and by the occupation of the husband.

Data from the household survey permit the investigation of group variation in age at marriage separately for males and for females, by two background variables: type of place of residence and region of residence. Table 3.5 — based on the household survey — shows the proportions ever married for males and for females by age according to region of residence and type of place of residence.

The table shows significant differences in the timing of first marriage for both men and women between urban and rural communities. For men, the percentage ever married at ages 25–29 is 45 per cent for urban areas and 69 for rural areas. For women at ages 20–24, the percentage ever married increases from 49 in urban areas to 78 in rural areas.

There are also significant differences in the timing of first marriage according to region of residence. Thus, men and women in Upper Egypt exhibit a much younger age pattern of marriage than those living in Metropolitan or Lower Egypt.

One of the useful tools of analysing these regional differences in the tempo of nuptiality is provided by condensing the information on the proportions ever married into a single statistic measuring the centre or location of the distribution. One such measure, introduced by Hajnal in 1953, is termed the singulate mean age at marriage (SMAM). It is interpreted to be the mean age at first marriage of those persons who marry by age 50; ie SMAM measures the mean number of years spent single among persons ultimately marrying. In this report, as is usual, it is calculated by adding the proportion

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Table 3.5 Percentages ever married for males and females by five-year age groups, according to the EFS 1980 household survey

	Age							
	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49
A Males								
All Egypt	—	3.3	21.9	57.2	85.1	94.0	97.6	99.1
Urban Egypt								
All urban	—	2.0	12.8	45.5	79.5	90.8	96.1	98.7
Metropolitan	—	1.0	10.6	40.6	75.4	88.8	95.2	98.6
Urban: Lower Egypt	—	4.0	13.4	51.2	82.3	92.1	96.5	98.3
Urban: Upper Egypt	—	2.2	20.6	52.7	87.3	96.5	98.9	99.8
Rural Egypt								
All rural	—	4.3	29.8	69.3	90.7	96.9	99.1	99.4
Rural: Lower Egypt	—	3.4	26.6	66.6	89.3	97.0	99.4	99.4
Rural: Upper Egypt	—	5.8	34.9	74.1	93.1	96.8	98.6	99.5
B Females								
All Egypt	0.7	22.2	64.4	86.1	96.4	97.8	97.8	98.5
Urban Egypt								
All urban	0.2	14.2	49.2	80.1	96.0	97.4	97.0	98.8
Metropolitan	0.1	11.4	45.0	75.9	95.1	97.0	97.3	98.7
Urban: Lower Egypt	0.3	15.5	49.3	83.9	95.8	98.6	98.0	99.8
Urban: Upper Egypt	0.4	21.4	64.7	90.4	96.7	97.4	96.2	99.8
Rural Egypt								
All rural	1.1	28.9	77.8	92.3	96.6	98.2	98.5	98.3
Rural: Lower Egypt	0.9	22.5	73.2	90.8	96.6	98.1	99.1	98.3
Rural: Upper Egypt	1.4	39.6	84.5	94.4	96.7	98.3	97.6	98.2

currently single at successive ages as though they referred to a single real cohort of men and women. The SMAM thus calculated summarizes the experience of all the persons enumerated in the different ages at a given point in time and does not refer to any real cohort. Changes in the age at first marriage for females may also be quantified by using the individual survey data to find proportions of women single and ever married five years before the survey, if no change in the proportion ever married at ages 45–54 is assumed.

Table 3.6 gives the values of the singulate mean age at marriage for men for 1980, and for women for 1980 and

Table 3.6 Singulate mean age at marriage for males in 1980, and for females in 1980 and 1975

Region	Males	Females		
	1980	1980	1975	Difference
All Egypt	27.2	21.3	20.4	1.0
Urban Egypt				
All urban	28.9	23.0	21.9	1.1
Metropolitan	29.7	23.6	22.4	1.3
Urban: Lower Egypt	28.3	22.8	21.8	1.1
Urban: Upper Egypt	27.1	20.7	20.1	0.6
Rural Egypt				
All rural	25.6	19.9	19.0	0.9
Rural: Lower Egypt	26.0	20.5	19.6	1.0
Rural: Upper Egypt	24.9	18.8	18.1	0.7

1975, according to place of residence. The value of this mean age at marriage for 1980 is 27.2 for males and 21.3 for females. The value of SMAM for females five years before the survey is 20.4. This suggests that the mean age at first marriage for females has increased during the period 1975–80 by about one year.

A fairly uniform gradient of mean age at first marriage for males and for females is shown in table 3.6 and figure 3.3, shading downward from the oldest age at marriage in metropolitan areas (Cairo and Alexandria), to the youngest age in rural Upper Egypt. The rise in the female age at first marriage during the period 1975–80 has been smallest in Upper Egypt (8 months) and highest in metropolitan Egypt (16 months). Lower Egypt shows an intermediate change of about 12 months.

The individual survey data permit the examination of differentials in age at first marriage by several other background characteristics. It should be noted, however, that the restriction of the individual survey to ever-married women will lead to a bias in favour of selecting women who marry young, ie will lead to underestimating the mean age at first marriage of the birth cohorts considered, thus obscuring genuine changes. This is known as the 'censoring effect'.

In order to remove some of the censoring effect, a pivotal age is selected, say age 25, and mean age at first
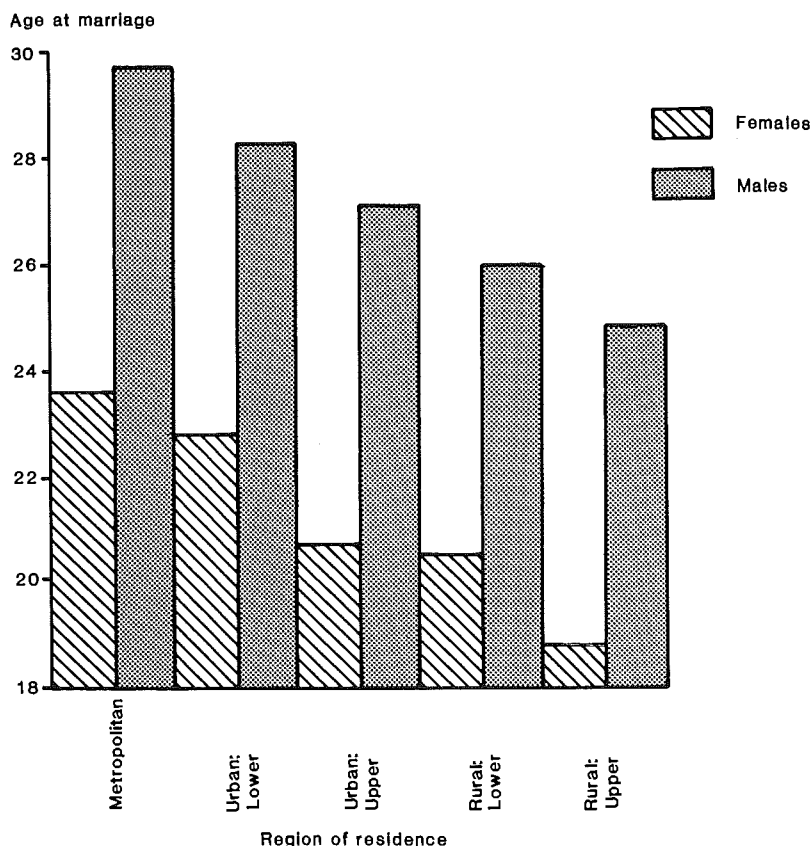
Age at marriage

Figure 3.3 Singulate mean age at marriage by region

marriage is calculated for those women who were at ages 25 or more and who had first married before age 25. Out of the total of ever-married women, a total of 6075 is included in that subgroup, thus accounting for over 69 per cent of the total sample. Of the remaining 2713 ever-married women, there were 2276 women under 25 years of age, and 437 women who married at the age of 25 or over.

The mean age at first marriage for women aged 25–49 (who married at ages under 25) is shown in table 3.7 for categories of various background variables. It is not necessary to show more detailed classification of the data by age since the pattern is more or less the same for any given age group, apart from some unsystematic fluctuations.

The differences in the average age at first marriage according to type of residence and region shown by the individual survey tend to be much narrower than the differences shown by the household survey. The table also shows a positive relationship between level of education and age at first marriage, with a difference between the mean age at first marriage for women who are illiterate and never attended school and those with primary education amounting to almost two years. Mean

age at first marriage then increases from 18.6 years for women with primary education to 20.8 for women with secondary education and to 22.3 for those with university education.

Husband's occupation is also associated with age at marriage. The lowest mean age at marriage is shown for the wives of farmers and agricultural and service workers, and the highest for those whose husbands are in professional occupations.

The data however suggest that the recent upward shift in the age at first marriage has been produced by the young cohorts, which include women who are currently under 25 years of age. The exclusion from the individual data of women marrying at age 25 or more prevents study of more recent differentials.

3.5 MARITAL STABILITY

In Egypt, just as formation of a marital union provides the social setting within which childbearing occurs, marital dissolution — either by the death of one of the spouses or by divorce or separation — directly diminishes the likelihood of childbearing, unless an

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Table 3.7 Mean age at first marriage for women who first married before age 25 and who are currently at ages 25–49, by background characteristics

Socio-economic characteristic	Mean age at first marriage	Number of women
All Egypt	17.3	6075
A Wife's characteristics		
Type of place of residence		
Urban	17.8	2624
Rural	16.8	3451
Region of residence		
Cairo	18.0	1140
Alexandria	18.0	355
Lower Egypt	17.4	2684
Upper Egypt	16.6	1896
Type of locality		
Metropolitan	18.0	1495
Cities: Lower Egypt	17.8	372
Cities: Upper Egypt	17.1	159
Towns: Lower Egypt	18.2	330
Towns: Upper Egypt	16.8	270
Rural: Lower Egypt	17.1	1982
Rural: Upper Egypt	16.5	1467
Level of education		
Illiterate: no school	16.8	3664
Illiterate: some school	17.0	1125
Can read and write	17.9	619
Primary	18.6	286
Secondary	20.8	273
University	22.3	108
Pattern of work		
Before and after marriage	18.7	623
Before marriage only	17.7	291
After marriage only	16.8	557
Never worked	17.1	4604
B Husband's characteristics		
Level of education		
Illiterate: no school	16.7	2780
Illiterate: some school	17.0	311
Can read and write	17.0	1596
Primary	17.6	514
Secondary	19.2	532
University	20.6	342
Occupation		
Prof., tech. and admin.	19.8	538
Clerical	18.8	315
Sales	17.1	422
Farmers	16.5	1298
Agricultural workers	16.7	989
Services	16.7	778
Manual	17.5	1729

Source: Table 1.1.3

individual remarries. Remarriage may depend on factors such as a woman's age, the number of children she has already had, and the reason her first marriage ended. The combination of first marriage, marriage dissolution and remarriage influences fertility in complex ways. For example, dissolution of a first marriage at an early age, followed almost immediately by remarriage, has a different effect on fertility than divorce or widowhood at a later age with or without remarriage.

In this section, marital stability will be examined by considering the following four indicators:

Status of first marriage

Prevalence of remarriage following dissolution of the first marriage, and number of times married

Current marital status

Mean proportion of the time since first marriage spent in the married state.

3.5.1 Status of first marriage

Table 3.8 shows the per cent distribution of all ever-married women according to status of first marriage. Overall, 84 per cent of ever-married women are still in their first marriage. Of the remaining 16 per cent, 7 per cent had their first marriages dissolved by death of husband, and 9 per cent by divorce or separation.

The proportion of women whose first marriages had been dissolved shows the steady rise with duration of marriage that would be expected simply on the basis of accumulated risk but at a relatively high level; from about 5 per cent for women who entered first marriage less than five years ago to 16 per cent for women who first married 10–14 years ago and to as much as 30 per cent for those who first married 25–29 years ago. However, as table 3.8 shows, divorce is the leading cause of dissolution of first marriage not only in the early years of marriage but also at longer marital durations among women marrying under age 20. For example, about 16 per cent of the women who first married 15–19 years ago under the age of 20 had their first marriages dissolved, with divorce accounting for about three-fifths of these dissolved marriages. The figures also suggest that most divorces appear to occur in the first ten years or so of marriage.

3.5.2 Remarriage and number of times married

Since a relatively high proportion of first marriages are still intact, the proportion of women marrying more than once is relatively low. This may be seen from table 3.9 which gives a summary picture of the overall pattern of remarriage.

The first point to note is that most women (91 per cent) married only once, while 8 per cent married twice and less than one per cent married three or more times. Of the 16 per cent of women whose first marriage was dissolved, about 55 per cent have remarried. The table also shows, among women whose first marriage was dissolved, that the proportion remarried increases from 26 per cent for

Table 3.8 Per cent distribution of all ever-married women according to status of first marriage, by years since first marriage and by age at first marriage

Age at first marriage	Years since first marriage	Undissolved	Dissolved by			Total	Number of women
			Death of husband	Divorce or separation	Total		
All	All	83.6	7.2	9.2	16.4	100	8788
	<5	94.7	0.5	4.8	5.3	100	1916
	5–9	88.5	2.9	8.6	11.5	100	1664
	10–14	84.2	5.6	10.2	15.8	100	1390
	15–19	84.3	6.8	8.9	15.7	100	1308
	20–24	76.1	11.9	12.0	23.9	100	1108
	25–29	70.2	18.0	11.8	29.8	100	883
	30+	62.8	23.3	13.9	37.2	100	519
Under 20	All	82.0	7.8	10.1	18.0	100	6791
	<5	94.2	0.3	5.5	5.8	100	1197
	5–9	87.5	2.9	9.6	12.5	100	1198
	10–14	84.1	5.2	10.8	15.9	100	1041
	15–19	83.9	6.4	9.7	16.1	100	1084
	20–24	75.6	11.7	12.6	24.4	100	948
	25–29	70.5	17.4	12.1	29.5	100	804
	30+	62.8	23.3	13.9	37.2	100	519
20 and over	All	89.1	5.2	5.8	10.9	100	1997
	<5	95.5	0.8	3.6	4.5	100	719
	5–9	91.2	2.8	6.0	8.8	100	466
	10–14	84.5	6.9	8.6	15.5	100	349
	15–19	86.2	8.9	4.9	13.8	100	224
	20–24	78.8	13.1	8.2	21.3	100	160
	25–29	67.1	24.1	8.9	32.9	100	79
	30+	—	—	—	—	—	—

Source: Table 1.2.1

Table 3.9 Characteristics of remarriage by years since first marriage

Years since first marriage	Number of marriages				Of women whose first marriage was dissolved, percentage who remarried	
	One	Two	Three or more	Total	Per cent	Number of women whose first marriage was dissolved
<5	98.6	1.4	0.0	100	25.7	101
5–9	93.1	6.6	0.3	100	60.2	191
10–14	90.3	9.3	0.5	100	61.4	220
15–19	90.2	8.8	1.0	100	62.4	205
20–24	86.4	12.5	1.2	100	57.0	265
25–29	86.0	12.6	1.4	100	47.1	263
30+	78.8	19.5	1.7	100	57.0	193
All	91.0	8.3	0.7	100	54.9	1438

Source: Tables 1.3.1 and 1.3.2

women who first married less than 5 years ago to 60 and 61 per cent for those whose first marriage was 5–9 and 10–14 years ago, respectively. Figures on remarriage according to age at first marriage (table 3.10), indicate that the incidences of divorce and remarriage are much higher for those first marriages which occurred when the woman was under age 20.

Differentials by certain socio-economic characteristics in the proportion of women with dissolved first marriage and the percentage who remarried are shown in table 3.11. Marital dissolution appears to be more common among women living in rural areas than in urban areas, among inhabitants of Upper Egypt than in other regions, among illiterate women than those with some education and among the women whose husbands have occupations in the sales, service and the agricultural sectors than other wives. There is also a striking association between woman's pattern of work and dissolution but the causal nature of this relationship is ambiguous.

Table 3.10 Characteristics of remarriage by age at first marriage

Age at first marriage	Number of marriages				Of women whose first marriage was dissolved, percentage who remarried	
	One	Two	Three or more	Total	Per cent	Number of women whose first marriage was dissolved
Under 20	89.5	9.7	0.8	100	58.4	1221
20 and over	96.3	3.5	0.2	100	34.2	217
All	91.0	8.3	0.7	100	54.9	1438

Source: Derived from tables 1.2.1 and 1.3.1

Women who work may be more prone to dissolution; conversely women who lose their husbands may be forced by necessity to start work.

It should be noted that the small number of cases involved for many subgroups makes interpretation of data on remarriage quite limited. Nevertheless it may be seen that the proportion remarried is higher in Upper Egypt than in other regions, and higher among illiterate women than among those literate.

3.5.3 Current marital status

The net effect of the three factors, first marriage, dissolution of marriage and remarriage, on the current marital status is shown in table 3.12. The term marital status as used here classifies ever-married women into three categories: currently married, widowed, and divorced or separated.

As may be seen, at the time of the survey, 91.2 per cent of all ever-married women in the sample were married, about 5.5 per cent widowed and 3.3 per cent divorced or separated. The proportion currently married decreases from about 94 per cent for those with marriage durations less than 20 years, to about 83 per cent for those with 20 or more years marital duration, mainly due to the higher incidence of widowhood at longer marital durations.

3.5.4 Time spent in the married state

The final indicator of marital stability is the proportion of time spent in the married state since first marriage. Figures on this quantity by current age and by age at first marriage are shown in table 3.13. For any particular current age/age at marriage combination, the proportion of time spent in the married state since first marriage consists of the sum of durations of all marriages divided by the total duration since first marriage; the result is expressed as a percentage. This proportion, therefore, summarizes the net effect of marriage dissolution and remarriage, and provides a general good indication of the woman's total duration of exposure to the risk of conception.

It has been observed that about 16 per cent of first marriages had been dissolved; about 55 per cent of women whose first marriages were dissolved had remarried; and about 91 per cent of all ever-married women in the sample were currently married. This suggests that the effect of dissolution of first marriage was compensated for by a relatively high rate of remarriage. It would, therefore, be expected that the proportion of time spent in the married state since first marriage for all ever-married women is also relatively high.

The figures in table 3.13 confirm this expectation. The proportions of time spent in the married state are uniformly high and do not vary substantially with either current age or age at marriage. The average percentage of time spent in the married state for all ever-married women is 94 per cent. The figure is above 95 per cent for 78 per cent of the sample and about 93 for the remaining 22 per cent. This suggests that marital dissolution is likely to have only a very minor depressing effect on the overall level of marital fertility in Egypt.

As mentioned in chapter 2, the two basic classificatory variables used in presentation and analysis of the results of the survey are age and duration (in years) since first marriage. The main reason for classifying the sample by duration since first marriage is to control for exposure to the risk of childbearing. Further, women marrying about the same time (ie women comprising a marriage cohort) often share certain values and experiences — for example, availability or non-availability of contraceptive methods — at similar points in their family building process. This consideration is particularly important in Egypt where many of the relevant family planning facilities are only of recent origin.

The high proportion of time spent in the married state since first marriage shown by the figures in table 3.13

Table 3.11 Percentage of ever-married women whose first marriage was dissolved and percentage who remarried, by background characteristics

Socio-economic characteristic	Percentage of women whose first marriage was dissolved	Number of women whose first marriage was dissolved	Per cent remarried
All Egypt	16.4	1438	54.9
A Wife's characteristics			
Type of place of residence			
Urban	14.9	553	56.2
Rural	17.4	885	54.0
Region of residence			
Cairo	16.6	265	55.5
Alexandria	13.3	63	44.4
Lower Egypt	14.6	567	52.9
Upper Egypt	19.2	543	57.8
Type of locality			
Metropolitan	15.9	328	53.4
Cities: Lower Egypt	13.4	73	53.4
Cities: Upper Egypt	13.7	32	62.5
Towns: Lower Egypt	12.9	61	67.2
Towns: Upper Egypt	15.1	59	61.0
Rural: Lower Egypt	15.1	433	50.8
Rural: Upper Egypt	20.4	452	57.1
Level of education			
Illiterate: no school	18.4	945	57.0
Illiterate: some school	16.1	265	57.4
Can read and write	14.7	126	46.0
Primary	13.6	56	48.2
Secondary	6.4	32	34.4
University	6.2	14	14.3
Pattern of work			
Before and after marriage	15.1	154	44.8
Before marriage only	12.4	60	60.0
After marriage only	31.7	210	49.0
Never worked	15.3	1014	57.3
B Husband's characteristics			
Level of education			
Illiterate: no school	20.9	795	55.6
Illiterate: some school	10.5	57	71.9
Can read and write	15.4	343	57.4
Primary	13.2	98	55.1
Secondary	10.8	96	41.7
University	8.5	49	30.6
Occupation			
Prof., tech. and admin.	10.3	93	31.2
Clerical	12.3	56	48.2
Sales	20.5	112	58.0
Farmers	16.5	305	57.0
Agricultural workers	18.3	271	51.3
Services	18.7	192	60.4
Manual	16.1	407	58.5

Source: Tables 1.2.2 and 1.3.2

means that duration since first marriage is a satisfactory criterion of classification to the extent that it provides a good indication of the woman's total duration of exposure to the risk of conception.

3.6 SUMMARY

The data from the EFS shows substantial shifts in the age patterns of first marriage in Egypt as we move from the oldest to the more recent birth cohorts. First-marriage rates have declined at almost all ages, markedly so at ages under 25, attaining lower values with each succeeding cohort. The net effect has been a change in first marriage pattern from an early peak to an early broader and lower peak pattern.

The remarkable shifts in the tempo of nuptiality

Table 3.12 Per cent distribution of all ever-married women according to current marital status, by years since first marriage

Years since first marriage	Currently married	Currently not married			Total	Number of women
		Widowed	Divorced and separated	Total		
<5	95.8	0.4	3.8	4.2	100	1916
5–9	94.8	1.8	3.4	5.2	100	1664
10–14	93.0	3.7	3.3	7.0	100	1390
15–19	93.0	5.3	1.7	7.0	100	1308
20–24	87.0	8.8	4.2	13.0	100	1108
25–29	81.3	15.3	3.4	18.7	100	883
30+	78.4	18.1	3.4	21.6	100	519
Total	91.2	5.5	3.3	8.8	100	8788

Source: Table 1.5.1

Table 3.13 Average percentage of time since first marriage which has been spent in the married state by all ever-married women, by age at first marriage and by current age

Current age	Age at first marriage					All	Number of women
	<15	15–19	20–24	25–29	30+		
<20	93.3	97.3	—	—	—	95.4	678
20–24	94.5	96.6	98.1	—	—	96.0	1598
25–29	93.7	96.3	96.7	95.4	—	95.7	1696
30–34	96.0	96.5	96.1	97.8	91.8	96.3	1523
35–39	93.1	95.2	95.8	94.3	94.0	94.5	1329
40–44	92.5	93.5	94.3	97.1	89.0	93.4	1061
45+	92.0	92.6	90.5	89.2	91.7	92.0	903
All	93.3	94.8	94.6	94.7	91.1	94.3	
Number of women	2015	4776	1560	360	77		8788

Source: Table 1.4.1

reflect, of course, an upward trend in age at marriage. The results indicate that over the last 30 years or so, average age at first marriage has risen by about three years; for example, the median age at first marriage has increased from 16.6 years for the older cohort to 19.5 years for the youngest cohort. Accompanying the trend toward later marriage has been a tendency for first marriages to become spread over a wider age range. The singulate mean age at marriage in 1980 is estimated at 27.2 for males and 21.3 for females. Over the five-year period 1975–80, this mean for females has increased by one year.

These changes have led to considerable shifts in the age composition of females by marital status particularly among the younger cohorts. Thus, women of every age group under 45 years have shared in the long term a decline in the proportion ever married, but the decreases have been substantial at ages under 22. In fact, the decline in teenage marriages explains a large part of the recent changes in nuptiality in Egypt. It looks, however, as if each of the birth cohorts studied had its own pattern of age at marriage, for the decreases in the proportions of age at marriage, for the decreases in the proportions of women ever married at younger ages, shown successively for each of the cohorts born since the late 1940s, did not represent a deviation around a previously established pattern but rather a departure from it.

Age at first marriage is strongly associated with type of place and region of residence. The youngest marriage pattern is found in Upper Egypt and the oldest in Cairo and Alexandria. The data also show a definite positive relationship between level of education and age at first marriage. It may be inferred that increasing educational opportunities for young Egyptian women is largely responsible for the recent decline in early marriage and the upward trend in age at marriage particularly in urban areas.

About 16 per cent of all ever-married women reported dissolution of their first marriages. Divorce was the cause of dissolution of first marriage in 56 per cent of all dissolved marriages. The incidence of divorce is much higher among women who married under age 20. However, about 55 per cent of women whose first marriages were dissolved had remarried by the time of the survey.

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These changes in marriage patterns in Egypt must have had the effect of shifting tens of thousands of first marriages that ordinarily would have occurred at somewhat younger ages to the later ages of the nuptial span. As will be shown later, this trend has altered the age pattern of births in Egypt for it has had the effect of decreasing marital exposure to childbearing by deflating the proportion of women who are potential mothers at teen ages. Age at first marriage is then, not surprisingly, negatively correlated with cumulative fertility achieved at younger ages, though neither can be deduced from the other.

CHAPTER 4
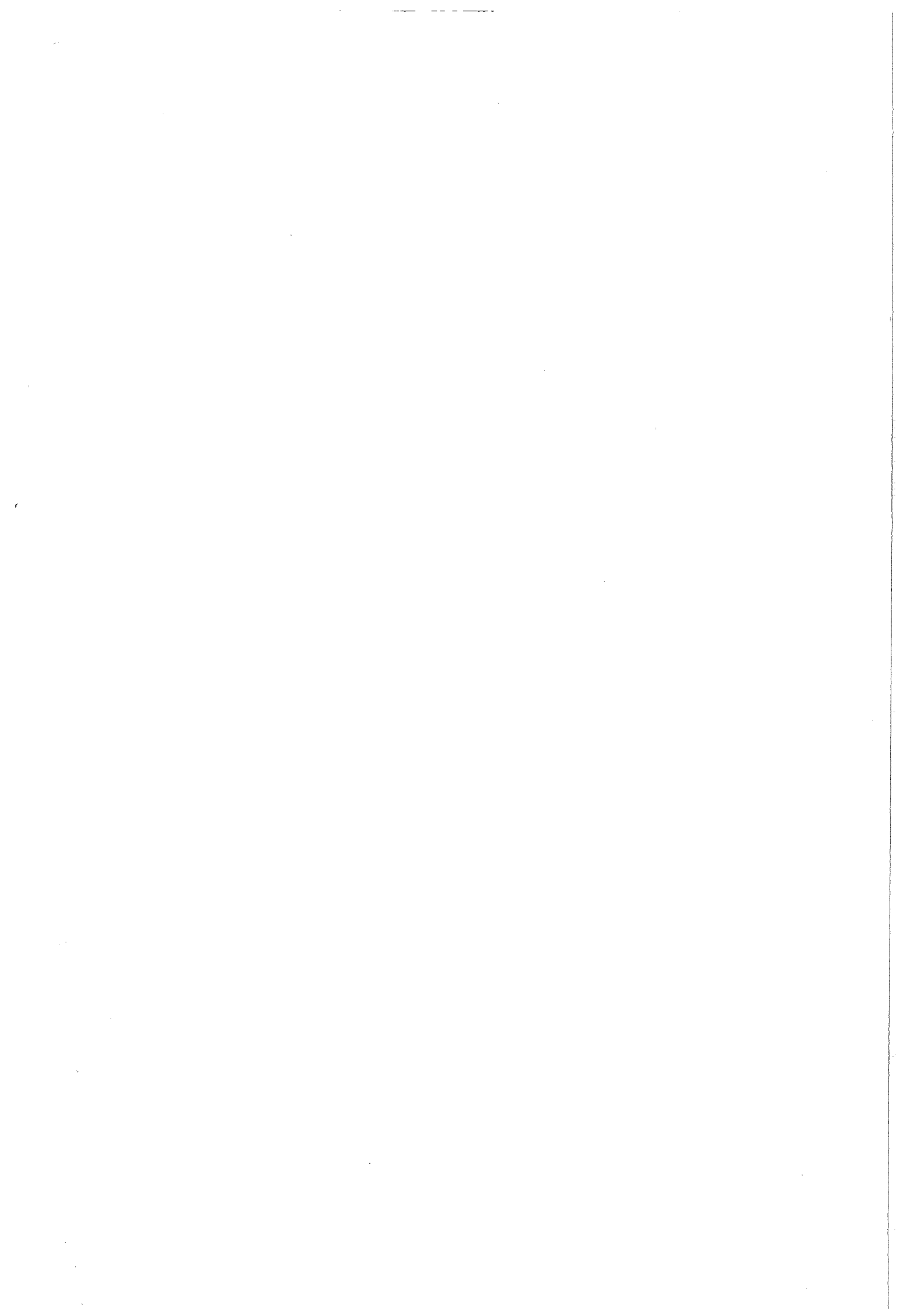
FERTILITY

4.1 INTRODUCTION

The estimation of levels, differentials and trends in fertility is a primary objective of all fertility surveys. In addition to its descriptive utility, the identification of the direction and magnitude of fertility differentials is an essential first step towards an understanding of the determinants of fertility.

The analysis presented in this chapter is based on the data collected in the maternity history section of the EFS 1980 individual questionnaire for ever-married women aged under 50 years. Special care was taken to devise and administer a set of carefully worded questions and interviewing procedures in order to obtain as accurate and reliable data as possible. The procedures followed for collecting data on fertility have already been outlined in volume I.

Except in highly literate and numerate societies, retrospective birth history data of the type collected in the EFS are rarely free from error. Error may take the form of total omission of births, particularly by older women, or the misstatement of dates of birth. These two problems may be compounded by errors in the recorded ages of respondents themselves, which distort the age pattern of fertility. These types of error also tend to affect the pattern of differences in fertility between the various socio-economic groupings. A detailed evaluation of the EFS fertility data (not shown here) has revealed that omission of births was negligible and that misplacement of dates of birth was of a modest magnitude.

The bulk of the analysis in this and later chapters is oriented around birth cohorts and marriage cohorts. Birth cohorts identify women who were born in a given time period and were therefore in a particular age range at the time of the survey. Marriage cohorts identify the women who entered first marriage during a given time period and occupy the same interval of years since first marriage. The term 'marital duration' will refer to years since first marriage, even if marital dissolution, remarriage, etc, has occurred since that initial event.

Women of about the same age will tend to have shared certain socializing experiences, such as the prevailing level of education, health conditions, political events, etc. Age is also a commonly applied classificatory variable in census and other survey work. Age is pertinent to fertility, in particular, and especially in countries such as Egypt where there are large numbers of births to older women, because it is related to fecundity. This latter is the biological capacity to conceive; it is known to rise sharply from menarche at about age 13 to a peak around age 20, followed by a gradual decline in the 30s which becomes abrupt in the early 40s with the onset of menopause. Few births occur after age 45.

Marital duration is also a useful variable because, by and large, it measures the accumulated years of exposure to the risk of childbearing (in Egypt, fertility before marriage is almost nil). Women in the same marriage cohort also tend to share common attitudes towards family size and contraception.

Demographers have developed a large number of measures to describe different aspects of fertility. There are two fundamental dimensions to any individual woman's childbearing: how many children she has had (the 'quantity' or 'level') and how quickly she has had them (the 'tempo'), and by extension these apply to any aggregate or subgroup as well. The central problem of fertility analysis is that these two dimensions cannot be fully separated. It is for this reason that the results using one measure will not always seem to correspond with the results based on another measure.

This chapter begins with a discussion of the level and pattern of cumulative fertility as indicated by the number of children ever born or current parity. This measure is based on cross-sectional view at the time of the survey and makes no direct reference to the timing of fertility. Current parity by age, marital duration, age at first marriage, and selected background characteristics is discussed in section 4.2.

The pattern of early marital fertility — rate of childbearing in the first five years of marriage — is considered in section 4.3. Measures employed in this section are the incidence of childlessness, the interval between marriage and first birth, and the mean number of births in the first five years of marriage according to socio-economic characteristics. Recent marital fertility based on the number of births in the past five years to women who were continuously married during those five years is analysed in section 4.4.

Section 4.5 discusses the level and pattern of current fertility. Three indicators of current fertility are employed: the proportion of women currently pregnant, age-specific fertility rates, and total fertility rates. Fertility trends are discussed in section 4.6 using data derived from the retrospective maternity history collected in the individual survey. In the concluding section of the chapter a brief synthesis of the various findings is presented.

4.2 CURRENT PARITY

4.2.1 Introduction

In this section our measure of achieved fertility will be the accumulated number of live births that each woman has had up to the date of the survey. This number is referred to as the woman's 'current parity'. The date on current parity or the number of children ever born from the EFS are cross-sectional and do not refer to the reproductive behaviour of a cohort of women as it grows older. Thus, for the younger women current parity will reflect their fertility during a limited period only, while for the older women this measure comes close to their life-time fertility.

First, however, consider the sample as a whole. Table 4.1 shows that the mean parity for all ever-married women is 4.13 and for currently married women is 4.14, indicating that the effect of marriage dissolution on the fertility of the whole sample is negligible.

Table 4.1 Per cent distribution of ever-married and currently married women according to the number of children ever born

Number of children ever born	Ever-married women		Currently married women	
	All ages	Age 45–49	All ages	Age 45–49
0	11.0	3.7	11.0	3.4
1	12.3	4.1	12.2	3.5
2	12.7	4.2	12.7	2.8
3	12.2	3.7	12.4	3.4
4	10.8	7.2	10.8	6.4
5	9.4	9.4	9.4	9.2
6	8.6	10.1	8.6	9.8
7	7.4	13.0	7.3	13.3
8	5.8	12.0	5.9	12.6
9+	9.7	32.8	9.8	35.6
All	100.0	100.0	100.0	100.0
Mean parity	4.13	6.87	4.14	7.14
Number of women	8788	903	8012	714

Source: Tables 2.2.1A and 2.2.1B

The parity distribution for the whole sample shows considerable dispersion, with a skew toward the high parities. Thus, about 11 per cent of all ever-married women are childless. Of the rest, 25 per cent have had either one or two live births; 23 per cent three or four; 18 per cent, five or six; and the remaining 23 per cent, seven or more.

The distribution of the sample according to age of the woman, age at first marriage and marriage duration will, however, have a profound effect on the mean parity. This is evident from the proportion of women childless, which reaches 11 per cent for all women in the sample but less than 4 per cent for those aged 45–49. Therefore it is necessary to study parity in conjunction with controls for age and age at first marriage to gain further insight in the pattern of fertility.

4.2.2 Completed fertility

The cumulative fertility or mean number of children ever born to women aged 45–49 can be taken as indicative of the level of completed fertility provided the data for these women are not subject to bias arising from misreporting of the age of woman and from recall lapse which affects the reporting of the number of children.

As shown by table 4.1, the average woman of age 45–49 at the date of the survey who had ever been married had had seven (6.87) live births. However, the distribution of these women by parity still exhibits a great deal of dispersion. Roughly speaking, one-third of these women are within one child of this mean (ie 6, 7 or 8 children), one-third are below this range (5 or less births), and one-third are above (9 or more). One woman in eight has had a family below 'replacement' level (0, 1 or 2 live births), but at the other extreme, one woman in three had had 9 or more children.

The fertility of currently married women aged 45–49 is also shown in table 4.1. As may be seen no significant differences exist between the distributions of ever-married and currently married women by the number of children ever born.

One reason, however, for examining the group of currently married women aged 45–49 is that it gives an estimate of the level of primary sterility. Only 3.4 per cent of these women had no children at all. This figure may be taken as the percentage of couples in which either the husband or the wife is incapable of having any children at all. In international terms, this is a low level of primary sterility and implies a level of general health in excess of the thresholds below which fertility is inhibited.

Another way of describing the completed fertility of the Egyptian women is in terms of 'parity progression ratios', (PPR). Of women who ever achieved specific parities, these ratios give the proportion who later had at least one more child. For example, the parity progression ratio for parity 4 is derived by dividing the number of women who reported having five or more live births by the number of women who had four or more live births. In table 4.2 it can be seen that over 96 per cent of ever-married women did have a first child, and that up to parity 4 over 90 per cent of women went on to have another child. Even of women who already had nine live births, 66 per cent went on to have a tenth. For currently married women the proportions are only slightly higher due to the already mentioned low effect of marriage dissolution on fertility.

4.2.3 Parity within age groups

Having considered in some detail the level of completed fertility, attention now shifts to those women whose families are still being formed.

The mean parities of successive five-year age groups of all ever-married women obtained from the 1980 Egyptian Fertility Survey (EFS) are shown in table 4.3 together with corresponding figures derived from the 1974–5 National Fertility Survey (NFS). As may be seen, the mean parity for women in the NFS is consistently and appreciably lower than the mean parity as calculated on the basis of the information collected in the EFS, in almost all age groups. The difference tends to increase as we move from the youngest to the older cohorts and reaches almost one child for women at ages 45–49.

In the light of the current controversy in Egypt about the recent trend in fertility, it might be tempting to use the comparison provided by the figures in table 4.3 as

Table 4.2 Parity progression ratios, per 1000 ever-married and currently married women aged 45–49

Parity progression	Ever-married women	Currently married women
0 to 1	963	966
1 to 2	957	964
2 to 3	954	970
3 to 4	957	961
4 to 5	915	927
5 to 6	878	885
6 to 7	851	862
7 to 8	775	784
8 to 9	730	738
9 to 10	656	657
10 to 11	528	539
11 to 12	608	611

Source: Derived from tables 2.2.1A and 2.2.1B

Table 4.3 Mean number of children ever born to ever-married women by current age from various sources

Age	National Fertility Survey 1974–75	Egyptian Fertility Survey 1980
<20	0.62	0.63
20–24	1.49	1.81
25–29	2.72	3.07
30–34	3.98	4.61
35–39	5.03	5.79
40–44	5.67	6.46
45–49	6.08	6.87
All (under 50)	3.97	4.13

indicative of a rising trend in fertility since 1974. But this would be misleading. Careful examination of the information on fertility collected in each of these two surveys, reveals that the NFS 1974–5 systematically under-enumerated the number of children ever born and that the more live births a woman had, the more likely it was that one or more were not reported. The methods used in collecting these data were quite different and comparisons between the results of the two surveys should, therefore, be interpreted with caution.

A more detailed picture of current parity by age groups as shown by the EFS is given in table 4.4. As may be seen, the proportion of childless women declines rapidly. These data also show a high level of fertility by women of all ages. Among women aged 20–24, the mean number of births is 1.8 and 30 per cent of these women have had three or more live births. Among women aged 25–29, who have had on average 3.1 children, 22 per cent have already had five or more children, and among women aged 35–39, 42 per cent have had seven or more children. Thus, as age increases, the distribution of women by current parity becomes more spread and the modal parity tends to occur at a higher number with a lesser magnitude. These data indicate that fertility in Egypt must be considered very high.

4.2.4 Parity within age at marriage groups

In Egypt, where deliberate birth control is not widely practised particularly in the rural communities, age at first marriage can be an important determinant of achieved fertility. On one hand, in conjunction with current age, it defines the length of the risk of exposure to pregnancy. On the other hand, women marrying at very young ages will experience an initial period of low fertility due to adolescent subfecundity, while women marrying at 30 or more are likely to be less fecund.

Table 4.5 provides data on current parity by current age and by age at first marriage. For all ever-married

Table 4.4 Per cent distribution of ever-married women according to the number of children ever born

Current age	Number of children ever born						Total	Mean
	0	1–2	3–4	5–6	7–8	9+		
<20	52.5	44.2	3.1	0.1	0.0	0.0	100	0.63
20–24	18.1	52.1	27.6	1.9	0.4	0.0	100	1.81
25–29	8.5	31.8	38.0	17.6	3.8	0.3	100	3.07
30–34	4.1	16.0	28.0	30.7	16.1	5.1	100	4.61
35–39	3.2	9.7	18.7	26.5	26.7	15.2	100	5.79
40–44	4.1	7.4	13.1	24.8	25.1	25.5	100	6.46
45–49	3.7	8.3	10.9	19.5	25.0	32.6	100	6.87
All	11.0	25.0	23.0	18.0	13.2	9.7	100	4.13

Source: Table 2.2.1B

Table 4.5 Mean number of children ever born to ever-married women, by age at first marriage and by current age

Current age	Age at first marriage							All
	<15	15–17	18–19	20–21	22–24	25–29	30+	
<20	1.0	0.5	0.1	—	—	—	—	0.6
20–24	2.9	2.1	1.3	0.8	0.4	—	—	1.8
25–29	4.6	3.8	3.1	2.2	1.5	0.6	—	3.1
30–34	6.1	5.3	4.5	3.4	2.8	1.7	0.4	4.6
35–39	7.1	6.3	5.3	4.7	4.1	2.6	1.1	5.8
40–44	7.6	6.8	6.4	5.5	4.9	3.5	1.5	6.5
45+	8.0	7.3	6.8	5.4	5.1	4.5	1.8	6.9
All	5.6	4.3	3.7	3.1	2.6	2.0	1.4	4.1

Source: Table 2.2.4B

women, the mean parity is 5.6 for women married below age 15; this declines to 4.3 births for women married at ages 15–17, to 3.7 for women married at ages 18–19, 3.1 for women married at ages 20–21, and to 2.6 for those married at ages 22–24.

Within each age group, the mean parity declines steadily with increasing age at marriage. For example, among women currently at ages 30–34, the mean parity declines gradually from 6.1 for women married under age 15, to 2.8 for those married at ages 22–24. This strong negative relationship between age at marriage and fertility is caused by the fact that the length of exposure to the risk of pregnancy decreases with increasing age at marriage.

A different picture, however, of the effect of age at marriage on fertility is shown by the figures in table 4.6 which give the mean parities according to age at first marriage and years since first marriage. The fallacy of considering the data for any age-at-marriage group or for the whole sample to be representations of a cohort's reproductive behaviour is to be avoided. Nevertheless, a steady increase is clear from any cohort to the one which preceded it in date of marriage. Clearly, the women who

have been married for 25, 30, or more years will have very high fertility. The coverage of the survey was confined to women under age 50. Thus, all women with 30 or more years of marital duration will have been married before age 20. A woman who married at age 25, say, must appear in a marriage cohort (or marital duration group) no greater than 20–24 years because after 24 years of marital duration she will be 50 years old and excluded from the sample.

One reason for mentioning these constraints is that a reader who observes the mean parity of 7.8 for women with 30 or more years' marital duration, may consider this to represent 'completed' fertility better than the mean parity of 6.9 for women aged 45–49 discussed in section 4.2.2. The very fertile women in the former group comprise a select group who married very young, and who for that reason alone are unrepresentative of Egyptian women.

The figures in table 4.6 show the absence of any strong relationship between age at marriage and fertility in the first ten years of marriage, and that the tempo of fertility is generally similar within this period no matter at what age a woman marries. The effect of age at marriage

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Table 4.6 Mean number of children ever born to ever-married women, by age at first marriage and by years since first marriage

Years since first marriage	Age at first marriage							All
	< 15	15–17	18–19	20–21	22–24	25–29	30 +	
< 5	0.8	0.9	0.9	1.0	1.0	0.9	0.7	0.9
5–9	2.6	2.8	2.8	2.6	2.5	1.9	1.6	2.6
10–14	4.2	4.4	4.3	3.6	3.8	3.2	1.9	4.1
15–19	5.8	5.7	5.1	5.2	4.9	3.6	2.4[a]	5.5
20–24	6.9	6.7	6.3	5.2	5.2	5.2	—	6.5
25–29	7.5	6.9	6.5	5.5	4.7	—	—	6.9
30 +	8.0	7.6	7.2	—	—	—	—	7.8
All	5.6	4.3	3.7	3.1	2.6	2.0	1.4	4.1

[a]Less than 10 cases.
Source: Table 2.2.3B

becomes apparent, however, at longer durations of marriage. But even for the cohort of women with 20–24 years marital duration, the effect of increasing age at first marriage on achieved fertility becomes evident only for those who married after their twentieth birthday.

4.2.5 Differentials in current parity

One of the major aims of the EFS was to examine the extent to which substantial differences in fertility exist between subgroups of the population. This examination represents a first step towards an understanding of the determinants of fertility in Egypt. In table 4.7 the mean number of children ever born to ever-married women as reported in the individual survey is given by current age, and by years since first marriage, according to socio-economic characteristics. The age-standardized means are also shown in the last column of the table.

In this section, the analysis of fertility differentials will be restricted to two cohorts of women; those who are currently at ages 45–49 and those with 10–14 years' marital duration. Current parity of the first group will give an indication of differentials in completed fertility. The second group of women, those married 10–14 years ago has been selected for several reasons. These women have had approximately the same amount of exposure to childbearing. They have had a mean of 4.1 children which is almost identical with both the mean for all ever-married women, and the national mean number of children desired (to be discussed in chapter 7). These women also represent a range of ages and a broad range in age at marriage.

The completed fertility for all ever-married women is 6.9 children. The overall urban/rural difference is neg-

ligible. However, when urban and rural areas are cross-classified by region of residence, a different picture emerges. Completed fertility is lowest in Cairo (6.1 children) and Alexandria (6.5), and is highest in urban areas in Lower and Upper Egypt, reaching a maximum of 7.9 children in the towns of Upper Egypt. Rural areas exhibit an intermediate position. It should be mentioned, however, that the detailed evaluation of the maternity history data has attributed the omission of births mainly to older women living in rural Upper Egypt.

Women married 10–14 years ago exhibit the expected pattern of urban/rural differentials. The achieved fertility of these women is lowest in Cairo and Alexandria (3.6 children); it then increases to 3.9 children in the cities of Lower and Upper Egypt, to 4.2 in the towns of Lower Egypt, and to about 4.4 in the towns of Upper Egypt and in rural areas in both regions.

A strong inverse association between level of education and both completed and incomplete fertility is shown by table 4.7. The association, however, is curvilinear for completed fertility but linear for the younger cohort. Thus among illiterate women, completed fertility increases from 7.1 for women who never attended school to 7.5 for those who spent a short time at school. The same pattern is also observed when completed fertility is classified by husband's education. Among literate women (and also husbands) fertility declines rapidly as level of education increases.

The association between husband's occupation and fertility follows, generally, the expected pattern. Achieved fertility for women married 10–14 years ago, is lower among the women whose husbands are in professional and clerical occupations than among other women.

Table 4.7 Mean number of children ever born reported in the individual survey to ever-married women, by (A) current age, and (B) years since marriage, according to socio-economic characteristics

Socio-economic characteristic	A Current age				B Years since first marriage							All	
	<25	25–34	35–44	45+	<5	5–9	10–14	15–19	20–24	25–29	30+	Unstandardized	Age-standardized
All Egypt	1.5	3.8	6.1	6.9	0.9	2.6	4.1	5.5	6.5	6.9	7.8	4.1	—
A Wife's characteristics													
Type of residence													
Urban	1.4	3.3	5.4	6.8	1.0	2.6	3.8	4.9	6.0	6.5	7.9	3.9	4.2
Rural	1.5	4.3	6.6	7.0	0.8	2.7	4.4	5.9	6.8	7.2	7.8	4.3	4.2
Region of residence													
Cairo	1.4	3.2	5.1	6.1	1.0	2.5	3.6	4.7	5.7	6.1	7.3	3.7	4.0
Alexandria	1.3	3.0	5.2	6.5	1.1	2.3	3.6	4.5	5.7	6.0	8.3	3.9	4.4
Lower Egypt	1.5	3.9	6.3	7.2	0.9	2.8	4.3	5.6	6.7	7.1	8.0	4.2	4.2
Upper Egypt	1.5	4.2	6.6	7.0	0.8	2.6	4.3	5.9	6.7	7.3	7.7	4.3	4.1
Type of locality													
Metropolitan	1.4	3.1	5.1	6.2	1.0	2.4	3.6	4.7	5.7	6.1	7.6	3.8	4.1
Cities: Lower Egypt	1.3	3.1	5.4	7.4	0.9	2.6	3.9	4.5	5.8	7.0	8.6	3.8	4.3
Cities: Upper Egypt	1.8	3.6	5.9	6.8	1.1	2.9	3.9	5.8	6.4	7.1	8.5	4.2	4.4
Towns: Lower Egypt	1.6	3.3	5.5	7.4	1.1	2.9	4.2	4.9	6.0	7.1	7.8	3.9	4.1
Towns: Upper Egypt	1.5	4.2	6.8	7.9	1.1	2.7	4.4	5.6	7.3	7.5	8.3	4.5	4.4
Rural: Lower Egypt	1.5	4.2	6.6	7.1	0.9	2.8	4.4	5.9	7.0	7.1	8.0	4.4	4.3
Rural: Upper Egypt	1.5	4.3	6.6	6.8	0.7	2.5	4.3	5.9	6.7	7.2	7.5	4.3	4.1
Level of education													
Illiterate: no school	1.5	4.2	6.4	7.1	0.9	2.6	4.3	5.7	6.7	7.0	7.8	4.4	4.3
Illiterate: some school	1.5	4.1	6.7	7.5	0.9	2.9	4.1	5.6	6.7	7.3	8.6	4.4	4.2
Can read and write	1.5	3.6	5.6	6.1	1.0	2.8	3.9	5.0	6.0	6.5	7.2	4.1	4.3
Primary	1.4	3.3	4.9	5.4	1.0	2.6	3.5	4.6	5.3	6.3	6.5	3.4	3.7
Secondary	0.9	2.0	3.4	3.5	1.0	2.2	3.2	3.5	3.6	4.1	4.5	2.1	2.7
University	0.5	1.6	2.7	(4.0)	0.8	2.1	2.7	2.7	4.2	3.7	8.0	1.8	2.3
Pattern of work													
Before and after marriage	1.2	3.1	5.0	6.0	0.8	2.6	4.0	5.5	6.2	6.5	7.9	3.4	4.1
Before marriage only	1.3	3.4	6.3	6.3	0.9	2.4	4.0	5.5	6.7	7.6	7.3	3.6	3.7
After marriage only	1.6	4.0	6.2	6.8	1.1	2.5	4.0	5.4	6.5	6.3	7.5	4.8	4.3
Never married	1.5	4.0	6.2	7.0	0.9	2.7	4.2	5.5	6.5	7.0	7.9	4.2	4.2
B Husband's characteristics													
Level of education													
Illiterate: no school	1.5	4.3	6.5	6.9	0.9	2.6	4.3	5.8	6.7	6.9	7.7	4.6	4.4
Illiterate: some school	1.4	4.0	6.6	8.0	0.9	2.8	4.2	5.9	7.1	7.6	7.1	3.7	3.6
Can read and write	1.6	4.2	6.4	7.5	0.9	2.8	4.3	5.5	6.6	7.2	8.5	4.5	4.4
Primary	1.3	3.7	5.8	7.1	0.9	2.6	4.1	5.2	6.1	6.8	8.7	4.0	4.1
Secondary	1.2	2.9	4.5	5.3	1.0	2.5	3.5	4.8	5.5	5.5	6.2	2.8	3.3
University	1.1	2.0	3.4	4.0	0.9	2.4	3.2	3.6	3.8	4.0	5.5	2.3	3.2
Occupation													
Prof., tech. and admin.	1.2	2.4	4.0	5.1	0.9	2.4	3.5	4.1	4.3	5.3	7.7	2.7	3.6
Clerical	1.2	2.9	4.9	6.0	0.9	2.7	3.5	4.5	5.7	5.9	7.1	3.3	3.8
Sales	1.9	4.0	6.4	7.4	0.9	2.8	4.3	5.5	6.6	7.2	8.2	4.8	4.7
Farmers	1.5	4.6	6.8	7.6	0.8	2.8	4.5	6.1	7.1	7.6	8.0	4.8	4.5
Agricultural workers	1.4	4.3	6.5	6.4	0.8	2.6	4.3	5.8	6.7	6.6	7.6	4.2	4.0
Services	1.8	4.0	6.1	7.4	1.1	2.6	4.2	5.2	6.5	7.0	7.8	4.6	4.4
Manual	1.4	3.8	6.0	6.8	1.0	2.7	4.0	5.4	6.3	6.8	7.8	4.0	4.0

Source: Tables 2.2.5 and 2.2.6

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4.3 EARLY MARITAL FERTILITY: FIRST FIVE YEARS

4.3.1 Overall patterns

This section will examine indicators of the rate of childbearing in the first five years of marriage. Such an examination is important in at least two respects, in that it permits the study of trends, if any, in the tempo of early fertility when compared between marriage cohorts, and of the relationship between age at marriage and fertility in the early stages of childbearing.

The analysis is, of course, restricted to ever-married women whose first marriage occurred at least five years ago. Women who first married during the five years before the survey are excluded, to avoid the biases caused by incomplete exposure. Three indicators of early marital fertility will be considered: the incidence of childlessness, the interval between first marriage and first birth, and the mean number of children born in the first five years of marriage.

It should be noted that the analysis of the first birth interval is complicated by the fact that calendar month was not reported for 86 per cent of first births and had to be randomly imputed. This lack of precise information reduces the analytical power of this measure and a cautious approach is therefore necessary.

Table 4.8 shows the per cent distribution of women who first married at least five years ago, according to the interval between first marriage and first birth, and the proportion childless after five years of marriage, by age at first marriage and by years since first marriage.

By the end of the fifth year of marriage, the vast majority (89 per cent) have had at least one live birth and the mean interval between marriage and first birth is 20.8 months. As shown in table 4.8, the modal interval is 12–23 months, with sizeable proportions reporting intervals 8–11 months and 24–36 months. By the end of the second year of marriage, 62 per cent have had their first birth.

When classified by age at marriage, both the distribution and the mean first birth interval change only for the groups of women marrying very early or very late. Among women marrying before the age of 15, the effects of adolescent subfecundity can be seen. The mean length of the first birth interval rises to 23.2 months, and the proportion still childless after five years of marriage (65.6 per cent) is higher than that for any other age-at-marriage group below age 30.

Data relating to the timing of first births for three marriage cohorts appear in panel B of table 4.8. The overwhelming impression from this table is that the tempo of early marital fertility has changed very little over the last 20 years or so.

The third indicator of early marital fertility is the mean number of children born in the first five years of marriage. This mean is shown in table 4.9 by age at marriage for three successive marriage cohorts. For most women the number of births in this period will be 1, 2 or

Table 4.8 Per cent distribution of women who first married at least five years ago according to interval between first marriage and first birth, by (A) age at first marriage, and (B) years since first marriage

	Length of interval in months							All	Mean interval length	Number of women
	0–7	8–11	12–23	24–35	36–47	48–59	Per cent childless			
A Age at first marriage										
<15	0.8	11.1	40.5	16.9	9.4	5.7	15.6	100	23.2	1863
15–17	0.5	15.7	48.7	15.3	6.3	3.4	10.1	100	20.4	2675
18–19	1.1	18.3	49.0	15.6	5.3	3.5	7.0	100	19.8	1056
20–21	0.3	20.3	45.2	14.6	5.5	4.0	10.1	100	19.9	622
22–24	1.0	25.4	44.0	13.1	5.9	1.7	8.6	100	18.2	405
25–29	1.0	28.1	40.4	10.3	4.4	3.4	11.8	100	18.2	203
30+	0.0	18.8	29.2	14.6	4.2	2.1	31.3	100	19.7	48
B Years since first marriage										
5–9	0.5	16.8	45.6	15.7	7.1	3.5	10.8	100	20.6	1664
10–19	0.8	18.3	46.8	14.5	6.2	3.5	9.7	100	20.1	2698
20+	0.7	13.5	44.2	16.2	7.3	4.8	13.1	100	21.6	2510
All	0.7	16.2	45.5	15.4	6.8	4.0	11.2	100	20.8	6872

Source: Table 2.1.1

3 and the mean for all women (married at least five years) is 1.8. For the whole sample, an inverted U-shaped pattern of highest early fertility in the middle age-at-marriage groups is clear. But the table shows only small departures from the overall mean. It can also be seen that there is no evidence of any trend in early marital fertility.

4.3.2 Differentials in early fertility

In the search for differentials in this mean, discussion will focus on the number of children born in the first five years of marriage for the cohort of women married 10–19 years before the survey. The reasons for this are that by excluding the women married 20 or more years ago, the risk of under-reporting or misdating of early births is reduced, and that the cohort having 5–9 years of marital duration is only about two-thirds of the size of the 10–19 years cohort, with some resultant loss of precision. It might also be useful to recall that the data show no evidence of any trend in the early fertility. The mean number of children in the first five years of marriage is given for various subgroups of the selected cohort according to age at first marriage in table 4.10.

The inverted U-shaped pattern of highest early fertility in the middle age at marriage groups is clear. The overall distribution on this variable, within the cohort, was applied to all the other subgroups to control for a possible compositional effect of age at marriage. With virtually no exceptions, the standardized means were identical to the unstandardized means which are shown. In other words, the observed differentials cannot be traced to differentials in age at marriage.

The table shows only very small departures from the mean number of children born in the first five years of 1.9. The most interesting information in table 4.10 lies, however, in the absence of certain differentials in early fertility which were observed to exist in later fertility. To illustrate this point, figures are given in table 4.11 showing the mean parity of this cohort (with 10–19 years' marital duration) approximately ten years later, and the number of children born in the first five years of marriage.

On the average, the women who first married 10–19 years ago have given birth to 4.8 children. Of these 1.9 children or 39 per cent were born during the first five years of marriage. An examination of the data in table 4.11 provides striking evidence of spacing by certain subgroups. For example, both urban and rural women show more or less the same level of fertility in their early years of marriage, but achieved fertility of urban women is below that of rural women ten years later. The figures indicate that the groups of women who start at a high level and slow down after the first few children are mainly those residing in Cairo, Alexandria and the cities of Lower Egypt, and those with at least secondary education.

4.4 RECENT MARITAL FERTILITY: THE PAST FIVE YEARS

4.4.1 Introduction

This section will focus on the mean number of live births in the past five years to women who were continuously married during those five years. Essentially, this is analogous to the measure of early marital fertility, except that the interval is dated backwards from the date of interview, rather than forwards from the date of first marriage. However, the date of interview will vary as the fieldwork was conducted over a period of two months, thus blurring the time interval at the end points. The criterion for this indicator of recent fertility, that the woman be continuously married during the past five years, means that any particular woman will contribute either for a full five years or not at all. The virtue of the measure lies in the ease of computation, but its disadvantage stems from the fact that, among younger age groups, it selects systematically for women who married young.

Table 4.9 Mean number of children born within first five years of marriage by age at first marriage and by years since first marriage, confined to women who first married at least five years ago

Years since first marriage	Age at first marriage							All
	< 15	15–17	18–19	20–21	22–24	25–29	30+	
5–9	1.6	1.8	1.9	1.9	1.8	1.6	1.3	1.8
10–19	1.8	1.9	1.9	1.8	2.0	1.9	1.2	1.9
20+	1.7	1.9	2.1	1.9	1.8	2.2	—	1.8
All	1.7	1.9	2.0	1.9	1.9	1.8	1.2	1.8

Source: Table 2.1.2

Table 4.10 Mean number of children ever born in the first five years of marriage for women first married 10–19 years ago, by age at first marriage and socio-economic characteristics

Socio-economic characteristics	Age at first marriage				All
	<15	15–17	18–19	20+	
All Egypt	1.8	1.9	1.9	1.9	1.9
A Wife's characteristics					
Type of place of residence					
Urban	1.8	1.9	1.9	2.0	1.9
Rural	1.8	1.9	2.0	1.8	1.9
Region of residence					
Cairo	1.7	1.8	2.0	1.9	1.9
Alexandria	1.9	2.0	1.7	2.0	1.9
Lower Egypt	1.9	1.9	2.0	1.9	1.9
Upper Egypt	1.7	1.9	1.9	1.6	1.8
Type of locality					
Metropolitan	1.8	1.8	1.9	2.0	1.9
Cities: Lower Egypt	1.8	1.9	1.9	2.0	1.9
Cities: Upper Egypt	1.8	2.0	2.6	1.6	2.0
Towns: Lower Egypt	1.7	1.9	2.0	2.1	1.9
Towns: Upper Egypt	1.8	1.8	1.8	2.0	1.9
Rural: Lower Egypt	1.9	1.9	2.0	1.9	1.9
Rural: Upper Egypt	1.6	1.9	1.9	1.6	1.8
Level of education					
Illiterate: no school	1.8	1.9	1.9	1.8	1.9
Illiterate: some school	1.8	1.8	2.0	1.9	1.9
Can read and write	1.8	2.0	2.0	2.1	2.0
Primary	1.6	1.6	1.9	2.0	1.8
Secondary	0.5	1.9	2.1	1.9	1.9
University	—	1.0	1.5	1.7	1.7
Pattern of work					
Before and after marriage	1.6	2.0	1.9	1.9	1.9
Before marriage only	1.6	1.9	2.1	1.7	1.8
After marriage only	1.6	1.9	1.8	1.8	1.8
Never worked	1.8	1.9	2.0	1.9	1.9
B Husband's characteristics					
Level of education					
Illiterate: no school	1.7	1.9	2.0	1.7	1.9
Illiterate: some school	1.8	1.7	2.1	1.8	1.8
Can read and write	1.8	1.9	1.9	1.9	1.9
Primary	1.5	1.9	2.0	2.1	1.9
Secondary	1.8	1.9	2.0	1.8	1.9
University	2.3	1.8	1.9	2.0	2.0
Occupation					
Prof., tech. and admin.	1.8	2.0	1.9	1.9	1.9
Clerical	1.4	2.0	1.8	1.9	1.9
Sales	2.0	1.7	2.1	2.3	2.0
Farmers	1.8	2.0	2.0	1.8	1.9
Agricultural workers	1.7	1.9	2.0	1.7	1.8
Services	1.8	1.9	1.7	1.7	1.7
Manual	1.8	1.9	1.9	1.9	1.9

Source: Table 2.1.2

4.4.2 Births in the past five years

Table 4.12 gives the mean number of births in the past five years to women continuously married in that interval according to (A) current age and age five years ago, and (B) number of living children five years ago.

The overall mean number of live births in the past five years is 1.2, corresponding to about 240 births a year per 1000 married women during the period considered. As might be expected, this mean is larger for younger women. The mean is also larger the fewer the number of living children at the beginning of the five-year period.

As previously mentioned, the mean number of children ever born to all ever married women is 4.1. Thus, women who were continuously in the married state during the past five years contributed during that interval about 29 per cent of the average fertility for all ever-married women in the sample.

4.4.3 Differentials in recent fertility

The reported and age-standardized mean numbers of children born in the past five years for women who have been continuously married during that interval are shown in table 4.13. The following discussion will be confined to the standardized means. The difference between the mean for rural areas and that for urban areas is 0.2 births. This difference may seem small, but in fact it corresponds to an excess of around 40 births a year per 1000 married women in rural areas, compared with those living in urban areas. The urban/rural difference in recent fertility is largely the product of substantial differences in the recent fertility of women living in Cairo, Alexandria and urban areas in Lower Egypt; and of those living in urban areas in Upper Egypt and all rural areas.

The figures in table 4.13 also show the expected inverse association between education and fertility. Thus, recent fertility was about 30 per cent higher among illiterate women than among women with secondary or more education. Even among illiterate women, recent fertility was higher among those who never went to school than among the women who spent some time at school. Recent fertility declines further among women who can read and those with primary education. A similar negative association between husband's education and recent fertility is also shown by table 4.13.

Husband's occupation is also related to recent fertility. The mean number of births in the past five years is significantly lower than average for women with husbands in professional and clerical occupations, about average for the wives of sales, service and manual workers and above average for those whose husbands are engaged in the agricultural sector.

When this pattern is compared with that of early marital fertility an interesting picture emerges. It appears that Egyptian women start their childbearing experience at more or less the same pace regardless of their back-

Table 4.11 Early fertility compared with current parity for women first married 10–19 years ago, by selected socio-economic characteristics

Socio-economic characteristics	Mean number of children born		Mean in (A) as a percentage of mean in (B) (%)
	(A) in the first five years of marriage	(B) in the first 15 years of marriage[a]	
All	1.9	4.8	39
Type of residence			
Urban	1.9	4.3	43
Rural	1.9	5.1	37
Region			
Cairo	1.9	4.1	47
Alexandria	1.9	4.1	47
Lower Egypt	1.9	4.9	39
Upper Egypt	1.8	5.0	36
Type of locality			
Metropolitan	1.9	4.1	47
Cities: Lower Egypt	1.9	4.2	46
Cities: Upper Egypt	2.0	4.9	40
Towns: Lower Egypt	1.9	4.5	43
Towns: Upper Egypt	1.9	5.0	36
Villages: Lower Egypt	1.9	5.1	37
Villages: Upper Egypt	1.8	5.1	35
Level of education			
Illiterate: no school	1.9	5.0	37
Illiterate: some school	1.9	4.9	38
Can read and write	2.0	4.6	44
Primary	1.8	4.0	46
Secondary	1.9	3.3	59
University	1.7	2.7	62

[a]Mean number of children in the first 15 years of marriage was obtained as a weighted average of the current parities of women with 10–14 and 15–19 years' marital duration.
Source: Tables 2.1.2 and 2.2.5

Table 4.12 Mean number of live births in the past five years to women continuously married during that interval, according to current age, and number of living children

Panel A			Panel B	
Age 5 years ago	Current age	Births in the past 5 years	Number of living children 5 years ago	Births in the past 5 years
<15	<20	1.9	0	1.6
15–19	20–24	2.0	1	1.7
20–24	25–29	1.8	2	1.4
25–29	30–34	1.4	3	1.2
30–34	35–39	1.0	4	1.0
35–39	40–44	0.5	5	0.8
40+	45+	0.2	6	0.7
			7	0.6
			8	0.6
			9+	0.3
Overall mean: 1.2				

Source: Tables 2.4.1 and 2.4.4

ground characteristics. After an initial period of high fertility, certain groups of women start to regulate their fertility. These groups include women residing in Cairo, Alexandria and the urban areas of Lower Egypt; those with at least secondary education; and those whose husbands are in professional or clerical occupations.

4.5 CURRENT FERTILITY

4.5.1 Introduction

So far attention has been focussed on completed fertility, and on cumulative fertility for certain segments of the

Table 4.13 Mean number of children ever born in the past five years to women who have been continuously in the married state during that interval, according to socio-economic characteristics

Socio-economic characteristic	Mean		Number of women
	Unstandardized	Standardized	
All Egypt	1.2	—	6003
A Wife's characteristics			
Type of residence			
Urban	1.0	1.1	2532
Rural	1.4	1.3	3471
Region of residence			
Cairo	1.0	1.0	1079
Alexandria	0.8	0.9	341
Lower Egypt	1.3	1.3	2657
Upper Egypt	1.3	1.3	1926
Type of locality			
Metropolitan	0.9	1.0	1420
Cities: Lower Egypt	1.0	1.0	365
Cities: Upper Egypt	1.2	1.2	157
Towns: Lower Egypt	1.1	1.1	321
Towns: Upper Egypt	1.4	1.4	271
Rural: Lower Egypt	1.3	1.3	1971
Rural: Upper Egypt	1.4	1.3	1498
Level of education			
Illiterate: no school	1.3	1.3	3639
Illiterate: some school	1.2	1.2	1114
Can read and write	1.0	1.1	595
Primary	1.1	1.1	282
Secondary	0.8	0.8	248
University	0.9	1.0	125
Pattern of work			
Before and after marriage	1.3	1.3	626
Before marriage only	1.2	1.2	310
After marriage only	1.2	1.2	440
Never worked	1.2	1.2	4627
B Husband's characteristics			
Level of education			
Illiterate: no school	1.3	1.3	2676
Illiterate: some school	1.3	1.2	352
Can read and write	1.2	1.2	1618
Primary	1.1	1.1	511
Secondary	1.2	1.0	511
University	0.9	1.0	335
Occupation			
Prof., tech. and admin.	1.0	1.0	530
Clerical	1.0	1.0	291
Sales	1.1	1.2	400
Farmers	1.3	1.3	1330
Agricultural workers	1.4	1.3	1010
Services	1.1	1.2	769
Manual	1.2	1.2	1667

Source: Table 2.4.3A

women's reproductive period. In this section attention will be focussed on the pattern and level of current fertility, ie fertility in the 12-month period and the five-year period preceding the survey. This information is perhaps of most practical importance and relevance for planning and policy-making through its impact on current and future population growth. Three measures of current fertility will be presented: the proportion of women currently pregnant, age-specific fertility rates and total fertility rates.

4.5.2 Proportion of women currently pregnant

The proportion of women reporting a current pregnancy is, in a sense, the most 'current' measure of all since it actually anticipates the level of fertility during the next

nine months or so. However, as a measure of current fertility, this proportion can be subject to inaccurate reporting due to uncertainty, especially during the first trimester of pregnancy, deliberate concealment, or for other reasons.

The percentage of currently married women reporting a current pregnancy is shown in table 4.14 according to current age. Overall, 15 per cent of currently married women report a current pregnancy. The percentages decline monotonically and rapidly with age from 27 per cent for women under 20 years of age, to 10 per cent for those aged 35–39 and to 3 and 1 per cent for those aged 40–44 and 45 or more, respectively.

The distribution of current pregnancies according to the duration of pregnancy is shown in table 4.15. In spite of the possible effect of seasonality, and given that pregnancies in the early stages are largely undiscerned, it is obvious that pregnancies are under-reported at durations 1 and 9 months, and over-reported at duration 8 months. About 76.6 per cent of all pregnancies are reported as of durations 2–7 months. If pregnancies at these durations are fully reported, then it may be calculated that the overall level of current pregnancies are under-reported by about 14 per cent $(1-6/(9 \times 0.77))$. This estimate of under-reporting would imply that around 17.4 per cent of currently married women are currently pregnant. This percentage of pregnancies at any time implies $(5 \times 0.174{:}0.75) = 1.16$ live births per married woman during five years, where 0.75 years or 9 months is the average gestation period. As shown in the preceding section, the mean number of children born in the past five years was 1.2.

4.5.3 Level of current fertility

Two measures of fertility in the 12-month period and the five-year period preceding the survey are employed in

Table 4.14 Percentage of currently married women reporting a current pregnancy, by current age

Current age	Percentage
< 20	27.1
20–24	23.3
25–29	20.9
30–34	14.5
35–39	9.8
40–44	3.4
45–49	1.3

Percentage for all currently married women: 15.4
Number of currently married women: 8012

Source: Table 2.4.6

this section: age-specific fertility rates and total fertility rates. An age-specific fertility rate (ASFR) is the ratio of births occurring to a group of women of a particular age in a specified time period, usually a year, and the total number of woman-years spent in that age group during the specified time interval. The total fertility rate (TFR) is the sum of age-specific fertility rates over the child-bearing ages. The TFR represents the number of live births that would occur to a woman if she were to experience throughout her reproductive years the level of childbearing represented by the schedule of age-specific fertility rates of a given period. The estimation of these rates from a retrospective sample survey could be subject to appreciable sampling fluctuations as well as non-sampling errors resulting from omission of births or misstatement of ages and dates.

The estimation of ASFRs from the individual survey is based on a relatively simple procedure. First, the most recent births to the ever-married women who were enumerated in the individual survey were classified by date of birth, and those occurring in the 12 months preceding the date of enumeration (excluding the month of interview) were distributed by the age of mother at maternity. These births constituted the numerators in the calculation of ASFRs. The number of births thus obtained for any given age group was divided by the number of woman-years lived in the same age group. This rate was then multiplied by the proportion of ever-married women in the same age group, which was obtained from the household survey data, to give a rate for all women regardless of marital status.

The rates thus obtained from the EFS 1980 individual survey are shown in table 4.16. Close agreement between the single year and the five-year period estimates of the total fertility rate suggest that fertility has not changed during the period 1975–80. The total fertility rate of 5.28 live births per woman for 1979–80 shows that fertility in Egypt is still very high. The data from the EFS on fertility yield a crude birth rate equivalent to 37.6 live births per 1000 persons for 1979.

4.5.4 Differentials in current fertility

The analysis of differentials in the current level of fertility will be based on age-specific fertility averaged over the five years preceding the EFS 1980. These rates are shown in table 4.17 and figure 4.1 for the different regions of Egypt.

The curve of age-specific fertility rates begins with a minimum somewhere around age 15, then sweeps upward forming a very broad peak extending over the age

Table 4.15 Per cent distribution of current pregnancies according to the duration of pregnancy

Duration	1	2	3	4	5	6	7	8	9	All
Per cent	1.3	12.9	14.9	12.5	12.2	10.7	13.4	21.4	0.7	100

range 20–23, with a maximum occurring at ages 25–29. The exception to this general pattern is rural Upper Egypt where maximum fertility is shown to extend over the two age groups 20–24 and 25–29. In rural Lower Egypt and urban Upper Egypt, the fertility rate for the age group 20–24 is very close to the peak fertility occurring at ages 25–29.

Variation in the level of current fertility by type of place of residence is quite substantial. The total fertility rate increases from 4.27 for women living in urban areas to 6.14 for those living in rural areas — a difference of almost two children per woman. Within urban areas, there are striking differences in the level of current fertility. The total fertility rate is lowest in Alexandria (3.14); this rate rises to 4.09 in Cairo, to 4.29 in urban lower Egypt and to 5.87 in urban Upper Egypt. The differences in current fertility within rural areas are very

Table 4.16 Age-specific fertility rates per 1000 women, for the 12-month period and the five-year period before the EFS 1980

Age	1979–80	1975–80
15–19	78.5	99.3
20–24	255.7	255.5
25–29	280.1	285.2
30–34	238.6	217.4
35–39	138.9	130.5
40–44	52.6	48.2
45–49	12.4	15.5
Total fertility rate (TFR)	5.28	5.27

modest; the total fertility rate increases from 6.0 live births per woman in rural Lower Egypt, to 6.3 in rural Upper Egypt.

4.6 RECENT TRENDS IN FERTILITY

In this section recent trends in period fertility are investigated using the data collected in the EFS. The calculation of period fertility rates requires information from two data sets — the numerator (number of births) from the individual survey data and the denominator (number of women) from the household survey data. The approach adopted here is to use as the denominator for age-specific fertility rates the number of ever-married women from the individual survey divided by the proportion ever married for each age at the time of the survey (from the household survey), thus adjusting for women who were not married at the time of the survey. Period is measured in intervals of time receding from the survey in 12-month blocks. In the presentation of results, however, both period and calendar year labels are used, in order to sharpen the historical perspective. Thus rate for the period 0–4 years preceding the survey are also labelled 1975–80, rates for 5–9 years before the survey are labelled 1970–5 and so forth. Due to the restriction of EFS to women aged 15–49 years at the time of the interview, the sets of age-specific fertility rates become progressively truncated from above as they apply further back in time. For example, for the period 15–19 years

Table 4.17 Age-specific fertility rates per 1000 women, averaged over the five years preceding the EFS 1980, according to region of residence

Region	Age							Total fertility rate (TFR)
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	
All Egypt	99.3	255.5	285.2	217.4	130.5	48.2	15.5	5.27
Urban								
All urban	68.7	205.6	253.2	184.3	101.4	28.9	10.0	4.27
Cairo	70.1	193.3	243.1	179.2	93.8	28.3	9.1	4.09
Alexandria	29.1	137.0	208.8	128.5	96.7	27.5	2.5	3.14
Lower Egypt	62.6	223.8	271.6	176.5	86.9	20.8	13.3	4.29
Upper Egypt	114.1	277.9	292.5	267.2	157.0	48.2	16.5	5.87
Rural								
All rural	125.6	302.2	315.2	244.2	152.9	63.6	20.3	6.14
Lower Egypt	105.8	295.9	317.9	246.6	153.6	62.7	16.6	6.00
Upper Egypt	154.3	311.7	311.8	241.4	152.0	64.9	26.1	6.32
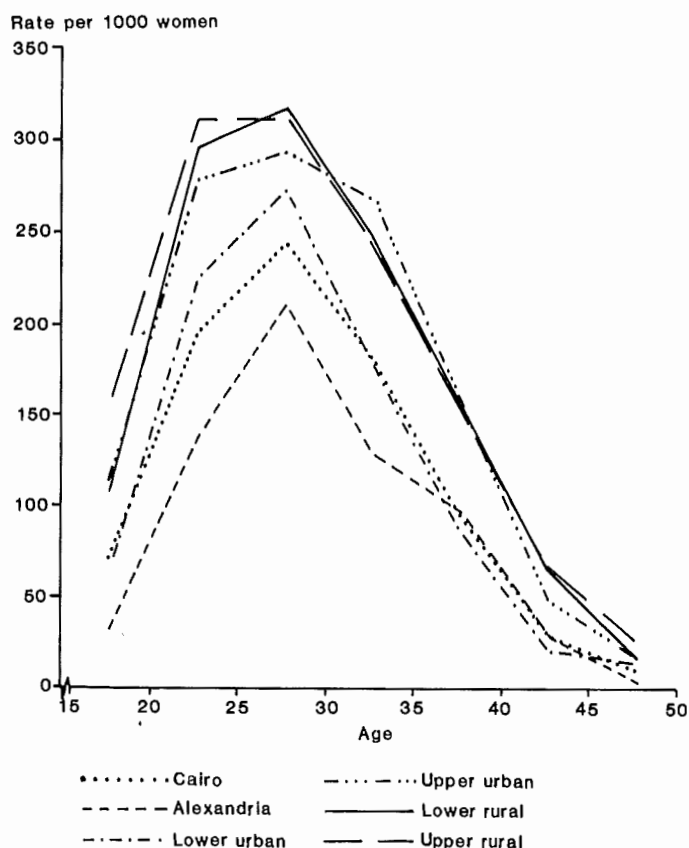
Figure 4.1 Age-specific fertility per 1000 women according to region of residence

before the survey, only births to women who were then aged less than 35 years may be considered.

The derived age-specific fertility rates, for Egypt and the major regional groups, are shown in table 4.18. The rates fall consistently among all age groups of women between 1960–5 and 1970–5. Prior to this, there is some evidence of a downward shift, but it is less regular and less striking, and based on very few age groups, and should probably be discounted. Between 1970–5 and 1975–80, the decline in fertility is quite moderate in the age groups 25–40 years and only maintains the momentum of the previous decade in the age group 15–19 years. The overall effect is summarized in table 4.19 in which a set of total fertility rates are presented. The usual total fertility rate cannot be calculated because of the truncation of the set of age specific fertility rates. Instead, they are constructed by assigning the values of the adjacent period to the missing fertility rates. Insofar as fertility has been declining, the total fertility rates calculated in this way are underestimates of the real level of fertility, and hence tend to understate the scale of the reduction. Table 4.19 indicates that total fertility fell from 7.1 births per woman in 1960–5 to 5.3 in the period 1975–80, representing a 26 per cent reduction. The steepest fall appears

to have occurred between 1965–70 and 1970–5, from a total fertility rate of 6.5 to 5.5 live births per woman, and table 4.18 indicates this to be a feature of all age groups of women.

Tables 4.18 and 4.19 present regional as well as national trends in reported fertility. The total fertility rates in table 4.19 and figure 4.2 indicate that fertility declined in all regions of Egypt between 1960–5 and 1975–80. It was most striking in Cairo and Alexandria, where it fell by 35 per cent, from 5.9 live births per woman in 1960–5 down to 3.8 in 1975–80. The smallest reduction, 19 per cent, was reported in rural Upper Egypt, where total fertility fell from 7.8 in 1960–5 to 6.3 live births per woman in 1975–80. Women in all regions reported the marked decline between 1965–9 and 1970–5, and the more gradual one in the following five years that was noted at the national level. Urban women reported an equally large reduction between 1960–5 and 1965–70 as between 1965–70 and 1970–4, while the momentum of decline seems not to have begun in rural Egypt until the late 1960s. The fact that urban fertility features a continuous steep decline between 1960–5 and 1970–4 indicates that the reduction between 1965–75 observed at the national level is a real phenomenon and not the result of the effects of misreporting.

The age-specific fertility rates in table 4.18 reveal a consistent decline in fertility in Cairo and Alexandria among all age groups of women from as early as 1950–5, again with some levelling off between 1970–5 and 1975–80. In the other urban areas, it is distinctive only from 1960–5, and in the rural areas, from the period five years later. The table would suggest a larger initial fall among the youngest age groups of women, presumably associated with changes in age at marriage. However, the reduction is not by any means confined to the younger age groups of women and a fall in marital fertility is also indicated.

4.7 SUMMARY

This chapter has focussed on levels, differentials and trends in fertility. The main measures used were cumulative fertility, ie current parity of all women in the sample and of those aged 45–49 who have virtually completed their childbearing; parity within age and marital duration categories; fertility in the first five years of marriage and in the past five years; and recent trends in period fertility.

The average number of children ever born for all ever-married women is 4.1, and for those aged 45–49 is 6.9.

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Table 4.18 Age-specific fertility rates per 1000 women, for five-year periods before the EFS 1980

Region	Age at maternity	Years before the survey						
		0–4 (1975–80)[a]	5–9 (1970–75)	10–14 (1965–70)	15–19 (1960–65)	20–24 (1955–60)	25–29 (1950–55)	30–34 (1945–50)
All Egypt	15–19	99.3	122.0	164.3	197.0	205.5	199.2	176.6
	20–24	255.5	267.7	324.8	349.8	325.8	366.8	
	25–29	285.2	280.5	320.0	326.6	347.8		
	30–34	217.4	220.9	251.0	297.8			
	35–39	130.5	134.3	165.3				
	40–44	48.2	66.0					
	45–49	15.5						
All urban	15–19	68.7	80.3	123.5	161.1	190.2	198.8	179.6
	20–24	205.6	220.1	289.8	332.3	334.2	386.8	
	25–29	253.2	238.1	274.2	328.6	350.4		
	30–34	184.3	177.3	205.7	276.3			
	35–39	101.4	99.6	125.6				
	40–44	28.9	46.5					
	45–49	10.0						
Metropolitan	15–19	58.7	67.2	110.4	152.2	177.5	197.4	166.8
	20–24	178.6	203.5	284.0	310.9	340.6	364.8	
	25–29	233.8	219.4	274.5	305.6	324.8		
	30–34	166.5	173.0	189.7	253.6			
	35–39	94.5	79.2	111.2				
	40–44	28.2	44.5					
	45–49	6.7						
Urban Lower Egypt	15–19	62.6	84.5	118.2	128.7	205.7	192.7	195.2
	20–24	223.8	221.9	267.2	376.6	364.6	412.6	
	25–29	271.6	251.3	260.7	388.9	417.0		
	30–34	176.5	168.0	239.6	306.1			
	35–39	86.9	118.0	146.4				
	40–44	20.8	48.8					
	45–49	13.3						
Urban Upper Egypt	15–19	114.1	124.4	189.2	249.0	223.6	243.5	197.7
	20–24	277.9	279.8	350.2	359.2	315.8	420.1	
	25–29	292.5	289.4	311.6	366.6	321.3		
	30–34	267.2	218.8	240.8	304.8			
	35–39	157.0	157.9	140.0				
	40–44	48.2	49.4					
	45–49	16.5						
All rural	15–19	125.6	160.9	202.4	226.3	216.3	195.3	173.9
	20–24	302.2	312.1	353.2	361.2	312.0	348.9	
	25–29	315.2	314.9	354.3	318.2	345.5		
	30–34	244.2	254.4	284.4	317.3			
	35–39	152.9	161.1	201.0				
	40–44	63.6	83.6					
	45–49	20.3						
Rural Lower Egypt	15–19	105.8	145.2	189.7	210.4	197.4	197.8	171.7
	20–24	295.9	307.2	349.9	354.8	312.7	380.4	
	25–29	317.9	326.1	353.2	321.2	336.1		
	30–34	246.6	268.8	297.0	325.0			
	35–39	153.6	165.8	199.4				
	40–44	62.7	73.9					
	45–49	16.6						
Rural Upper Egypt	15–19	154.3	184.5	220.2	248.4	239.2	192.1	177.1
	20–24	311.7	320.1	358.0	368.8	310.9	299.0	
	25–29	311.8	300.3	355.6	314.3	359.9		
	30–34	241.4	236.6	267.9	304.8			
	35–39	152.0	155.0	203.2				
	40–44	64.9	98.7					
	45–49	26.1						

[a]The years given in brackets represent the approximate time period.

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Table 4.19 Total fertility rates for five-year periods before the EFS 1980 by region

Region	Approximate time period				Percentage of decline (1960–79)
	1960–65	1965–70	1970–75	1975–80	
All Egypt	7.09	6.53	5.53	5.27	26
Urban					
All urban	6.40	5.38	4.36	4.27	33
Metropolitan	5.92	5.11	3.97	3.84	35
Lower Egypt	7.04	5.47	4.46	4.29	39
Upper Egypt	7.43	6.49	5.68	5.87	21
Rural					
All rural	7.64	7.50	6.54	6.14	20
Lower Egypt	7.51	7.40	6.52	6.00	20
Upper Egypt	7.82	7.65	6.61	6.32	19
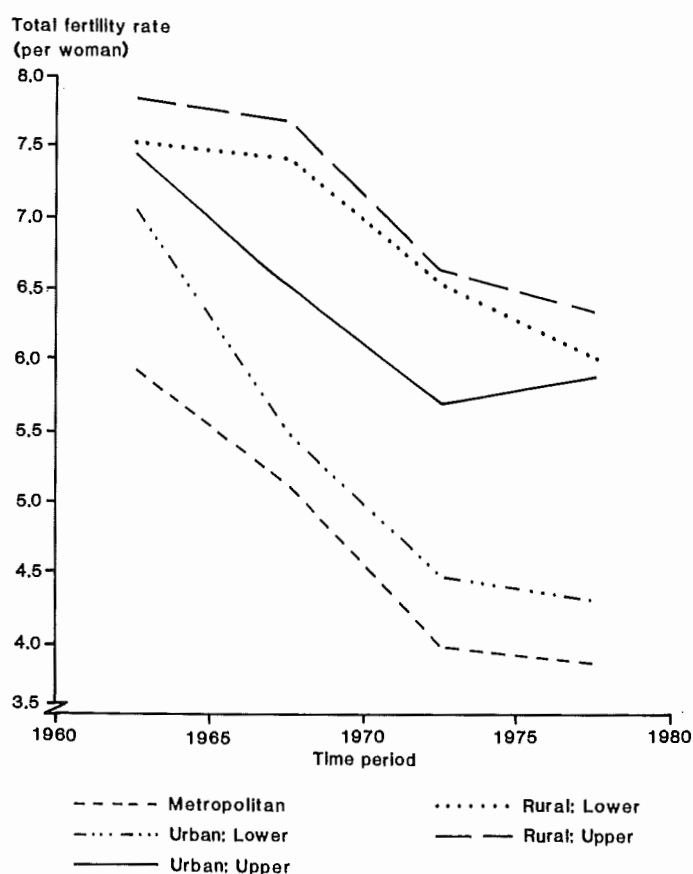
Figure 4.2 Trends in total fertility rates by region of residence

About 11 per cent of all ever-married women are childless; 25 per cent have had one or two live births; 23 per cent, three or four; 18 per cent five or six; and the remaining 23 per cent, seven or more.

The data suggest that primary sterility is low (3.4 per cent). Childlessness in the first few years of marriage is also low. For women who first married at least five years ago, 62 per cent have had their first birth by the end of the second year of marriage, and the vast majority (89 per cent) have had at least one live birth before the end of the fifth year of marriage.

The results also revealed the absence of any strong relationship between age at marriage and early fertility. The effect of age at marriage becomes apparent, however, at longer durations of marriage and mainly for those who married after their twentieth birthday.

The mean number of children born in the first five years of marriage is 1.8. The results show that very little change, if any, has occurred in the tempo of early marital fertility over the last 20 years or so. Differences in the rate of childbearing appear mainly after the first five years of marriage and after the birth of the first two or three children.

The mean number of live births in the past five years is 1.2. This mean is larger for younger women; and it is also larger the fewer the number of living children at the beginning of the five-year period.

The picture that emerges from this presentation indicates that fertility in Egypt is very high. There are, however, substantial differences in recent fertility according to level of education of spouses, region of residence, and husband's occupation.

The results show a strong inverse association between level of education and both completed and incomplete fertility. The association is curvilinear for completed fertility and linear for the younger cohorts.

Husband's occupation is also related to recent fertility. The mean number of births in the past five years is significantly lower than average for women whose husbands are in professional and clerical occupations, about average for the wives of sales, service and manual workers and above average for the wives of agricultural workers and farmers.

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Variation in recent fertility by region of residence is quite substantial. A clustering of the regions puts Cairo and Alexandria together with the lowest fertility, followed by urban areas in Lower Egypt. Urban Upper Egypt and rural Lower Egypt belong in an intermediate group, and rural Upper Egypt is the clear extreme in terms of very high fertility.

There has been a significant decline in period fertility since the early 1960s. The total fertility rate dropped from 7.1 to 5.3 live births between 1960 and 1980. The major part of this decline occurred in the period 1960–75 in urban areas and in the period 1965–75 in rural areas. The decline in fertility since the mid-1970s has been of a very modest magnitude. The total fertility rate for 1979–80 is still as high as 5.3 live births.

When this pattern of decline in total fertility is compared with the recent rise in age at marriage and with the patterns of socio-economic differentials in cumulative fertility, it is possible to conclude that the decline in total fertility was initially caused by rising age at marriage and that this was followed by a period in which the two dimensions of total fertility, namely the proportion married among women of childbearing ages and the rate of marital fertility, have worked in such a way as to reinforce each other.

It appears, therefore, that Egyptian women start their childbearing experience at more or less the same pace regardless of their background characteristics. After an initial period of high fertility, certain groups of women start to regulate their fertility. These groups include women residing in Cairo, Alexandria and the urban areas of Lower Egypt, those with at least secondary education, and those whose husbands are in professional or clerical occupations.
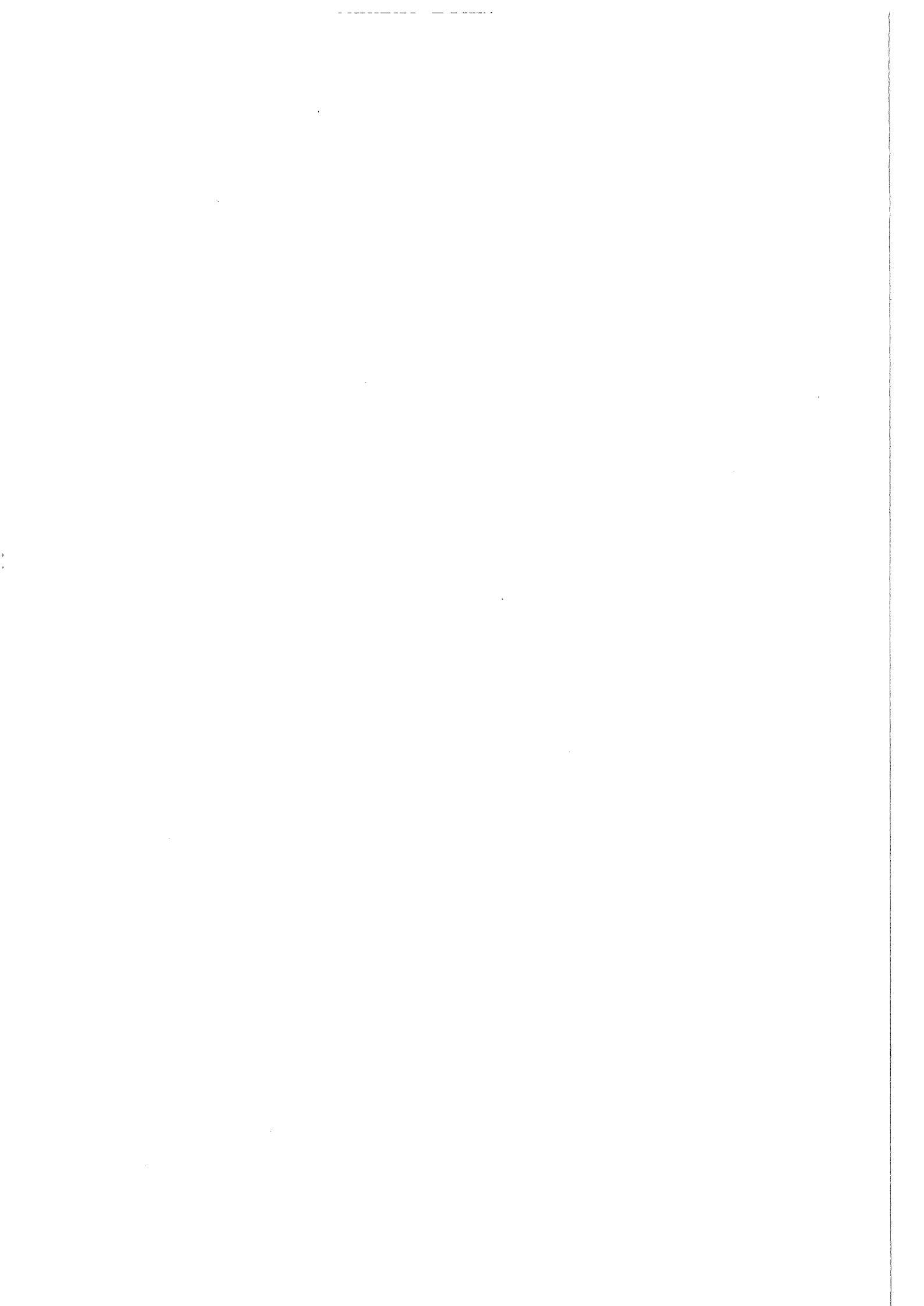
INFANT AND CHILD MORTALITY

5.1 INTRODUCTION

This chapter looks at the role that infant and child mortality play in the reproductive experience of Egyptian women. An account of a woman's childbearing is incomplete without information about the number of her children who survive the first crucial years of life as well as the number of live births she has had. In societies which have achieved very low levels of mortality, which is generally accompanied by low fertility, a woman's present family size and the number of children ever born are practically synonymous. However, in many populations the death of a child remains a common feature of the family building process, with the result that there is a sizeable disparity between the number of children who are born and the number who survive to adulthood. Most of this loss occurs early in life. This pattern is generally to be found where there is little effective planning of fertility. In these circumstances infant and early childhood deaths, themselves often largely determined by reproductive factors, represent just one of the contributors to a general state of uncertainty with regard to complete family size.

In this chapter the current level and recent trends in mortality during the early months and years of life are examined, together with their impact on family size. Earlier chapters revealed extensive regional variations in fertility, ranging from the reduction that has been achieved in the metropolitan areas of Cairo and Alexandria to the high levels maintained among rural women, notably those living in rural Upper Egypt. Regional differentials in early childhood mortality are presented here and their association with the observed variations in family size is inspected. Finally some results relating to socio-economic status, reproductive factors and child survival at the national and regional levels are presented.

The Egyptian Fertility Survey collected information from which past and present levels of mortality during the first years of life may be derived. This was supplied in the birth histories of the individual survey, which asked for the date of each live birth as well as the survival status and the age at death if the child had died. In addition to the survival probabilities estimated directly from the events data, indirect estimates may also be derived from the proportions of children who have died by the survey date among women classified by current age or by the number of years since their first marriage. The detail provided in the birth history allows the evaluation of survival chances according to aspects of the child's position within the family, such as the mother's age when it was born, the number of preceding births and the proximity of the previous and following births.

The sections that follow necessarily represent a preliminary analysis of infant and childhood mortality in Egypt. It is mainly confined to the association with survivorship of individual factors taken in turn and includes no consideration of alternative explanatory models, nor of the statistical significance of the relationships. Section 5.2 is a general overview of the prevalence of child loss among the survey women. Levels, trends and the age pattern of infant and child mortality are examined in section 5.3, followed in section 5.4 by an analysis of these according to region of residence. In section 5.5 current differentials in socio-economic status are presented and, finally, in section 5.6 variations according to the intra-familial factors are considered. Sections 5.5 and 5.6 also look at the effects of selected socio-economic and intra-familial factors on infant and child mortality in each of the regions.

5.2 PREVALENCE OF CHILD LOSS

The impact of infant and childhood mortality on the family building process is analysed in this section in two ways. First the differences are examined between lifetime fertility, defined as the average number of live births per woman, and family size, defined as the average number of children living at the time of the survey. There follows a survey of the concentration of the experience of losing a child through death. This shows the extent to which the death of a child has been a common feature of Egyptian women's childbearing experience.

The reported mean numbers of children ever born and living, and the percentages of children who have died are shown by age of woman and by years since first marriage in table 5.1. Reporting of the total number of live births is likely to be less complete than that of living children, due especially to the exclusion of live births followed by

early neo-natal deaths. Hence table 5.1 may understate the impact of child mortality. The high lifetime fertility among Egyptian women is seen to be translated through the effects of mortality into a smaller family size. Women aged 30–34 years reported an average of 4.5 live births and 3.5 living children, while those in the oldest age group reported that out of 6.8 live births there were only 4.7 children still alive. Similarly, those in the 15–19 years since first marriage category had 5.5 live births on average and 4.3 living children, while in the longest marriage duration, 30 years or more, there were only 5.3 children surviving out of 7.8 live births. Around one-fifth of all children ever born to women under 35 years of age had died by the time of the survey and more than a quarter of those born to women aged 35 and over had died as well. It is clear from table 5.1 that, until the recent past, the effect of infant and childhood mortality on fertility has been considerable, with a lifetime fertility approaching seven live births being reduced to a family size of about 4.5 living children.

While table 5.1 demonstrated the effect of mortality on average family size, it gives no indication of the extent to which the loss of a child is a common experience. This becomes a little clearer in table 5.2, which presents child survivorship data by parity for women with up to eight live births. The table excludes 11 per cent of mothers with more than eight live births and hence it must be seen as an understatement of the overall mortality experience. The table gives the percentage distribution by parity of women according to the number of children who have died.

Ninety per cent of women with only one live birth report the child to be still alive. As may be expected, the percentage of women whose children have all survived declines with parity. Fifty per cent of women with four live births report a family size of four living children and only 16 per cent of women of parity eight have not lost a child through death. Up to parity five, the majority of mothers, who have lost a child through death, have lost

Table 5.1 Children ever born and surviving and the percentage of children ever born who have died by age group of women and by year since first marriage

	Children ever born per woman	Living children per woman	Percentage of children who have died
A Current age of women[a]			
15–19	0.1	0.1	19.0
20–24	1.2	1.0	18.1
25–29	2.7	2.1	19.3
30–34	4.5	3.5	21.7
35–39	5.7	4.3	24.3
40–44	6.3	4.6	27.0
45–49	6.8	4.7	30.5
B Years since first marriage[b]			
0–4	0.9	0.8	13.2
5–9	2.6	2.2	17.8
10–14	4.1	3.3	20.9
15–19	5.5	4.3	22.2
20–24	6.5	4.7	26.9
25–29	6.9	4.9	28.7
30+	7.8	5.3	32.1

[a]Refers to all women, assuming the proportions ever married in the household survey.
[b]All ever-married women.

Table 5.2 Per cent distribution of women in the individual survey by number of deceased children and parity

Number of children who have died (percentage)	Children ever born								
	1	2	3	4	5	6	7	8	1–8
0	90	77	66	50	36	30	22	16	54
1	10	20	26	31	37	30	25	18	24
2	—	3	7	15	19	23	27	25	11
3+	—	—	1	4	8	17	26	41	11
Total	100	100	100	100	100	100	100	100	100

only one child, while from parity six to eight, they are more likely to have lost two children or more. In fact, 40 per cent of those women who have had eight live births have experienced the death of three or more children.

The picture that emerges from tables 5.1 and 5.2 is one in which infant and child mortality still plays an important role in the family building process. There is a sizeable group of women whose children all survive, though it is still the case that upwards of 50 per cent of those with four children or more have lost at least one child through death.

5.3 LEVELS AND TRENDS IN INFANT AND CHILDHOOD MORTALITY

The EFS permits the direct and indirect estimation of infant and child mortality. In this section the estimates are considered in an attempt to establish what are the levels, trends and the sex and age patterns of mortality among infants and children in Egypt.

In the analysis of mortality among children under five, the age group is conventionally sub-divided into categories which roughly reflect changes in the probability of dying and changes in the main causes of death which occur during the first months and years of life. The probability of dying is at its peak at the time of birth, including the period immediately before birth, and declines thereafter, except perhaps for a minor peak when the child is weaned. Broadly speaking, between the twenty-eighth week of gestation and the end of the first week of life, the underlying causes of death are principally complications of the pregnancy and delivery, and poor maternal health and nutritional status. After the first week of life diarrhoeal disease and respiratory infections become leading causes of mortality, with malnutrition often an underlying cause. The infectious diseases of childhood begin to appear in the second half of the first year of life and combined with poor hygiene, they may result in high case fatality rates. Deaths of children aged one to four years are mainly a product of environmental factors, including nutrition. As such they provide a sensitive indicator of the social and economic conditions under which people live, and it is among them that the most striking effects of the decline from high mortality levels are observed.

A number of subgroupings of the period between birth and age five years are used in this chapter, the choice dictated by considerations of the availability and accuracy of the data as well as the mortality level and principal causes of death. Before presenting the results,

the subdivisions and the measurements of mortality that will be used are described.

Infant mortality, ($_1q_0$), is defined as the probability that a live-born child will die before reaching its first birthday. Here it usually takes the form of a rate per 1000 live births. In order to isolate most of the deaths associated with the pregnancy and delivery and with maternal health status, the infant deaths are further divided into those occurring in the neo-natal and post-neonatal periods, where the neo-natal period refers to the first month of life.

Childhood mortality is defined as the probability of dying before or between selected ages of childhood. It refers variously to the probability that a child will die in its first two ($_2q_0$) or five ($_5q_0$) years of life, or in the years between its first and second ($_1q_1$), its second and fifth ($_3q_2$) or its first and fifth ($_4q_1$) birthdays. The rates are presented in terms of deaths per 1000 live births or per 1000 survivors to the earlier birthday.

Both period and cohort measures of infant and child mortality can be derived from data on the number of deaths by age out of a cohort of live births. This is the form in which data was collected in the EFS, which asked for the calendar year and month of each live birth and the age at death in years and months of children who died. From this, present and past levels of mortality among infants and young children may therefore be estimated. Unless otherwise stated, the mortality rates derived from the birth histories are five- or ten-year period rates. They are a summary of the experience of all those children exposed during the period and were calculated as a product of survival probabilities within the five-year age group.

5.3.1 Direct estimates of infant and child mortality

The past 30 years of infant and childhood mortality experience, derived from the birth histories, is shown in table 5.3. The implied trends in the probabilities of dying between birth and ages one, two and five years are illustrated in figure 5.1, each period estimate assumed to be located at the mid point of the five-year interval. A substantial reduction in mortality during infancy and childhood is indicated. The results suggest that about 190 out of every 1000 children born in the early 1950s and exposed to the prevailing mortality rates were to die in infancy, 300 in every 1000 before their second birthday, and 360 out of every 1000 before their fifth. This compares with 130 infant deaths per 1000 live births, 165 deaths per 1000 live births in the first two years of life, and 190 deaths per 1000 live births in the first five years of life, for children exposed to the mortality conditions of the late 1970s.

Table 5.3 Infant and childhood mortality by sex of child for five-year periods before the survey

Years before survey	0–4	5–9	10–14	15–19	20–24	25–29
Calendar years	1975–9	1970–4	1965–9	1960–4	1955–9	1950–4
A Female						
Neo-natal	56	56	52	49	63	39
Post-neo-natal	79	85	88	96	105	130
$_1q_0$	134	141	140	145	168	168
$_2q_0$	172	204	194	216	246	(265)
$_5q_0$	197	247	251	289	342	(336)
$_1q_1$	43	73	63	84	95	(116)
$_3q_2$	30	54	70	94	126	(97)
$_4q_1$	72	123	129	169	209	(202)
B Male						
Neo-natal	62	77	70	77	73	87
Post-neo-natal	69	73	71	80	91	123
$_1q_0$	131	150	142	157	164	212
$_2q_0$	158	193	194	220	235	(309)
$_5q_0$	185	230	236	276	310	(380)
$_1q_1$	31	51	61	75	85	(123)
$_3q_2$	32	46	53	71	97	(103)
$_4q_1$	63	95	111	141	174	(214)
Both sexes						
Neo-natal	59	67	62	64	68	65
Post-neo-natal	74	79	79	88	98	126
$_1q_0$	132	146	141	151	166	191
$_2q_0$	165	198	194	218	241	288
$_5q_0$	191	238	243	283	326	(359)
$_1q_1$	37	62	62	79	90	(120)
$_3q_2$	31	50	61	82	112	(100)
$_4q_1$	67	108	119	155	192	(208)

NOTES: Neo-natal refers to deaths in the first month of life per 1000 live births.
Post-neonatal refers to deaths between one month and one year per 1000 live births.
$_nq_x$ is the deaths between ages x and x + n per 1000 survivors to age x.
Figures in parentheses are based on less than 500 children exposed.

$_1q_0$ – Deaths between birth and age one year
$_2q_0$ – Deaths between birth and age two years
$_5q_0$ – Deaths between birth and age five years
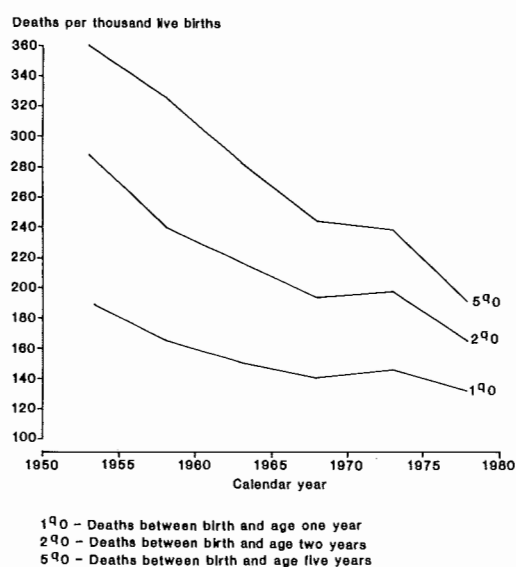
Figure 5.1 Trends in infant and childhood mortality

The mortality decline seems to have most benefited those children who survive infancy. One in five survivors to age one year would die before age five years at the mortality rates reported for the early 1950s, compared with only one in fifteen 25 years later, while the reported risks of dying in infancy only fell from one in five in the early 1950s, to about one in eight by the late 1970s.

The reduction in mortality appears to have been especially pronounced between the early 1950s and the mid 1960s. During this period there were major economic reforms and investments in health, education and on other basic needs which led to marked improvements in the social and economic conditions of the population. The 1950s also coincided with the end of the sharp decline that is commonly observed when mortality first falls from high pre-transition levels. Many of the major epidemics, which accounted for heavy losses of

infants and young children in the pre-transition period, disappeared in Egypt during the 1940s, while most of the remainder continued to decline, in frequency or in their case fatality rates, throughout the 1950s.

Beyond the mid 1960s, a much more gradual decline in mortality, especially during infancy, is observed. This is more clearly visible in figure 5.2, which is based on single-year estimates of the infant mortality rates for the period 1950–78. The rates are cohort ones, derived from the actual number of deaths that were reported out of each calendar year's live births. The single-year rates include fluctuations which reflect real events distorted to varying degrees by sampling and reporting errors. In order that the secular trend in infant mortality may be seen more easily, figure 5.2 presents the five-year moving averages of the single-year rates. The moving average trend seems to confirm a levelling off of infant mortality between the late 1960s and the 1970s, with a further reduction perceptible towards the end of the period.

5.3.2 Indirect estimates of infant and child mortality

Birth history estimates of infant and child mortality rely on the mother's reports of dates of live births and the age at death of children who have died. Especially where levels of female literacy are low, inaccuracy in respect of each of these can lead to a distortion of the trend and the age pattern of infant and child mortality. Estimates of mortality can also be derived from the proportions of children who have died for women by current five-year age group or by five-year intervals since first marriage. Based as they are on only the total number of children ever born and the numbers of living children, they do not require as sophisticated a level of reporting as do the direct estimates. Instead of deriving the information from the women themselves, the techniques are based on assumed model fertility and mortality schedules and also

assume unchanging fertility and a linear period decline in mortality. The proportions of children dead are converted into probabilities of dying between birth and selected ages by multiplying factors which are based on an assumed fertility pattern and are roughly equal to 1.0.[1]

The probabilities of dying based on age and duration of marriage, and the dates to which they refer are shown in table 5.4. The assumed mortality schedule was the West family of the Coale-Demeny regional model life-table system. The values of mortality between birth and ages one, two and five years that correspond to each derived probability of dying in this model life-table system are also included in the table and are illustrated, along with the direct estimates, in figure 5.3.

The direct and indirect estimates of infant and child mortality during the 15 years or so before the survey are quite encouragingly close. Slightly higher infant mortality is indicated by the age and duration based estimates. This could indicate that the West model is inappropriate for the earlier period or it may arise from the understatement of infant deaths or the shifting of
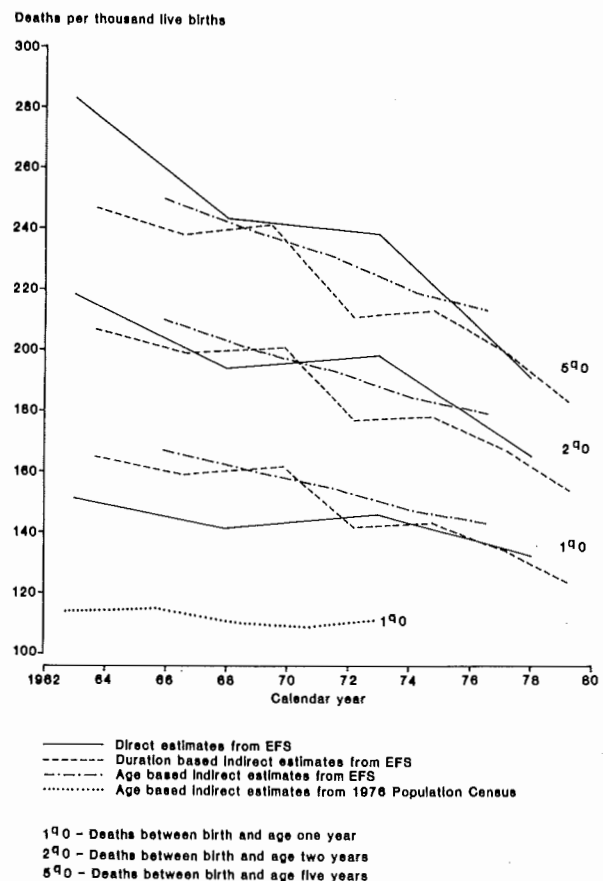
Figure 5.3 Direct and indirect estimates of infant and childhood mortality

Figure 5.2 Infant mortality rates 1950–77

[1]Coale, A.J. and P. Demeny (1966). *Regional Model Life Tables and Stable Populations.* Princeton, New Jersey: Princeton University Press.

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Table 5.4 Indirect estimates of child mortality derived from the proportions of children ever born who have died by current age of women and by years since first marriage

x	2	3	5	10	15	20
Current age of women	20–24	25–29	30–34	35–39	40–44	45–49
$_xq_0$	194	195	219	250	274	307
Calendar year	1978	1976	1974	1971	1968	1965
$_1q_0$	155	143	147	154	160	167
$_2q_0$	194	179	184	193	200	210
$_5q_0$	231	213	219	230	239	250
Years since first marriage	0–4	5–9	10–14	15–19	20–24	25–29
$_xq_0$	154	182	213	230	277	294
Calendar year	1979	1977	1974	1972	1969	1966
$_1q_0$	124	134	143	142	161	159
$_2q_0$	154	167	178	177	201	199
$_5q_0$	183	199	213	211	241	238

NOTES: $_xq_0$ estimated from the proportions of children who have died using the Trussell regression procedure and assuming mortality represented by the West family of the Coale-Demeny regional model life-table system.

$_1q_0$, $_2q_0$, $_5q_0$ are the deaths per 1000 live births between birth and ages 1, 2 and 5 years which match the estimated $_xq_0$ in the West family.

them to deaths at age one year in the birth histories. The disparity is not great, the main feature of table 5.4 being the overall agreement between the respective estimates.

Both direct and indirect estimates of infant and child-hood mortality may be depressed by the omission of live births, especially those followed by an early neo-natal death. This is most likely to affect the reports of older women who tend to be less literate and who are reporting on events that occurred some years ago. The result is an understatement of the real level of mortality for the earliest period. The EFS results can be compared with indirect estimates of mortality derived from the 1947 and 1976 Population Censuses. The proportion of children who have died for women by duration of marriage in the 1947 Census suggest an infant mortality rate of about 190 deaths per 1000 live births during the 1940s, slightly less than that implied by the EFS. The indirect estimates of infant mortality derived from the 1976 Population Census are also shown in figure 5.3. The Census estimates fall well below those recorded in the EFS and this is probably due to the under-reporting of deceased children in the 1976 Census. This comparison of the EFS with other sources does not support a serious bias in the trend in mortality arising from the understatement of children who have died, and indicates that the EFS provides a reasonable representation of the course of infant and child mortality during the past few decades.

5.3.3 Sex and age pattern of infant and child mortality

The reported trends in infant and child mortality for each sex separately are shown in table 5.3. As a general rule, mortality in infancy and childhood is higher among boys than among girls. Only neo-natal mortality appears to follow this rule in Egypt. The age groups beyond this are characterised by excess female mortality. The mortality conditions prevailing during the five years before the survey, for example, indicate 56 female neo-natal deaths per 1000 live female births, and 62 male neo-natal deaths per 1000 live male births. These are followed by 79 female and 69 male deaths per 1000 during the post-neonatal period. Out of every 1000 girls who survived their first year of life, 72 had died before their fifth birthday, compared with 63 of their male counterparts out of every 1000 boys surviving to age one year. The net results are infant mortality rates of 134 female and 131 male deaths per 1000 live births; and childhood mortality rates of 197 female and 185 male deaths per 1000 during the first five years of life. The sex differentials in infant and child mortality during the 25 years preceding the survey conforms more or less with the experience of the past five years. Current survival chances represent marked improvements for both sexes compared with the conditions 20–24 years earlier, when there were 168 female and 164 male deaths per 1000 live births reported in infancy, and 342 female and 310 male deaths per 1000 live births during the first five years of life.

Excess female mortality is commonly observed in societies with a preference for male children and at moderate to high mortality levels. In these circumstances girls tend to be more vulnerable in respect of nurturing and nutritional status, and this includes the likelihood of

enlisting medical aid when they are sick. Since most deaths that occur after the first month of life are the outcome of environmental factors, it is in this age group that excess female mortality is observed. Furthermore, it is most improbable that these sex differentials in mortality can be explained by reporting errors. Where male children are preferred, they are less likely than girls to be omitted from the birth histories and hence their mortality least likely to be understated. This is further supported by the sex ratios of 107 males to 100 female live births reported in the EFS.

The extent to which the sex differentials in mortality represent a deviation from the usual experience can be seen in table 5.5. The age patterns of mortality during the five years preceding the survey are compared for each sex separately with the four families of the Coale-Demeny regional model life-table system. This system was constructed from a broad range of historical and geographical mortality experience, among which the age patterns of child and adult mortality fall into four distinct groups or families. The table presents the model estimates of mortality in the first one and two years of life that correspond to the birth history estimates of the probability of dying between birth and age five years. Also shown is the level of mortality to which each corresponds, where a high level denotes low mortality. The model life-table system assumes the usual sex differential in mortality so that a given level includes lower female mortality than male mortality.

The West family best approximates the reported pattern of mortality in the first five years of life, especially for males. At this level, the West family denotes a fairly high infant compared with later child mortality. It seems from table 5.5 that the pattern of mortality among the

Table 5.5 The age and sex pattern of infant and child mortality in the five years before the survey compared with that in the Coale-Demeny regional model life-table system

	$_1q_0$	$_2q_0$	$_5q_0$	Level
A Female				
North	114	148	197	12.3
South	121	162	197	14.0
East	142	171	197	13.3
West	127	163	197	12.3
EFS	134	172	197	
B Male				
North	115	144	185	13.8
South	122	156	185	15.3
East	142	165	185	14.9
West	129	157	185	13.7
EFS	131	158	185	

NOTE: $_1q_0$, $_2q_0$, $_5q_0$ refer to deaths per 1000 live births.

sexes is not too dissimilar, although male mortality represents an increase over female mortality of roughly 1.5 levels of the model life-table system. The observed female probability of dying before age five years, during the five years before the survey, was 197 deaths per 1000 live births, and represents level 12 in the West family. The equivalent value for male mortality at this level is 218 deaths per 1000 live births, whereas the figure recorded in the EFS is only 185 deaths per 1000 live births. Hence, rather than the more usual situation of about 20 more male than female deaths per 1000, EFS data shows an excess of 12 female deaths.

To sum up, the EFS shows that although childhood mortality was halved during the 30 years preceding the survey, Egypt is still characterised by a moderately high mortality regime. According to the figures for 1975–9, one out of every seventeen children born had died in the first month of life, nearly one in seven during the first year, and one in five of all children born had died before reaching age five years. Even among those who survive infancy, one out of fifteen children are estimated to have died during their next four years of life. Contrary to the usual situation, the chances of survival are slightly lower among girls than among boys. This level of mortality is one that includes many deaths which can be attributed to adverse environmental conditions. Applied to the total fertility rate estimated for the five years before the survey, from the 5.3 live births that would be attributable to a woman who experiences the current age-specific fertility rates, only 4.3 children would survive to age five years.

5.4 REGIONAL ASPECTS OF INFANT AND CHILDHOOD MORTALITY

Egypt's demography is characterised by a wide regional diversity. The total fertility rate of 5.3 live births per woman, for example, observed for the whole country during the five years preceding the survey, includes regional variation ranging from 3.1 births per woman in Alexandria to 6.3 births among women living in rural Upper Egypt. Similar variations in infant and child mortality may be anticipated. They are inspected in this section, along with their relationship to the observed variations in fertility. The disparity between the numbers of children ever born and the numbers of living children are examined first in order to compare the impact of childhood mortality on the cumulative fertility of the women included in the EFS. This is followed by a more detailed look at past and present mortality levels among infants and children living in the various regions.

A distinction was drawn earlier between lifetime fertility, the number of children a woman has borne alive, and her effective family size, which refers to the number of children she has living. This indicates the effect that infant and childhood mortality has had on a woman's childbearing experience. It also provides some insight into her past and present living conditions, reflecting the circumstances responsible for a given level of child loss as well as the current demands placed on her physical, emotional and economic resources.

The mean numbers of children ever born and of living children for women by current age and region of residence are shown in table 5.6. The regional fertility pattern is clearly visible among women under 40 years of age. Women living in Lower Egypt report upwards of one more live birth on average than do their counterparts in Cairo and Alexandria while those living in Upper Egypt report around 1.5 more live births on average than do the metropolitan women. The differential in the cumulative fertility of women living in Lower Egypt and those in Cairo and Alexandria is maintained among those 40–49 years of age, while the number of live births reported by women in Lower Egypt overtakes that in Upper Egypt. It is likely that this apparent reversal in the differential is due to the disproportionate omission of children ever born on the part of women living in the less literate and more traditional society of Upper Egypt.

It may be expected that the reporting of living children is more reliable than of children ever born and that the differences in family size among the older age groups are less distorted than in the case of cumulative fertility. The interesting feature of table 5.6 is that when the numbers of living children are compared, the regional differences in fertility are muted and even in some cases reversed. The largest family sizes are to be found in Lower Egypt,

the order of difference between there and Cairo and Alexandria falling to around 0.7 children on average. The family sizes reported by older women in Upper Egypt are similar to those of the metropolitan women and among the younger women the excess in Upper Egypt is only 0.5 children. So, the number of children ever born among women aged 35–39 years in Cairo and Alexandria is 4.7, in Lower Egypt it is 5.8 and in Upper Egypt 6.3 births per woman, while after the impact of mortality, the figures are 3.8, 4.5, and 4.4 living children, respectively. Among 45–49 year olds, completed fertility levels of 6.2, 7.1 and 6.8 live births, respectively, were reduced to 4.6, 5.0 and 4.4 living children.

Table 5.6 demonstrates that in the recent past women in the various regions underwent quite different reproductive experiences in order to achieve similar family sizes. Women in Upper Egypt had more live births and more often experienced the loss of a child through death, while for those in Cairo and Alexandria there were fewer confinements and fewer losses. Associated with these must be equivalent regional variations in the health and nutritional status of the surviving children, as well as in the prevailing levels of maternal mortality.

Regional variations in infant and child mortality are presented in tables 5.7 and 5.8 and figure 5.4. Birth history estimates of the past 25 years' trends are shown in table 5.8 for the larger regional groupings; Cairo and Alexandria, Lower Egypt and Upper Egypt. A more detailed regional breakdown of mortality in the five years preceding the survey can be seen in table 5.7, and the 1960–79 trends in the probability of dying before age five years are illustrated in figure 5.4.

With a 1975–9 infant mortality rate of 85 deaths per 1000 live births, and childhood mortality of 120 deaths per 1000 live births in the first five years of life, children

Table 5.6 Mean numbers of children ever born and living children by current age of women and region of residence

Region of residence	Current age of women						
	15–19	20–24	25–29	30–34	35–39	40–44	45–49
A Cairo + Alexandria							
Children ever born	0.1	0.7	2.0	3.6	4.7	5.3	6.2
Living children	0.1	0.6	1.6	3.0	3.8	4.1	4.6
B Lower Egypt							
Children ever born	0.1	1.2	2.9	4.6	5.8	6.7	7.1
Living children	0.1	1.0	2.4	3.7	4.5	5.2	5.0
C Upper Egypt							
Children ever born	0.2	1.6	3.1	5.1	6.3	6.6	6.8
Living children	0.2	1.2	2.3	3.6	4.4	4.3	4.4

NOTE: Figures refer to all women, assuming the proportions ever married in the household survey.

living in Alexandria have by far the best prospects of survival. While this applies to all ages of childhood, they enjoy a special advantage during the first month of life and in the age group one to four years; 3 per cent of all children born in Alexandria were reported to have died in the neo-natal period compared with the figure of 6 per cent for all Egypt; and 4 per cent compared with 7 per cent of survivors to age one year were reported to have died between ages one and five years. Lower neo-natal mortality may be expected in the more modern urban environment where the greater likelihood of ante-natal care and supervision of deliveries by trained personnel, generally in hospital, contribute enormously to lowering mortality in early life.

Similarly, the urban environment of Alexandria is associated with the lowest levels of mortality after the first year of life. At this age most deaths that occur are the product of environmental factors. The availability of clean water, safe sanitation systems, preventive and curative health care, higher educational level among the mothers and more adequate nutrition result in distinctly lower mortality among residents of the city. Further-more, the low total fertility rate of 3.1 live births per woman in Alexandria, denotes reproductive behaviour which is conducive to child survival, reducing the likelih-ood of lower maternal attrition.

Next to Alexandria, the lowest mortality is to be found among children living in Cairo and the urban areas of Lower Egypt. The infant mortality rates in the five years before the survey were 120 infant deaths per 1000 children born in Cairo, and 108 per 1000 in urban Lower Egypt; and childhood mortality amounted to 167 and 145 deaths per 1000 live births, respectively, between birth and age five years. Neo-natal mortality was lower in Cairo, but survival chances after age one month were better among children in urban Lower Egypt, especially during the post neo-natal period, when 6 per cent of births in urban Lower Egypt were reported to have died as opposed to 8 per cent in Cairo. Once again the advantages associated with urban living contribute to lower infant and child mortality, especially in the neo-natal period and between ages one and five years. As well as a common mortality experience, Cairo and urban Lower Egypt share a similar level of current fertility, with just over four live births per woman.

There is little difference in the reported infant mort-ality rates of urban and rural Lower Egypt, but the prospects of survival after age one year are considerably lower for the rural children. According to the 1975–9 figures, 4 per cent of urban survivors to age one year had died before their fifth birthday, compared with 7 per cent of rural children. Rural residence is associated with

greater susceptibility to morbidity in respect of nut-ritional status, health services and the environment, and this is reflected in the higher mortality in the age group of one to four years.

Perhaps the most distinctive feature of table 5.7 is the excessive mortality among children living in Upper Egypt, especially among rural children. At the mortality rates prevailing during the five years preceding the survey, there would be 182 deaths per 1000 live births in rural Upper Egypt in the first year and 252 deaths per 1000 live births in the first five years of life. This is nearly double the mortality of Alexandria during the same period. The mortality disadvantage is evident at all ages of childhood in rural Upper Egypt. For the period 1975–9, 9 per cent of all children born had died during the first month of life, 9 per cent between ages one month and one year, and among the survivors to age one year another 9 per cent had died before their fifth birthday. Infant and child mortality is lower in urban than in rural Upper Egypt but in both cases it remains higher than is the case for rural Lower Egypt. Excess mortality in Upper Egypt is a consequence of profound differences in social and economic living conditions. While current fertility among women in the rural areas of Upper Egypt is only marginally higher than it is among those in Lower Egypt, the lower survival chances in the former denote a much greater disparity in the reproductive experience of women in the two regions.

It can be seen from figure 5.4 that mortality has declined substantially in all regions during the past two decades and that the regional differentials have been broadly maintained throughout. Table 5.8 indicates that in the late 1950s, 27 per cent of all children born in Cairo and Alexandria had died in the first five years of life,

Deaths under age five
per thousand live births
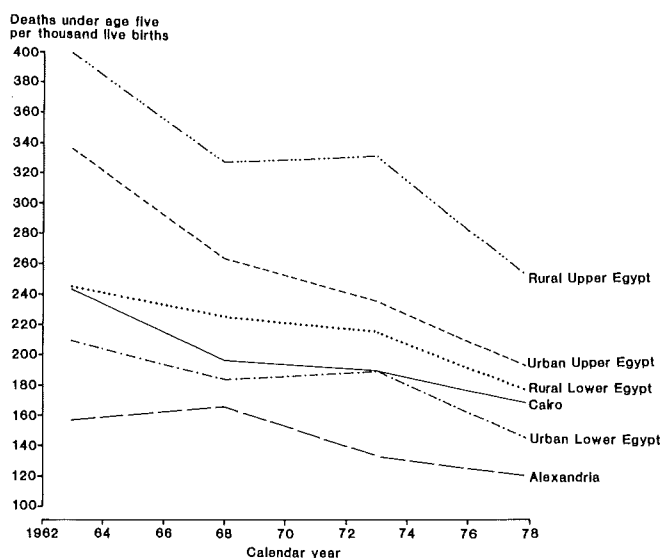
Figure 5.4 Regional trends in childhood mortality

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Table 5.7 Infant and childhood mortality in the five years before the survey by region of residence

Region	Neo-natal	Post-neonatal	$_1q_0$	$_2q_0$	$_5q_0$	$_1q_1$	$_3q_2$	$_4q_1$
Cairo	40	80	120	146	167	30	25	54
Alexandria	(29)	(56)	(85)	(102)	(119)	(19)	(18)	(37)
Lower Egypt	50	59	110	142	168	37	30	66
Lower urban	46	61	108	129	145	24	19	42
Lower rural	52	59	110	146	175	41	33	73
Upper Egypt	82	92	174	210	239	43	38	79
Upper urban	54	91	144	170	(193)	29	(28)	(57)
Upper rural	90	92	182	221	252	47	40	85
All urban	43	74	118	141	161	27	23	49
All rural	68	73	142	179	208	43	36	78
Egypt	59	74	132	165	191	37	31	67

NOTES: $_nq_x$ is the deaths between ages x and x + n per 1000 survivors to age x.
Figures in parentheses are based on less than 500 children exposed.

Table 5.8 Regional trends in infant and childhood mortality

Region, years before survey	Neo-natal	Post-neonatal	$_1q_0$	$_2q_0$	$_5q_0$	$_1q_1$	$_3q_2$	$_4q_1$
A Cairo + Alexandria								
0–4	37	75	112	136	155	26	22	48
5–9	53	70	123	156	179	39	27	64
10–14	43	70	113	162	191	55	35	88
15–19	38	87	125	177	224	60	57	114
20–24	48	88	135	203	(272)	78	(86)	(158)
B Lower Egypt								
0–4	50	59	110	142	168	37	30	66
5–9	57	61	117	171	211	61	48	106
10–14	54	63	117	166	216	56	60	113
15–19	52	67	119	178	236	67	71	133
20–24	62	84	146	218	304	84	109	185
Upper Egypt								
0–4	82	92	174	210	239	43	38	79
5–9	92	108	199	261	312	77	69	141
10–14	83	108	191	253	314	76	82	152
15–19	96	116	212	300	385	111	121	219
20–24	93	123	216	301	(398)	109	(139)	(232)

NOTE: $_nq_x$ is the deaths between ages x and x + n per thousand survivors to age x.
Figures in parentheses are based on less than 500 children exposed.

compared with 16 per cent 20 years later. In Lower Egypt meanwhile, childhood mortality fell from 30 to 17 per cent, and for children born in Upper Egypt it fell from 40 per cent in the late 1950s down to 24 per cent in the late 1970s.

To sum up, this section has described the regional variations in mortality associated with differences in fertility. The national experience has been shown to range from Alexandria, where the total fertility rate is 3.1 live births per women and where one in eight of children born alive has died before age five years, to rural Upper Egypt, where the total fertility rate is 6.3 live births and where one in four of children born alive has died in the first five years of life. Cairo and the urban areas of Lower Egypt have similar levels of fertility — just over four live births per woman — and mortality with around 16 per cent of children born alive dying in the first five years of life. Rural areas of Lower and Upper Egypt each have a total fertility rate of more than six live births per woman, but 18 per cent of children born in Lower Egypt have died in the first five years of life, according to the 1975–9 mortality levels, compared with 25 per cent of those in Upper Egypt. The EFS data demonstrates that the differences in current survival chances among children in the respective regions have also been a feature of regional differences in the family building experience of the past few decades.

5.5 SOCIO-ECONOMIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY

In the preceding chapter, variations in fertility according to measures of socio-economic status were described. Lower fertility was to be found among the most educated urban couples and those in which the husband worked in a professional occupation, while the highest levels of fertility were encountered in the more traditional rural setting in which levels of literacy were low and the husband worked in agriculture. In this section the associated differentials in child survival are examined. In table 5.9 are shown estimates of infant and child mortality for the five years preceding the survey according to selected measures of socio-economic status. In table 5.10, regional estimates of mortality according to socio-economic status are presented. Based as they are on smaller numbers of births, the figures in table 5.10 refer to the ten years before the survey, roughly covering the period 1970–9.

5.5.1 Education of mother and husband

Children born to women whose husbands are illiterate have the lowest chances of surviving. More than one in five of them had died in the first five years of life according to the 1975–9 mortality rates. Compared with those children born to women with literate husbands, they are characterised by high neo-natal mortality and especially high mortality in the age group one to four years. The chances of child survival improve progressively with husband's education level, and among those with at least secondary education, the odds of dying in the first five years of life falls to just over one in eight.

There is also a strong association between a mother's education and the survival of her children. A woman's education tends to denote higher socio-economic status than would an equivalent educational level for a man. This is because women are less likely than men to be educated and also that a woman is usually married to a man with the same or a higher level of education than herself.

This is reflected in the education differentials in infant and child mortality. The children of illiterate women have a marginally better chance of survival than those born to women whose husbands are also illiterate. At the other extreme, children of women with a primary education have similar prospects of survival to those born to women whose husbands have at least a secondary education. The lowest level of infant and child mortality is to be found among the children of women with at least a

Table 5.9 Infant and childhood mortality in the five years before the survey by background variables

	Neo-natal	Post-neonatal	$_1q_0$	$_5q_0$	$_4q_1$
Level of education					
Illiterate, no schooling	65	75	140	205	75
Illiterate, some schooling	51	82	133	192	67
Can read and write	51	78	129	160	60
Primary	(42)	(49)	(91)	(122)	(34)
Secondary +	44	44	88	(99)	(13)
Pattern of work					
Before and after marriage	65	60	125	180	63
After marriage only	57	82	139	206	78
Before marriage only	76	(48)	(124)	(183)	(68)
Never worked	57	77	134	191	67
Husband's education					
Illiterate, no schooling	66	78	144	216	84
Illiterate, some schooling	67	73	140	(216)	(89)
Can read and write	51	74	125	174	57
Primary	58	79	136	187	59
Secondary +	47	59	106	128	24
Husband's occupation					
Professional, technical, clerical	50	67	118	143	29
Sales + service	52	81	133	191	67
Manual	54	75	129	186	66
Farm, self employed	57	77	134	198	74
Farm, employee	80	67	147	218	83
All	59	74	132	191	67

NOTE: Figures in parentheses based on less than 500 children exposed.

secondary education, less than one in ten of whom die in the first five years of life. Of especial note are the superior survival chances between ages one and five years for children of women with at least primary education, or those whose husbands have a secondary education or more.

Table 5.10 shows that there are similar intra-regional education differentials in infant and child mortality. Mother's education seems to have the most impact in Cairo and Alexandria, where one in five children born alive to illiterate women had died in the first five years of life, compared with one in thirteen of those born to women with at least a primary education. Regional differences persist even when controlling for education. In fact, the children of women married to husbands with a primary education in Upper Egypt are still less likely to survive than are those born to women elsewhere whose husbands are illiterate.

5.5.2 Husband's occupation and women's work

Working in a professional, technical or clerical occupation is associated with better prospects of child survival, especially between the ages of one and five years. At the opposite extreme are the children of women married to agricultural workers. Among the former, 12 per cent of children had died in the first year, and 14 per cent in the first five years of life at the 1975–9 mortality rates. Meanwhile, 15 per cent of the children of agricultural workers had died in infancy, and 22 per cent before age five years. The children of workers in sales and service, or

of manual workers experience mortality closer to the level of agricultural workers than to the levels of the professional and clerical categories.

The intra-region differentials in mortality by husband's occupation conform roughly to the national pattern. Those in the professional and clerical occupations in Cairo and Alexandria are the most advantaged, with 11 per cent of their children reported to have died in the first five years of life, compared with 14 per cent in Lower Egypt, and 25 per cent in Upper Egypt. Of especial note are the differences in the mortality of the children of the agricultural workers in Lower and Upper Egypt. In Lower Egypt, 19 per cent of children born to self-employed farmers, and 20 per cent of those born to agricultural workers, had died between birth and age five years, compared with 27 and 30 per cent, respectively, in Upper Egypt. This appears to illustrate most vividly the differences in living conditions between the two regions.

There is little association between the pattern of a woman's work and the mortality of her children. Women who worked before and after marriage report a slightly lower than average level of infant and child mortality. This can probably be accounted for by the inclusion in this group of the most educated mothers, who are employed in the modern sector of the economy.

To sum up, in this section the effects of socio-economic status on child survival have been described. Educated couples, or those in which the husband works in the modern sector were shown to be least likely to experience the death of the child. This applies especially to deaths in

Table 5.10 Regional estimates of infant and child mortality in the ten years before the survey by selected background variables

	Cairo + Alexandria		Lower Egypt		Upper Egypt		All	
	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$
Level of education								
Illiterate	137	198	116	193	184	271	146	225
Can read and write	(104)	(147)	111	(188)	(187)	(282)	127	196
Primary +	58	77	86	(129)	(138)	(168)	81	110
Husband's education								
Illiterate	128	204	118	198	191	285	152	237
Can read and write	139	188	110	184	174	259	133	203
Primary +	86	115	106	165	173	(221)	113	157
Husband's occupation								
Prof., tech., clerical	89	109	93	141	(187)	(253)	113	154
Sales + service	114	171	121	197	190	265	143	213
Manual	127	183	112	184	163	249	131	201
Farm, self-employed	—	—	111	191	190	274	140	221
Farm, employee	—	—	124	202	195	299	162	254
All	116	166	113	188	185	272	138	212

NOTE: Figures in parentheses based on less than 500 children exposed.

the neo-natal period and between ages one and five years. It arises from the relatively privileged access to the means of ensuring the health and nutritional status of mother and child among the higher socio-economic groups. The least privileged in this respect are the children of women living in Upper Egypt, those married to agricultural workers, or those whose husbands are illiterate. Socio-economic differences in child mortality were observed within each region, though the greatest variations were to be found in Cairo and Alexandria with their more complex socio-economic structure. As for regional variations, socio-economic differentials in mortality combine with those in fertility to produce marked socio-economic differences in family building.

5.6 REPRODUCTIVE FACTORS AND INFANT AND CHILDHOOD MORTALITY

Residence and socio-economic status establish the broad level of mortality, with factors such as maternal age, birth order and birth spacing determining more precisely the position within this broad level. They are considered in this section, at both the national and regional levels. Birth history estimates of infant and childhood mortality during the five years preceding the survey according to mother's age, birth order and the length of the preceding interval, are presented in table 5.11. In table 5.12 they are shown for each of the major regions for the period ten years before the survey.

5.6.1 Maternal age

Children born to women under 20 years of age are much more likely to die in the first five years of life than are those born to women aged 20 years or more. According to mortality rates reported in 1975-9 among teenage women, there would be 183 infant deaths per 1000 live births and 243 deaths per 1000 live births between birth and age five years. Their chances of survival are lower at all ages of childhood, although they are particularly at risk during the neo-natal and post-neonatal periods. The lowest mortality was reported among children born to women between 20 and 39 years of age, about 120 of whom, out of every 1000, had died in infancy and 180 out of every 1000 in the first five years of life. Mortality rises again among children born to women aged 40 years or more, though it remains lower than is the case for the youngest mothers.

The pattern of high mortality among children born to women at the extremes of the reproductive ages is fairly universal. It is associated with selectivity in respect of social and economic factors, though it is principally and

directly an effect of physiological determinants. Children born to younger mothers are at risk in the neo-natal period for a range of causes associated with pregnancy and delivery, and in addition the larger proportion of low birth weight children involves a disadvantage which extends beyond the neo-natal period.

Table 5.12 shows a similar association between maternal age and infant and child mortality in the three regions. In particular, younger maternal age denotes high infant mortality among women in Cairo and Alexandria. Despite the association between maternal age and mortality within each region, it is still the case that mortality in Upper Egypt far exceeds that in the rest of Egypt. In fact even the most advantaged in this respect in Upper Egypt are much less likely to survive the first five years of life than are children born to mothers of any age in the rest of Egypt.

5.6.2 Birth order

The chances of surviving infancy and childhood decrease according to the number of live births the mother has already experienced. Hence, 13 per cent of first births had died in the first year of life and 17 per cent in the first five years, compared with 17 and 22 per cent, respectively, of seventh or higher order births. Though it is often found that first births are subject to especially high neo-natal mortality, there is no evidence of this being the case in Egypt. Mortality among children born to women of high parity is especially elevated in the neo-natal and post-neonatal periods. As for maternal age, this is associated with physiological factors exacerbated by the effects of socio-economic status.

The pattern of lower mortality among first births and significantly lower prospects of survival among high parity births can be seen in Cairo and Alexandria, and Lower Egypt. In Upper Egypt it is less distinct, with only marginal differences in the chances of surviving the first five years of life. While this may in part be due to the effects of poor reporting, it may also reflect the over-riding impact of the environmental factors in Upper Egypt and the absence of a significant subgroup of women who experience low fertility and low mortality which would depress the overall mortality of lower order births.

5.6.3 Length of the preceding birth interval

The factor that differentiates most strikingly among alternative survival chances is the length of the preceding birth interval. According to the 1975-9 mortality rates, 19 per cent of all live births that occurred after an

Table 5.11 Infant and childhood mortality in the five years before the survey by mother's age, birth order and length of the preceding birth interval

	Neo-natal	Post-neonatal	$_1q_0$	$_5q_0$	$_4q_1$
Mother's age at birth					
Less than 20	82	102	183	243	73
20–29	56	69	124	182	66
30–39	50	66	116	176	67
40–49	(76)	(82)	(158)	205	57
Birth order					
1	61	67	128	167	45
2–3	50	73	123	187	73
4–6	57	69	126	190	74
7+	75	90	165	224	71
Previous birth interval					
<2 years, all	83	111	194	281	108
<2 years, previous child survived	68	99	167	263	115
2–3 years	39	54	93	147	60
4 years or more	21	30	52	79	29
All	59	74	132	191	67

NOTE: Figures in parentheses based on less than 500 children exposed.

Table 5.12 Regional estimates of infant and child mortality in the ten years before the survey by maternal age, birth order and the length of the previous birth interval

	Cairo + Alexandria		Lower Egypt		Upper Egypt		All	
	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$
Maternal age								
Less than 20	175	216	118	201	241	322	177	254
20–39	106	156	111	184	170	260	130	203
40–49	(161)	(181)	(162)	(244)	(206)	(233)	(175)	(224)
Birth order								
1	107	145	108	155	194	269	135	186
2–6	112	167	108	186	180	272	132	211
7+	(153)	(203)	137	226	194	276	162	242
Previous birth interval								
<2 years, all	176	252	160	264	270	384	203	306
<2 years, previous child survived	166	245	142	247	222	347	173	281
2–3 years	84	131	80	152	126	206	97	168
4 years or more	65	85	39	77	66	103	55	87
All	116	166	113	188	185	272	138	212

NOTE: Figures in parentheses based on less than 500 children exposed.

interval of less than two years had died in infancy and nearly 30 per cent before age five years. These compare with 5 and 8 per cent respectively among children who were born after an interval of four years or more. Short intervals accounted for nearly 40 per cent of all those included in the 1975–9 estimates and 15 per cent of intervals were of length four years or more. This indicates that a high level of mortality is a fairly common experience among many Egyptian women for at least some of their children.

The relationship holds for deaths at all ages of childhood. It may be argued that the observed relationship is simply an effect of the mortality of consecutive children. That is, the death of one child would tend to shorten the interval to the next pregnancy and hence there would appear to be an association between interval length and mortality. To answer this, the table includes mortality rates for children born after a short interval in which the previous child survived. Since the effect is only to reduce infant mortality to 17 per cent and child mortality to 26

per cent, this argument would seem to be refuted. Not only does the exclusion of the deceased children have little effect on the relationship between child survival and the length of the previous interval, if anything it strengthens it in respect of mortality between ages one and five years.

Several hypotheses are advanced to account for this strong and consistent association between interval length and infant and child mortality. They involve the effects of maternal attrition arising from the close spacing of births and the competition for the mother's care and attention among a number of young children. It is likely that each of these account for higher mortality at different ages of childhood, although it is not possible to pursue this here.

It can be seen from table 5.12 that there is an equally strong relationship between interval length and mortality in each of the regions, though regional differentials are still preserved. The exclusion of deceased children has most impact in Upper Egypt, which is to be expected in the context of such high mortality. In Upper Egypt nearly 40 per cent of all children born after an interval of less than two years had died in the first five years of life according to the 1970–9 mortality rates. This represents 40 per cent of the intervals included in the estimates and illustrates the very high mortality experience among women in that region.

To sum up, in this section the effect of reproductive factors on child survival has been clearly demonstrated. Those women who start childbearing earlier and who have a large number of children, experience the highest levels of infant and child mortality. This is especially the case for children born after an interval of less than two years, when the likelihood of dying in the first five years of life is increased by approximately 100 per cent compared with those born after an interval of two years or more. It has also been shown, that although the reproductive experience of women in Upper Egypt is one associated with higher mortality, this accounts for only a small part of the large regional differential in the chances of a child's survival.

5.7 SUMMARY

The levels of infant and child mortality in Egypt have declined significantly since the early 1950s, when nearly 190 out of every 1000 children born alive had died in infancy and 360 out of every 1000 before their fifth birthday. This compares with 130 infant deaths per 1000 live births, and 190 deaths per 1000 live births in the first five years of life, for children exposed to the mortality conditions of the late 1970s. This reduction in mortality appears to have been especially pronounced between the early 1950s and the mid-1960s. Thereafter, a much more gradual decline in mortality, especially in infancy, is observed.

There are substantial differentials in infant and child mortality, most notably according to region of residence. It is lowest in Alexandria and highest in the rural areas of Upper Egypt. Low mortality, especially in the age group one to five years, is also to be found among children of women who have a primary education or whose husbands have a secondary education, and among women whose husbands are in professional or clerical occupations.

The EFS data also show that the level of mortality, at all ages of childhood, is much higher among children born to teenage women than among those born to women aged 20 years or more. Further, women who have a large number of children at short intervals between subsequent pregnancies experience the highest levels of infant and child mortality.

There are substantial intra-regional differentials according to socio-economic status and reproductive factors, though the excess mortality in Upper Egypt dominates all other factors.

These differences in infant and child mortality are related to the observed variations in fertility and result in a marked diversity in the experience of family building among regional subgroups of the population.

BIOLOGICAL FACTORS AND FERTILITY

6.1 INTRODUCTION

This chapter is primarily a study of breastfeeding and its potential fertility implications in Egypt. Though the principal interest in breastfeeding is usually its effect on child health, there are also physiological effects on the mother. In particular breastfeeding a child is associated with a delay in the return of ovulation and hence in the biological capacity to conceive. In the absence of any other form of family planning, therefore, breastfeeding may extend the interval to the next conception and ultimately affect a woman's total fertility. Breastfeeding also represents one of the mechanisms through which infant mortality may influence fertility, since the effect of an infant death before it is weaned may be a reduction in the period of non-susceptibility to conception.

In the traditional fertility context, featuring the absence of modern methods of contraception, birth spacing is largely a function of the norms governing behaviour after childbirth. Most important of these is the non-susceptible period associated with lactation. Among those groups of women who do not practise any form of contraception, breastfeeding is one of the most important volitional factors that affect birth spacing and hence ultimate family size.

To the extent that women have adopted modern methods of family planning, breastfeeding has less impact on the overall level of fertility. It has been observed in many societies that among those women who innovate in respect of family planning, notably in the modern urban sector, there has coincidentally been a decline in the proportion of children who are breastfed and in the number who are breastfed for extended periods. This trend in breastfeeding is, however, usually prompted by considerations quite apart from family planning and it often takes place in the absence of any significant change in contraceptive use. This chapter confines itself to analysing regional and socio-economic variations in lactation in Egypt and the potential implications of these for birth spacing. No attempt is made to evaluate to what extent, if at all, the birth spacing effects are in practice negated by the use of family planning.

The individual survey of EFS included questions about breastfeeding and the return of menstruation in relation to the last two children born alive. In the case of multiple births, information was collected about the child who was breastfed longest. The results presented here refer to the children born at the beginning of the open and the last closed live birth intervals. The open interval refers to the months that have elapsed since the most recent live birth and the closed interval to the months between the dates of birth of the last two children. Women who said that they were pregnant at the time of the survey are an exception to this, and for them the closed interval refers to the months since their most recent live birth. Hence, women who were pregnant when they were interviewed have no open interval. There were 6825 women who were asked about breastfeeding and amenorrhoea in the open interval and 6943 women in the closed interval.

The organisation of this chapter is as follows. In section 6.2 are presented the reported ages at menarche among the survey women, so as to indicate the onset of the physiological capacity to conceive. The results on breastfeeding in the open and closed intervals for all women are presented in section 6.3. Breastfeeding with and without supplementation are considered, and the associated anovulatory period based on the womens' reports of post-partum amenorrhoea are examined in section 6.4. Section 6.5 looks at the relationship between breastfeeding and maternal age and parity. Regional variations in lactation and post-partum amenorrhoea are presented in section 6.6 and the association with socio-economic status in section 6.7. Finally the results are summarised in section 6.8.

6.2 AGE AT MENARCHE

Menarche marks the beginning of a woman's fecund life. Age at menarche indicates the onset of the biological capacity to conceive though, since almost all childbearing occurs within marriage in Egypt, it is age at marriage that reveals the actual onset of exposure to conception. In this section the association between the two can be seen.

Women were asked how old they were when they had their first menstrual period. The distribution of the responses to this question are shown by current age of woman in table 6.1. The age 12 years was reported by 25

Table 6.1 Age at menarche by current age of women

Current age	Age at menarche (per cent)							Mean age
	<12	12	13	14	15	16+	Total	
<20	8	23	21	24	17	7	100	13.4
20–24	8	24	22	21	16	9	100	13.4
25–34	9	26	23	19	14	9	100	13.3
35+	9	24	22	21	14	10	100	13.4
All ages	8	25	22	21	15	9	100	13.4

NOTE: The table excludes seven women under age 20 for whom the response was 'not started'.

per cent of the women, and the percentages decline gradually through ages 13 and 14 down to 15 per cent of women who answered 15 years. The mean age at menarche for all women is 13.4 years, and the fact that it is almost constant among women of different ages indicates that there has been little change. The mean age at first marriage in Egypt was estimated to be 21.3 years so it would appear that at the national level fecundity predates the onset of exposure by about eight years.

The distribution of reported age at menarche by region of residence can be seen in table 6.2. Women living in Cairo and Alexandria reported the earliest age, 13.0 years, and those in rural Upper Egypt the latest, 13.8 years. While this difference may be due to reporting errors, it would accord with a generally observed association between climatic, health and environmental conditions and the age at the first menstrual period. The regional distribution of age at menarche is the converse of that in age at first marriage that was described in chapter 3. As a result there is a greater coincidence between the age at which a woman becomes fecund and her actual onset of exposure to conception in the more traditional context of Upper Egypt, while the modern urban context features a growing separation between the two.

6.3 BREASTFEEDING

The extent of breastfeeding in Egypt is outlined in this section, in terms of the proportion of infants who are

Table 6.2 Age at menarche by region of residence

Region of residence	Age at menarche (per cent)					Mean age
	<12	12	13–14	15+	Total	
Cairo	12	31	42	15	100	13.0
Alexandria	16	26	42	16	100	13.0
Urban Lower Egypt	10	29	43	18	100	13.1
Urban Upper Egypt	5	21	48	26	100	13.6
Rural Lower Egypt	9	24	43	24	100	13.4
Rural Upper Egypt	5	19	42	34	100	13.8
Egypt	8	25	43	24	100	13.4

breastfed and the length of time for which they are breastfed, alone and with the addition of other food. A brief elaboration of breastfeeding in relation to child health and reproduction and a description of the available data, the problems of interpretation and the various measures that can be derived from it, precede the presentation of the substantive results.

6.3.1 General introduction

As it was noted earlier, breastfeeding is an important factor in relation to child health and mortality and, through its effect on birth spacing, to fertility. An infant who is breastfed is provided with important immunities as well as the essential nutrients which sustain it through the first few months of life. The mothers' milk has been described as the biologically true food for the infant, and human milk looks different, has a different composition, and its various nutrients are digested with greater ease when compared with the milk of other mammals. Bottle fed infants are thus at a disadvantage compared with their breastfed counterparts even when conditions are otherwise favourable.

However, while the healthy infant may tolerate the excess, deficiency or alteration in the chemical nature of a nutrient entailed in consuming breastmilk substitutes, the infant whose physical resources are low, or whose environment is otherwise hostile, may be in jeopardy. In circumstances when sanitary conditions are poor, for example, and clear water not consistently available, bottle feeding brings with it extra risks of contamination. Lacking the natural immunities provided in the mother's milk, the bottle fed infants are therefore especially susceptible to the onset and the fatal consequences of diarrhoeal and other infectious diseases. As for the child who is breastfed, it too may become vulnerable when it is weaned, especially if this occurs in circumstances when supplementation is provided too late and is inadequate and unsuitable.

The primary interest of this chapter is in the physiological role of breastfeeding in relation to reproduction. The suckling infant stimulates the flow of natural contraceptive hormones within the mother and thus effects a delay in the return of ovulation. Additional months of breastfeeding may therefore extend the period of non-exposure to the risk of conception and lengthen the interval between births. It is believed that the hormonal response is related to the intensity of suckling, and hence the contraceptive effect is strongest when the infant is fed on demand without supplementation. The biological action is easily upset, therefore, if breastfeeding is on a rigid schedule, or supplemented early with artificial foods or

semi-solids. While on average breastfeeding postpones the return of ovulation, individual experience varies quite considerably. The effect is non-linear, diminishing with the age of the child, so that breastfeeding is neither perceived to be, nor is it in reality a very effective method of contraception. In practice when the period of post-partum abstinence is short it may often be the advent of the next pregnancy that prompts weaning, in the belief that continued breastfeeding would be harmful to the foetus or to the living child. No attempt is made here to isolate such cases, and for the purpose of the present chapter weaning is assumed to have been voluntary.

The child health and fertility effects of breastfeeding are clearly not independent of one another. The cessation of breastfeeding induced by an early infant death may hasten the return of ovulation and reduce the interval to the next conception. Short birth intervals are themselves associated with higher mortality risks for both children, especially the child born at the end of the interval. When an infant is not breastfed, or is weaned when it is very young, both higher mortality and shorter birth intervals are indicated.

A trend has been observed in many societies away from breastfeeding in favour of bottle feeding, especially as breastmilk substitutes become readily accessible. Associated with modernism, it occurs most commonly among urban mothers. This trend has resulted in excess infant mortality in many societies and in response to this efforts have been made to reverse it by encouraging mothers to breastfeed their children.

In this chapter the trends in breastfeeding among Egyptian women are investigated via the analysis of regional and socio-economic differentials. Prolonged breastfeeding is usually a feature of the traditional scene, and in Egypt this may be especially so as the Koran states that a child should be aged two years before it is weaned. It is in the modern urban sector, where many births occur in hospital, where breastmilk substitutes are most readily available and where a larger number of mothers go out to work, that a shorter duration of breastfeeding may be expected.

6.3.2 Data and measurement

Two aspects of breastfeeding are studied here; first the duration of breastfeeding, defined as the total length of time for which the child was breastfed; and second the duration of full breastfeeding, defined as the length of time for which the child was given only breastmilk without any supplementary food. Women were asked for how many months the child was breastfed, and how old the child was when they began giving it additional food as well as breastmilk. Additional food includes milk other than breastmilk, but it excludes the infusion of water and herbs that is commonly given to infants in Egypt from the early days of life.

A number of problems arise in analysing breastfeeding data which has been collected as part of a retrospective survey such as EFS. One concerns the quality of reporting. Aside from the problems of definition and memory in relation to when a child was weaned and how old it was when it was given additional food, there are the difficulties associated with providing reliable information about the dates of events. The accurate measurement of birth intervals is most assured when birth dates are reported in calendar years and months. In fact, as can be seen in table 6.3, the calendar year and month of birth

Table 6.3 Percentage of open and closed birth intervals for which calendar year and month were stated, by current age of women

	Current age of women							
	<20	20–24	25–29	30–34	35–39	40–44	45–49	All ages
A Closed interval								
Per cent stated								
Exact date	45	50	53	51	45	43	38	47
Calendar year	10	7	6	5	7	8	7	7
Years ago	45	43	41	44	48	49	55	46
Mean length of interval (months)	21	26	32	38	43	44	43	36
Months since beginning of interval	27	36	49	69	98	138	184	83
B Open interval								
Per cent stated								
Exact date	75	70	67	63	52	50	40	58
Calendar year	5	5	5	4	6	7	7	6
Years ago	20	25	28	33	42	43	53	36
Mean length of interval (months)	12	18	24	40	65	104	148	57

was reported for only 58 per cent of births at the beginning of the open interval, and 47 per cent of those at the beginning of the closed interval. For most of the remainder, the birth date was given in terms of the years before the survey when it occurred. The percentages reporting year and month were higher among younger women, reflecting the fact that they were reporting on more recent events, as well as their higher levels of literacy. On average the start of the closed interval occurred 36 months before the survey among women in the 20–24 year age group, rising with age to 184 months among women aged 45–49 years. Not only is there a relationship between current age and months since the beginning of the open or closed intervals, table 6.3 also indicated an increase in the length of closed birth intervals with age.

Unlike the birth histories, durations of breastfeeding and amenorrhoea were collected in terms of months since the event, that is since the live birth that opened the interval in question. An advantage of this is that it may relate to time in a way which may be more familiar to the respondents. However, the distribution of responses still features heaping on certain durations. While this may be preference for specific durations, it may equally well represent customary practice in respect of breastfeeding. Interpretation of the figures is further confounded by the fact that women may have answered in terms of the customary behaviour, regardless of whether it was adhered to in the specific case. While the pattern of reporting by duration is noted during the course of this chapter, no attempts are made either to check on its authenticity or to apply adjustment procedures.

A number of measures of the average duration of breastfeeding can be derived from data such as EFS. Simplest to measure are the mean or median derived from the reported durations of breastfeeding in the closed interval. One disadvantage of these is the bias introduced by censoring effects on the length of the last closed birth intervals. Restricted to women with at least two live births, they would tend to over-represent short birth intervals, and hence shorter duration of breastfeeding also. The mean and median derived directly from them would therefore tend to understate the duration of breastfeeding for all women. A problem also arises in the treatment of infants who died before they were weaned. In such cases, the duration of breastfeeding has been set equal to the age at death. The effect of this artificial truncation is to depress the estimates of the mean duration of breastfeeding by a small amount.

Measures based on the reported durations of breastfeeding are commonly affected by exaggerated heaping on certain preferred durations, notably 12, 18 and 24 months. One method of avoiding reliance on such dubious reporting is to utilise the proportions of women who were still breastfeeding at the time of the survey by the current age of the child. However, estimates based on current status in the open interval are themselves subject to quite severe bias. Longer intervals disproportionately include women with long breastfeeding durations and the result is an overstatement of the time for which infants are breastfed. The usefulness of the current status data in the open interval is also hampered by the fact that the proportions still breastfeeding often do not decline monotonically with months since the birth. Primarily a function of misreporting of birth date and small sample size, they commonly fluctuate around an overall downward trend. Finally, as for the closed intervals, inclusion of children who died before they were weaned in the denominators has a slightly depressive effect on the durations of breastfeeding.

One method of avoiding some of the bias associated with the study of the open and closed intervals separately is a life-table analysis of the durations of breastfeeding among all children born during the five years before the survey. Use of a cut-off date removes the least reliable information and presents a more up-to-date estimate, though it also introduces a downward bias in the length of the closed intervals. Since information on breastfeeding is available only in respect of births at the beginning of the open and closed intervals, some of the births that took place during the five years are omitted from the analysis. This is the case for women who had more than two live births or, for currently pregnant women, who had more than one birth during the preceding five years.

The proportions of all children who are breastfed for at least x months are estimated as the product of a series of monthly conditional probabilities for each month between birth and age x. Each conditional probability is equal to the proportion of women who have breastfed for at least n months who then go on to breastfeed for at least one month more. As a product of probabilities, the resulting proportions of infants breastfed for at least x months are thus constrained to decline monotonically with age. The life-table method allows the optimal use of the data on children who died before they were weaned. In such cases, a child who died at age x is included in the calculations only up to the age at death. Life table estimates such as these are birth-weighted, as opposed to the women-weighted methods described above. While it resolves several of the problems encountered in the analysis of retrospective breastfeeding data, the life-table method still relies heavily on the reported durations of breastfeeding and hence retains the biases entailed thereby.

In this chapter the four sets of estimates of the duration of breastfeeding in Egypt are presented so as to provide an indication of the likely range of variation. At the sub-national level, only the summary measures derived from the closed birth interval alone are presented.

6.3.3 Breastfeeding

The distribution of the duration in completed months of breastfeeding in the closed interval is shown in table 6.4. In the case of children who died before they were weaned, the duration of breastfeeding was set equal to the age at death. Seven per cent of children were not breastfed, and 7 per cent were breastfed for less than six months. Seventy-five per cent were breastfed for at least one year, 51 per cent for at least one and a half years, and 30 per cent for two years or more. These figures indicate a fairly prolonged period of breastfeeding to be usual in Egypt, and this is supported by the mean age at weaning of 16.7 months.

A striking feature of table 6.4 is the frequency of the responses 12, 18 and 24 months. Fourteen per cent of women stated that they breastfed their children for exactly 12 months, 18 per cent for 18 months and 19 per cent reported that the child was 24 months old when it was weaned. To some extent this must reflect the customs in regard to breastfeeding in Egypt, where it may be usual to wean the child when it is about one, one and a

half, or two years of age. Whether this was so, and how closely it was conformed to in each case, is unknown. Customs such as these tend to be inexact and would probably include the months surrounding 12, 18 and 24 months as conforming to them. It is clear also, however, that women were also simply prone to answer in terms of exact half years. It is not possible to disentangle the contribution of the various elements that resulted in the final distribution in table 6.4. While little can be said about the extent of the preference for selected durations, it is probably quite safe to conclude that the pattern of preference, rising from 12 to 24 months, is one that would only be seen in the context of prolonged breast-feeding.

The various summary measures of the duration of breastfeeding that were described above are presented in table 6.5. The table illustrates the bias implicit in measurements based on the open and closed interval separately. The life-table estimates based on all births in the five years before the survey fall in between those derived from the open and closed intervals alone, and are closer to the latter. So, the median duration of breastfeeding based on the open and closed intervals is 18.5 months, compared with 18.1 months derived from the closed interval alone. Meanwhile, the current status estimate of 23.3 months is clearly an over-estimate of the median in relation either to all women, or to all births. The larger difference between the life-table and closed-interval est-

Table 6.4 Distribution of women according to the duration of breast-feeding in the last closed birth interval

Duration, x completed months	Number of women	Percentage	Percentage breastfed at least x months
Not breastfed	477	7.0	100.0
0	29	0.4	93.0
1	82	1.2	92.5
2	101	1.5	91.3
3	130	1.9	89.9
4	88	1.3	87.9
5	73	1.1	86.6
6	163	2.4	85.6
7	105	1.5	83.2
8	140	2.1	81.6
9	148	2.2	79.6
10–11	179	2.6	77.4
12	936	13.8	74.7
13–14	279	4.1	61.0
15–17	371	5.5	56.9
18	1219	18.0	51.4
19–23	239	3.5	33.4
24	1307	19.2	30.0
25–29	137	2.0	10.7
30	70	1.0	8.7
31–35	72	1.1	7.6
36	156	2.3	6.6
37 or more	290	4.3	4.3
Total	6791		

NOTE: The table excludes 152 responses 'not stated'.

Table 6.5 Comparison of percentage of women still breastfeeding and mean duration of breastfeeding from different sources

Months since birth (x)	Percentage still breastfeeding x months after the birth derived from:		
	Closed interval	Open interval current status	Life-table estimates, open + closed interval
3	90	89	91
6	86	89	87
9	80	92	82
12	75	81	79
15	57	76	64
18	51	62	59
21	32	62	38
24	30	27	36
30	9	30	14
36	7	10	10
Mean duration	16.7	24.3	19.1
Median duration	18.1	23.3	18.5

imates of the mean, 19.1 months compared with 16.7 months respectively, reflects the differential representation of extended intervals between the two. In the remainder of this chapter the mean duration of breastfeeding in the closed interval forms the basis of the analysis. While the use of this measure is unlikely to affect the main conclusions about differentials, its likely downward bias should not be forgotten.

6.3.4 Full breastfeeding

The distribution of women by the duration of breastfeeding without supplementation in the closed interval is shown in table 6.6. Seventy-four per cent of mothers claimed to have fed their children on breastmilk alone for at least six months, 42 per cent for at least 12 months and 18 and 10 per cent respectively for at least 18 and 24 months. These figures, and the main duration, 10.6 months, indicate that not only is breastfeeding fairly prolonged, but that supplementation occurs quite late for a sizeable number of children.

The reported durations of full breastfeeding also feature heaping on certain preferred durations. The most common response to the question was 12 months, which accounted for 21 per cent of the closed intervals. Next most common was six months, reported by 13 per cent of women, and this was followed by 7 and 6 per cent who answered 8 and 18 months respectively. Compared with the case of all breastfeeding, women seemed a little less likely to concentrate their answers regarding the age when supplementary food was first introduced on a limited number of months. In particular there is a fairly even distribution of responses between ages three months and one year.

The extent to which heaping on preferred durations is a feature of both supplemented and unsupplemented breastfeeding may be seen in table 6.7, which shows the distribution of responses for full breastfeeding according to the duration of breastfeeding. The table indicates that there was a tendency for heaping to occur in respect of both the age at supplementation and the age at weaning. Fifty per cent of women who said that the child was breastfed for 12 months claimed to have introduced supplementary food at the age of 6 or 12 months.

Table 6.6 Distribution of women according to the duration of full breastfeeding in the last closed birth interval

Duration, x completed months	Number of women	Percentage	Percentage breastfed at least x months
Not breastfed	477	7.0	100.0
0	63	0.9	93.0
1	180	2.6	92.1
2	213	3.1	89.4
3	215	3.2	86.3
4	396	5.8	83.1
5	244	3.6	77.3
6	877	12.9	73.7
7	357	5.2	60.9
8	491	7.2	55.6
9	233	3.4	48.4
10–11	214	3.2	45.0
12	1440	21.1	41.8
13–17	210	3.1	20.7
18	430	6.3	17.6
19–23	86	1.3	11.3
24	322	4.7	10.0
25+	361	5.3	5.3
Total	6809		

Mean duration of full breastfeeding = 10.6 months

NOTE: The table excludes 134 responses 'not stated'.

Table 6.7 Distribution of duration of full breastfeeding by duration of breastfeeding

Duration of breastfeeding (months)	Per cent full breastfed for (months)									Per cent stated 6, 12, 18, 24 months	Number of women
	0–5	6	7–11	12	13–17	18	19–23	24	Total		
6	54	46	—	—	—	—	—	—	100	46	163
7–11	29	22	49	—	—	—	—	—	100	22	572
12	17	21	33	29	—	—	—	—	100	50	934
13–17	13	14	25	25	23	—	—	—	100	39	648
18	13	14	20	29	3	21	—	—	100	64	1219
19–23	8	12	16	23	2	5	34	—	100	40	239
24	8	10	16	36	2	9	0	19	100	74	1305

Similarly, full breastfeeding was reported to have lasted exactly 6, 12 or 18 months among 64 per cent of infants who were breastfed for 18 months, and, with the addition of the response 24 months, among 74 per cent of those who were said to have been weaned at age 24 months.

Table 6.7 also reveals that there were preferred joint responses, for example for a period of 6 months full breastfeeding and 12 months breastfeeding, or for 12 months full breastfeeding and 18 or 24 months breastfeeding altogether. In a fairly large number of cases, supplementation was said to have occurred in the same month that the child was weaned. It is not possible here to say how much this was due to enforced weaning occasioned by the death of the child, or a result of the selection of the same preferred durations, or how much it reflects a pattern of sudden weaning. In the latter case especially when weaning is late and supplementation inadequate and unsuitable, higher child mortality may ensue.

A situation has been described in which most children, 93 per cent, are breastfed, and in which infants are on average nearly 11 months when they are introduced to supplementary food, and nearly 17 months when they are weaned. This reflects an overall picture of fairly prolonged breastfeeding.

6.4 POST-PARTUM AMENORRHOEA

The concern of this section is the impact of breastfeeding on the length of the anovulatory period. A reasonable proxy for this is the period of post-partum amenorrhoea, derived from the women's reports on the months that elapsed before the return of menstruation. In the absence of lactation, the period of post-partum infecundability would last for about two months. The additional contribution of breastfeeding can be seen in table 6.8, which provides the distribution of the months that elapsed before the return of menses in the last closed interval. Just over half of the women said that they were amenorrhoeic for six months or more, 40 per cent for at least one year and 10 per cent for two years or more. On average menstruation is reported to have returned 8.4 months after the birth.

Table 6.8 Distribution of women according to the duration of post-partum amenorrhoea in the last closed birth interval

Duration, x completed months	Number of women	Percentage	Percentage breastfed at least x months
0	2	0.0	100.0
1	1644	25.1	100.0
2	884	13.5	74.8
3	243	3.7	61.3
4	197	3.0	57.6
5	131	2.0	54.6
6	316	4.8	52.6
7	133	2.0	47.7
8	149	2.3	45.7
9	120	1.8	43.4
10–11	106	1.6	41.6
12	1199	11.8	39.9
13–17	249	3.8	21.6
18	464	7.1	17.8
19–23	72	1.1	10.7
24 or more	627	9.6	9.6
Total	6536		

Mean duration of post-partum amenorrhoea = 8.4 months

NOTE: Total excludes 379 responses 'never came back' and 28 not stated.

As for breastfeeding, so the figures seem to indicate a preference for selected durations, although the pattern is not the same. Exactly one and two years were still clearly preferred, accounting respectively for the return of menses in 12 and 10 per cent of the closed intervals. The most common responses, however, were one and two months, which were reported by 25 and 14 per cent of the women. According to this, ovulation would have resumed within three months of roughly 40 per cent of the births. This implies that lactation alone had little effect on the length of the birth interval for these women. A distinction may be drawn between possible explanations for the peaked distributions of breastfeeding and amenorrhoea. While it is conceivable that the reports of breastfeeding reflect actual behaviour, much of the peaking on 12 and 18 months in the distribution of post-partum amenorrhoea is likely to be a result of preference for these durations.

The relation between the reported length of breastfeeding and the duration of amenorrhoea in the closed interval can be seen in table 6.9. There is a steady progression in the duration of amenorrhoea with length of breastfeeding, ranging from four months among those breastfed without supplementation to less than three months and 2.3 months among those who were weaned altogether before age three months, to 10 and 12 months respectively among those who were breastfed for 24 months or more. It is interesting to note that at the shorter durations of full breastfeeding, the period of post-partum amenorrhoea exceeds the age at which the child was reported to have been introduced to supplementary food, while with increasing duration of full breastfeeding, the relationship is reversed. The mean duration of full breastfeeding for all children in the closed interval is 10.6 months, compared with 8.4 months on average before the return of menstruation. While this may be a genuine outcome of the diminishing contraceptive effect of breastfeeding without supplementation in the context of a fairly prolonged period of dependence on the mother's milk alone, it is a reminder

Table 6.9 Mean duration of amenorrhoea by length of breastfeeding in the last closed birth interval

Duration of breastfeeding (months)	Mean duration of amenorrhoea (months)	
	Full breastfeeding	Breastfeeding
Not breastfed	2.6	2.6
0–2	4.1	2.3
3–5	5.7	2.8
6–11	8.1	3.9
12–17	11.2	7.0
18–23	11.7	10.2
24+	9.9	12.3
All	8.4	8.4

also of the caution with which data of this kind should be treated. In particular it reinforces doubts about the woman's interpretation of the age at the introduction of supplementary food, and the effect of the different patterns of misreporting on the durations of amenorrhoea and breastfeeding.

Despite the irregularities noted in the distributions of amenorrhoea and breastfeeding, it is clear that breastfeeding postpones the return of menses in Egypt and extends the period of non-exposure to conception by an average of about six months. It is also apparent that breastfeeding without supplementation is most strongly related to the period of post-partum infecundability. This would seem to confirm that it is breastfeeding which is unsupplemented that is most effective in delaying the return of ovulation.

6.5 BREASTFEEDING AND POST-PARTUM AMENORRHOEA BY MATERNAL AGE AND PARITY

The association between a woman's current age and the length of her last closed birth interval was noted earlier. As maternal age increases, and thereby parity also, the birth intervals become longer. In part this can be ascribed to changes in fecundity with age, and there may also be a decline in coital frequency. The greater use of contraception after births of a desired parity can also not be discounted. The contribution of differences in the lactationally induced anovulatory period by maternal age and parity to the observed relationship is a matter for discussion here.

The proportions of infants who were not breastfed and the mean duration of breastfeeding and post-partum amenorrhoea in the last closed birth interval are shown according to mother's age at the birth in table 6.10. The proportions of infants who were not breastfed declines with maternal age, from 7 per cent of children born to women under 30 years of age, to 5 per cent of those born to women aged 40–49 years. Similarly, in the age group 20 years and above, the mean durations of full breastfeeding, breastfeeding and post-partum amenorrhoea can be seen to increase with mother's age. Mothers aged 20–29, for example, reported that the infant was breastfed without supplementation for an average of 10 months and weaned at age 16 months, and that menses returned eight months after the birth. Women aged 30–39 years at the birth reported full breastfeeding for 12 months, weaning the child on average at age 19 months and that menstruation returned ten months after the birth.

Table 6.10 Duration of breastfeeding and amenorrhoea in the last closed birth interval by maternal age at birth

Maternal age	Per cent not breastfed	Mean duration (months)		
		Full breastfeeding	Breastfeeding	Post-partum amenorrhoea
<20	7	11.4	16.9	7.3
20–29	7	10.0	15.9	7.9
30–39	6	11.6	18.6	10.0
40–49	5	13.8	20.2	9.8
All ages	7	10.7	16.9	8.5

An explanation often advanced for such an association between breastfeeding and maternal age is that the more fecund younger mothers are likely to conceive earlier and hence to wean the child at an earlier age than their older counterpart. This being so, no conclusions about trends could be drawn from figures such as these. The validity of this hypothesis cannot be explored here. However, the trend in the proportions of infants breastfed by mother's age may refute this as the total explanation. Urban mothers and those of higher socio-economic status form a greater component of the younger than the older age group, with the effect that the durations of breastfeeding are depressed among younger mothers. In any case, there appears only to be a difference of about two months between the period of post-partum infecundability associated with breastfeeding by younger and older mothers. On its own it therefore seems to account for only a small proportion of the observed differences by age in the length of the last closed birth interval.

A strong association between parity and breastfeeding can be seen in table 6.11. Thirteen per cent of first born children were not breastfed, 7 per cent of second and third births, and 5 per cent of births of parity seven or more. First born children often display lower proportions breastfed on account of special difficulties in instituting the breastfeeding reflex. For this reason, second or higher births are a better indicator of voluntary behaviour. Infants are breastfed for longer with

Table 6.11 Duration of breastfeeding and amenorrhoea in the last closed birth interval by parity

Parity	Per cent not breastfed	Mean duration (months)		
		Full breastfeeding	Breastfeeding	Post-partum amenorrhoea
<1	13	8.2	12.9	5.6
2–3	7	10.1	15.9	7.7
4–6	6	11.3	18.0	9.4
7+	5	12.0	18.9	9.8
All ages	7	10.6	16.7	8.4

increasing parity. Those of parity two or three were breastfed without supplementation for 10 months on average and they were weaned at age 16 months and the associated period of post-partum amenorrhoea was eight months. This compares with 12 months of full breastfeeding, 19 months at the age of weaning and ten months before the return of menstruation for seventh or higher order births. The differences in breastfeeding by parity are very similar to those by maternal age, as expected since higher parity coincides with older maternal age. So, in the case of parity too, the increase in breastfeeding by parity accounts for a difference of about two months in the period of post-partum infecundability.

To conclude, it would seem that while there are differences in the breastfeeding of infants according to their mother's age and parity, this accounts for only about an additional two months of non-susceptibility to conception.

6.6 BREASTFEEDING AND POST-PARTUM AMENORRHOEA BY RESIDENCE

Large regional variations in fertility and infant and childhood mortality have been described earlier in this report. In this section, regional variations in lactation and the associated period of post-partum infecundability are described and placed in this context.

Table 6.12 shows the distributions of the duration of breastfeeding in the last closed birth interval by region of residence. Urban mothers were less likely than rural mothers to breastfeed their children. About 10 per cent of urban infants were not breastfed, compared with 5 per cent of rural infants, and this seems to vary little by region. Women living in rural Upper Egypt were most likely to report prolonged periods of breastfeeding, 84 per cent of them claiming to have breastfed for at least one year and 45 per cent for two years or more. The earliest ages at weaning were recorded in Alexandria, where only 55 per cent of mothers claimed to have breastfed for at least one year and 13 per cent for two

Table 6.12 Duration of breastfeeding in the last closed birth interval by region of residence

Region of residence	Per cent of live births						Per cent who stated exactly (months)		
	Not breastfed	Breastfed at least (months)							
		0	6	12	18	24	12	18	24
Cairo	8	92	79	63	38	19	14	16	12
Alexandria	10	90	72	55	31	13	17	16	9
Urban Lower Egypt	11	89	79	66	41	17	14	22	13
Urban Upper Egypt	10	90	85	76	53	30	15	20	19
Rural Lower Egypt	5	95	91	81	57	32	14	21	23
Rural Upper Egypt	6	94	90	84	62	45	13	13	25
All urban	10	90	78	64	39	19	14	18	13
All rural	5	95	91	82	60	38	13	18	24
Egypt	7	93	86	75	51	30	14	18	19

years or more. Cairo and the urban areas of Lower Egypt shared similar patterns of breastfeeding, about 65 per cent weaning their children after age one year and 18 per cent after two years. There is also a similarity between rural Lower Egypt and urban Upper Egypt in this respect, with about 80 per cent of children breastfed for at least one and 30 per cent for at least two years.

It was shown in section 6.3 that the distribution of the reported durations of breastfeeding in the closed interval features exaggerated heaping on ages 12, 18 and 24 months. Such effects at the regional level may also be seen in table 6.12, which indicates the proportion of women who said that the child was aged exactly 12, 18 or 24 months when it was weaned. The extent of the preference seems to be weakest in Cairo and Alexandria, where just over 40 per cent of children in the closed intervals were said to have been weaned at exact ages 12, 18 or 24 months. In urban Upper Egypt, and in all rural areas, more than half of all durations were accounted for by the responses one, one and a half and two years. Of especial note is the different pattern of heaping on the preferred durations. In Cairo and Alexandria and in urban Lower Egypt, 12 and 18 months were most popular, while in Upper Egypt and in rural Lower Egypt it was the duration 24 months that was most commonly chosen.

A clearer picture of regional differentials in breast-feeding and in the associated period of post-partum infecundability is provided in table 6.13. The mean durations of full breastfeeding, breastfeeding and post-partum amenorrhoea for women by region and in two broad age groups are presented. The table confirms that breastfeeding with and without supplementation, and the associated period of post-partum infecundability, is shorter in urban than in rural areas. Urban infants were breastfed without supplementation for 8 months on average, and weaned at age 14 months, and menses returned nearly seven months after the birth. Rural infants were reported to have been just over one year old when they were introduced to supplementary food, just over one and a half years when they were weaned and menses returned nearly 10 months after the birth. Among urban infants, those living in Alexandria were breastfed for the shortest and those in Upper Egypt for the longest periods. Similarly, it was rural women living in Upper Egypt who reported the most prolonged breastfeeding. In Alexandria, the child was breastfed without supplementation for nearly 7 months, weaned at age 12 months, and the associated period of post-partum infecundability was 6 months. In rural Upper Egypt, the child was breastfed without supplementation for more than 13 months, weaned on average at age 20 months, and the associated period of post-partum infecundability was nearly 10 months. It can be seen that moving from the traditional to the modern context signifies a decline in breastfeeding, and in the period during which a child is breastfed after the introduction of supplementary food. There also seems to be a smaller difference between the duration of full breastfeeding and the period of post-partum amenorrhoea, though the validity of this may be affected by the pattern of misreporting of the respective durations.

Similar regional variations in the duration of breast-feeding can be seen among women under and over age 30 years. On the whole the younger women reported some-what lower durations of breastfeeding, especially supplemented, and a shorter period of post-partum amenorrhoea.

It has been shown in this section that Egypt features quite large regional variations in lactation. Breastfeeding is most prolonged in rural Upper Egypt, and children are weaned earliest in Alexandria. As a consequence, menstruation returns on average just over three months later among women living in rural Upper Egypt than among those living in Alexandria. The natural fertility effect of this would be higher fertility in the modern sector, while

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Table 6.13 Mean duration of breastfeeding and post-partum amenorrhoea in the last closed birth interval by region of residence

Region of residence	Current age								
	Less than 30			30 or more			All ages		
	Full breastfeeding	Breastfeeding	Amenorrhoea	Full breastfeeding	Breastfeeding	Amenorrhoea	Full breastfeeding	Breastfeeding	Amenorrhoea
Cairo	7.4	12.3	5.0	7.7	14.4	7.4	7.6	13.7	6.6
Alexandria	5.9	9.2	4.6	6.9	13.1	6.3	6.6	12.0	5.9
Urban Lower Egypt	8.0	12.2	5.0	8.9	14.7	7.2	8.6	13.8	6.4
Urban Upper Egypt	9.7	14.3	6.6	9.8	17.9	8.9	9.8	16.6	8.1
Rural Lower Egypt	10.5	15.9	7.8	12.4	18.8	10.3	11.7	17.7	9.4
Rural Upper Egypt	13.0	19.2	8.5	13.6	20.8	10.6	13.4	20.1	9.8
All urban	7.9	12.3	5.2	8.3	14.9	7.5	8.1	14.0	6.7
All rural	11.6	17.3	8.1	12.8	19.6	10.4	12.4	18.7	9.6
Egypt	10.1	15.3	7.0	10.8	17.5	9.1	10.6	16.7	8.4

of course the opposite is the case. It seems that only in the traditional sector does breastfeeding affect birth-spacing, extending the period of non-susceptibility by several months, while the lower fertility in the modern sector is achieved through more deliberate and effective family planning.

6.7 BREASTFEEDING AND POST-PARTUM AMENORRHOEA BY SOCIO-ECONOMIC STATUS

Table 6.14 shows the mean durations of full breast-feeding, breastfeeding and post-partum amenorrhoea reported in the last closed interval according to measures of socio-economic status. It also includes the proportions of children who were not breastfed, and the proportions who were breastfed for at least 6, 12 and 24 months.

The lowest proportions of children breastfed, and the shortest durations of breastfeeding, were reported by women with a secondary or university education or whose husbands had a university education. Most striking are the women with a university education, 18 per cent of whom did not breastfeed their children. Nearly

half of them breastfed for less than six months and a negligible few for two years or more. The average age at the introduction of supplementary food was 3.4 months, and at weaning, 6.2 months, and the associated period of post-partum amenorrhoea also was 3.4 months. The lowest levels of fertility were to be found among the most educated women, and in this it is clear that lactation has little part to play.

At the other extreme are the children of women who are illiterate, or whose husbands have less than a primary education, 6 per cent of whom were not breastfed, and more than 30 per cent were aged two years or above when they were weaned. Most extreme in this group were the children of women whose husbands were illiterate, and had no schooling. Such children were reported to have been fed on breastmilk alone for 12 months on average, they were weaned when they were over one and a half years old, and the associated period of post-partum amenorrhoea was 9.5 months. The proportions of children who were not breastfed and the mean duration of breastfeeding steadily increase with education, of the mother or of her husband. They were a little above the national average for women who can read and write and those whose husbands have a primary educ-

Table 6.14 Mean duration of breastfeeding and amenorrhoea in the last closed birth interval by background variable

Background variable	Per cent of live births				Mean duration (months)		
	Not breastfed	Breastfed at least (months)			Full breastfeeding	Breastfeeding	Amenorrhoea
		6	12	24			
Mother's education							
Illiterate, no school	6	90	81	35	11.9	18.3	9.2
Illiterate, some school	6	87	77	31	10.5	17.1	8.7
Can read and write	8	83	69	21	9.0	14.7	6.7
Primary	13	74	58	13	6.8	12.1	6.5
Secondary	17	57	36	4	4.2	8.1	3.5
University	18	45	25	2	3.4	6.2	3.4
Mother's work							
Since and before marriage	9	80	68	27	9.6	15.7	7.8
Since marriage only	6	87	76	30	10.8	17.1	8.3
Before marriage only	8	82	67	26	10.1	15.2	7.9
Never worked	7	87	76	31	10.7	16.9	8.5
Husband's education							
Illiterate, no school	6	90	82	38	12.2	18.7	9.5
Illiterate, some school	6	89	79	32	11.4	17.7	8.6
Can read and write	6	88	78	30	10.7	17.1	8.6
Primary	8	83	70	22	8.9	14.9	7.4
Secondary	12	73	57	13	7.0	11.9	5.4
University	16	57	34	5	4.6	8.3	3.7
Husband's occupation							
Professional, technical	13	64	45	10	5.8	10.1	4.9
Clerical	10	78	67	15	7.7	13.4	6.5
Sales + services	6	89	76	29	10.3	16.7	8.2
Manual	8	85	73	24	9.5	15.8	7.6
Farmer	5	91	84	39	12.7	19.0	10.1
Agricultural worker	5	92	84	44	13.4	19.9	10.1
Total	7	86	75	30	10.6	16.7	8.4

ation, while among women with a primary education or whose husbands have a secondary education, 13 per cent of children were not breastfed, supplementary food was introduced at age six months on average and weaning occurred at age one year.

Similar variations in breastfeeding can be seen according to the husband's occupation. Women whose husbands were in professional, technical or administrative occupations were least likely to breastfeed their children, and to breastfeed them for prolonged periods. Thirteen per cent of children were not breastfed, breastfeeding without supplementation lasted for six months on average and weaning took place at 10 months, and the associated period of post-partum infecundability was approximately 4.9 months. At the other extreme were the children of farmers and agricultural workers, only 5 per cent of whom were not breastfed. They were fed on breastmilk alone for more than a year on average and were over one and a half years old when they were weaned.

To sum up, the socio-economic variations in lactation are similar to those observed by region. The most educated women, those with the most educated husbands, or whose husbands work in the modern urban sector are the least likely to breastfeed their children or to breastfeed them for prolonged periods. The traditional pattern of almost universal and prolonged breastfeeding is to be seen among women who are themselves, or whose husbands, are illiterate, or those whose husbands are in agricultural work. Hence in the traditional sector, lactation still plays a part in birthspacing, extending the period of post-partum infecundability by about eight months, while in the modern sector, this is not the case. The figures on lactation by socio-economic status as well as region demonstrate that the lower the fertility, the lower seems to be the dependence on breastfeeding in family planning.

6.8 SUMMARY

Most infants in Egypt are breastfed and the duration of breastfeeding is fairly prolonged. Ninety-three per cent of children born at the beginning of the closed intervals were breastfed, they were reported to have relied on breastmilk alone for nearly 11 months on average, and were aged nearly 17 months when they were weaned. Menstruation returned just over eight months after the birth, and thus an extra six months was added on to the period of post-partum infecundability which would obtain in the absence of lactation.

It seems that modernization is associated with some decline in the proportion of infants who are breastfed, and who are breastfed for prolonged periods. The most educated women and those whose husbands were educated, for example, were least likely to breastfeed their children, and weaning occurs several months earlier among them than is the case for all Egypt. Lower education is accompanied by an increase in the proportion of children breastfed, and the mean duration of breastfeeding, with or without supplementation. Similarly lactation is lower among women whose husbands work in the modern sector, while in the traditional agriculture sector the pattern of prolonged breastfeeding persists.

At the regional level also, a tendency to breastfeed fewer of their children, and to breastfeed them for shorter periods, was observed among women living in the modern urban areas of Egypt. The traditional pattern of universal and prolonged lactation, and some dependence on its contraceptive properties, appears to persist in rural areas, especially in Upper Egypt. In that the associated period of post-partum infecundability extends the interval between births, so the effect of lactation in the traditional sector is to depress fertility. The modern urban sector is marked by a diminishing role of lactation in relation to fertility.

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FAMILY SIZE DESIRES

7.1 INTRODUCTION

One of the major aims of the Egyptian Fertility Survey was to investigate future fertility intentions and family size norms among Egyptian women. In chapter 4, fertility behaviour was examined from several angles. This chapter introduces the attitudinal dimensions of childbearing. These dimensions are an important part of the background against which achieved fertility and contraceptive use in Egypt should be gauged. If, for example, women in urban areas want small families, but there is a low level of contraceptive use, then there is a clear need to improve the availability of efficient methods and promote their effective use, so that women may implement their intentions. If, on the other hand, there is a preference for large families in rural areas, then a low level of contraceptive use is consistent with that intention. The need then is more fundamental: to alter the motivation for large families. Statements of family size desires also have value in improving our understanding of the sources of the substantial regional differentials in current fertility revealed in chapter 4, because these differentials may reflect either intended difference or variation in implementation.

Six principal dimensions of family size desires will be analysed in this chapter: perceived benefits of children; educational aspirations for children; present desire to cease childbearing; number of additional children wanted; desired family size; and preference for the sex of children. In chapter 9, family size preferences shall be reconsidered in light of the levels of contraceptive knowledge and use.

At the outset it should be pointed out that the analysis is based on responses to questions which were phrased in terms of the individual woman's preferences and not the norms of her community or reference group. Thus, any comparison of the results presented here with those from other surveys conducted recently in rural Egypt, must take into account the comparability of the specific questions being asked.

Further, the analysis is based on statements of opinions and attitudes which are not necessarily related to actual and intended behaviour. Questions on attitudes are qualitatively different from those on age, parity, etc, which are subject only to response error. Attitudes and opinions can change from one time to another. Even though this is an important issue, we shall find a good deal of consistency in the data which suggests that aggregates of responses are meaningful and may be interpreted with reasonable confidence.

7.2 BENEFITS OF CHILDREN

The values of children are undoubtedly many. Most fundamentally, they provide for the continuation of the human species. But this reason for wanting children is usually not uppermost in the minds of parents. To them, children are valued as sources of joy and happiness, companionship and pride. In some circumstances, children may also be prized because they are a potential means of support and security once parents are no longer able to provide for themselves. It has been argued that the high fertility in rural Egypt is associated with a pattern in which children provide an economic advantage to their parents and that when this economic advantage is reduced or lost the pattern of high fertility will also change. This section will review the perceived benefits of children, as reported by women interviewed in the first phase of the Egyptian Fertility Survey, to determine if this is in fact the case.

In this survey, only the simplest of these benefits were explored, the economic benefits. The short-term benefits were measured by asking the age at which mothers felt sons and daughters became useful. The long-term benefits were measured by whether women expected to live with their children when they got old, and the sources of old age financial support expected by wives.

Table 7.1 shows the age at which sons and daughters are perceived by women to be useful according to selected socio-economic characteristics. The analysis is restricted to ever-married women who have had at least one live birth. Overall mothers perceive sons to be useful at age 11.5 and daughters at age 10. Daughters are perceived to become useful at an earlier age than sons regardless of the socio-economic background of the mother. This pattern probably reflects perceptions that girls mature at earlier ages, and that they can be of use to the mother within the home.

Table 7.1 The age at which children are perceived by mothers to be useful

Socio-economic characteristics	Sons	Daughters
All Egypt	11.5	9.9
A Wife's characteristics		
Type of residence		
Urban	11.8	10.6
Rural	11.3	9.4
Region		
Cairo	12.2	11.0
Alexandria	10.4	11.0
Lower Egypt	10.9	9.3
Upper Egypt	12.0	9.8
Type of locality		
Metropolitan	11.8	11.0
Cities: Lower Egypt	10.5	9.5
Cities: Upper Egypt	13.5	10.7
Towns: Lower Egypt	11.6	10.0
Towns: Upper Egypt	12.6	10.4
Rural: Lower Egypt	10.9	9.2
Rural: Upper Egypt	11.7	9.6
Level of education		
Illiterate: no school	11.4	9.6
Illiterate: some school	11.2	9.9
Can read and write	11.5	10.3
Primary	11.8	10.9
Secondary	11.8	11.2
University	11.9	11.5
Pattern of work		
Before and after	11.1	9.8
Worked before only	11.2	9.8
Worked after only	11.5	9.9
Never worked	11.5	9.9
B Husband's characteristics		
Level of education		
Illiterate: no school	10.7	9.6
Illiterate: some school	11.3	9.6
Can read and write	11.4	9.8
Primary	11.7	10.2
Secondary	11.9	10.4
University	12.2	11.2
Occupation		
Prof., tech. and admin.	11.9	10.9
Clerical	12.2	10.6
Sales	11.5	10.1
Farmers	10.8	9.1
Agricultural workers	11.3	9.5
Services	11.4	9.9
Manual	11.5	10.1

The figures in table 7.1 also show a positive association between socio-economic status of the mother and the perceived ages at which sons and daughters become useful. Thus, these ages are lowest for mothers residing in rural areas, particularly Lower Egypt, those with the lowest education, and women whose husbands are engaged in agricultural occupations.

The long-term benefits of children are described in table 7.2 in terms of old age support. Overall, 46 per cent of women expect to live with their children when they are old. This proportion increases from 22 per cent for urban women to as much as 64 per cent for rural women. The regional differentials in the dependence on children for a place to live are even sharper with the proportion of mothers expecting to live with their children increasing from 12 per cent in Metropolitan Egypt, to 27 per cent in urban Lower Egypt, 48 per cent in urban Upper Egypt, and to 54 and 77 per cent in rural Lower, and rural Upper Egypt, respectively. Education and husband's occupation are also inversely related to the proportion expecting to live with their children.

The proportion of women expecting financial support from children generally follows the same pattern of differentials shown by the proportion expecting to live with their children in old age. The data, however, disclose that the educational level of spouses and husband's occupation have the most interesting pattern of differentials. As level of education increases, the proportion expecting support from their children decreases, while the proportion depending on pension increases. Women whose husbands are in professional and clerical occupations are the least likely to expect to rely on their children in old age, while those whose husbands are involved in the agricultural sector are the most likely.

When this pattern of differentials in the perceived benefits of children is contrasted with the pattern of differentials in fertility, an inverse association emerges between socio-economic status of women and both achieved fertility and the perceived economic utility of children.

7.3 EDUCATIONAL ASPIRATIONS FOR CHILDREN

In the Egyptian Fertility Survey, women who had at least one live birth were asked of the level of education they wanted for sons and daughters. In chapter 4, it has been shown that fertility in Egypt is inversely related to the level of education of parents. Therefore, if this pattern continues to prevail, the educational aspirations that mothers have for their children may affect the fertility of the next generation.

Table 7.3 shows the desired level of education for sons and daughters according to socio-economic characteristics of the mothers. Overall, 77 per cent and 62 per cent of women want university education for sons and daughters, respectively. However, more education is desired in urban areas than in rural areas for sons and daughters. For example, for daughters in urban areas, 79 per cent of women want them to have university educ-

Table 7.2 Expectations of mothers for old age support according to socio-economic characteristics

Socio-economic characteristics	Percentage of mothers who expect to live with children	Percentage of mothers who expect financial support from:		
		Income from business, etc.	Pension	Children
All Egypt	46	30	54	54
A Wife's characteristics				
Type of residence				
Urban	22	18	69	43
Rural	64	38	43	63
Region				
Cairo	12	18	71	37
Alexandria	11	12	72	45
Lower Egypt	47	35	48	55
Upper Egypt	70	32	50	65
Type of locality				
Metropolitan	12	16	71	39
Cities: Lower Egypt	18	16	71	36
Cities: Upper Egypt	24	13	81	55
Towns: Lower Egypt	34	21	55	43
Towns: Upper Egypt	61	27	55	63
Rural: Lower Egypt	54	41	42	61
Rural: Upper Egypt	77	35	45	66
Level of education				
Illiterate: no school	57	31	45	62
Illiterate: some school	45	35	56	65
Can read and write	25	27	65	45
Primary	18	24	73	34
Secondary	6	26	93	18
University	4	21	99	10
Pattern of work				
Before and after	42	34	60	52
Worked before only	45	23	57	63
Worked after only	43	34	57	51
Never worked	46	29	53	54
B Husband's characteristics				
Level of education				
Illiterate: no school	61	32	38	65
Illiterate: some school	53	31	41	63
Can read and write	42	31	57	54
Primary	30	24	68	46
Secondary	20	21	86	35
University	10	29	98	17
Occupation				
Prof., tech. and admin.	17	26	94	27
Clerical	17	16	96	31
Sales	38	36	34	58
Farmers	69	74	23	65
Agricultural workers	69	13	33	68
Services	41	15	80	53
Manual	34	13	62	52

ation; in rural areas the corresponding figure is 47 per cent. More education is also desired for sons than daughters, especially in rural areas. Thus, in urban areas, 88 per cent of women want sons to have university education compared with 79 per cent for daughters. In rural areas, the differences are sharper: 74 versus 47 per cent.

The regional pattern of differentials is as might be expected. Metropolitan Egypt and urban Lower Egypt have the highest aspirations. Urban Upper Egypt and rural Lower Egypt are more or less similar with somewhat lower aspirations. Rural Upper Egypt is again the exception with much higher proportion of women wanting no education for daughters. Low educational aspir-

Table 7.3 Per cent distribution of mothers by level of education wanted for sons and daughters, according to socio-economic characteristics

Socio-economic characteristics	Sons					Daughters				
	None	Primary	Secondary	University	Total	None	Primary	Secondary	University	Total
All Egypt	5	2	16	77	100	16	2	20	62	100
A Wife's characteristics										
Type of residence										
Urban	2	1	9	88	100	5	2	14	79	100
Rural	8	2	16	74	100	25	4	24	47	100
Region										
Cairo	1	1	9	89	100	3	3	14	90	100
Alexandria	0	0	4	96	100	1	1	5	93	100
Lower Egypt	2	1	14	83	100	8	2	21	69	100
Upper Egypt	13	3	24	60	100	38	5	24	33	100
Type of locality										
Metropolitan	1	0	7	92	100	2	2	12	84	100
Cities: Lower Egypt	0	0	7	93	100	1	1	13	85	100
Cities: Upper Egypt	3	2	19	76	100	8	2	23	67	100
Towns: Lower Egypt	2	1	7	90	100	4	2	11	83	100
Towns: Upper Egypt	8	3	19	70	100	23	3	24	50	100
Rural: Lower Egypt	2	1	15	72	100	24	3	24	49	100
Rural: Upper Egypt	15	4	25	56	100	44	5	24	27	100
Level of education										
Illiterate: no school	7	2	21	70	100	23	4	24	49	100
Illiterate: some school	3	2	13	82	100	12	2	20	66	100
Can read and write	1	0	7	92	100	5	1	13	81	100
Primary	0	0	4	96	100	2	1	8	89	100
Secondary	0	0	1	99	100	0	0	3	97	100
University	0	0	1	99	100	0	0	3	97	100
Pattern of work										
Before and after	4	1	11	84	100	15	2	17	66	100
Worked before only	3	2	13	82	100	13	3	19	65	100
Worked after only	3	1	15	81	100	13	4	20	63	100
Never worked	5	2	16	77	100	17	3	20	60	100
B Husband's characteristics										
Level of education										
Illiterate: no school	10	4	23	63	100	28	4	25	43	100
Illiterate: some school	3	2	17	78	100	15	5	20	60	100
Can read and write	2	1	13	84	100	10	3	20	67	100
Primary	1	0	8	91	100	5	1	16	78	100
Secondary	0	0	4	96	100	0	0	8	92	100
University	0	0	1	99	100	0	0	3	97	100
Occupation										
Prof., tech. and admin.	0	0	4	96	100	2	0	7	91	100
Clerical	1	0	5	94	100	2	0	13	85	100
Sales	4	1	11	84	100	10	3	18	69	100
Farmers	7	2	19	72	100	27	4	22	47	100
Agricultural workers	14	4	27	55	100	34	4	27	35	100
Services	3	2	14	81	100	10	3	23	64	100
Manual	2	1	14	83	100	9	2	19	70	100

ations for daughters are also shown by women whose husbands are working in the sales and agricultural sectors.

The data, therefore, suggest that the greater the perceived economic utility of children, the lower the educational aspirations especially for daughters, and the higher the fertility.

7.4 DESIRE FOR MORE CHILDREN

This dimension of family size desires attempts to divide the population of respondents into two groups: those who wish to have no more children than they have at the time of the interview and those who wish to increase the size of their family beyond the number of children they already have.

All currently married and fecund women were asked if they wanted to have another child sometime. The possible responses were: (1) Yes, (2) No, and (3) Undecided. If the woman or her husband had been sterilized for contraceptive reasons, a 'No' response was automatically assigned. Since only currently married self-reportedly fecund women were asked whether they wanted more children, the data pertain to this group rather than to all currently married women. The exclusion of currently married infecund women probably reduces the percentage wanting no more children, as self-reportedly infecund women tend to be older and therefore more likely to wish to stop childbearing so that the proportions wanting no more children presented in this report will tend to be slightly lower than if data were available for all currently married women.

Of the 7288 women who were currently married and believed themselves capable to have (more) children at the time of the survey, 53 per cent wanted to cease childbearing, 45 per cent wanted to have additional children, and the remaining 2 per cent were undecided.

Table 7.4 gives the proportions of women wanting no more children classified by current age, by current family size (ie number of living children), and by marital

duration. As might be expected, the underlying pattern is that a woman's desire to cease childbearing increases with age, with marital duration and with number of surviving children. The proportion has a level of 5 per cent for women under age 20. It reaches 26 per cent and 50 per cent for women at ages 20–24 and 25–29, respectively. Thus, from age 28 onwards, at least half of all women want no more children. The proportion also reaches the 50 per cent level for women with two or three living children, and rapidly jumps to 75 per cent for women with four living children. In the highest categories of family size (six to nine children) about 90 per cent of the women want no more children. The 50 per cent level is also reached at about 10 years marital duration.

When this proportion is calculated within all combinations of age and current family size (table 7.5), it is found that both effects remain important, although the latter is more so. The proportion of childless women who want no children at all is almost nil. Among women with two living children, the proportion wanting no more children is 42 per cent; this proportion exceeds the 50 per cent level among women at ages 30 or more. For family sizes above two living children, a majority of women in every age group want no additional children.

Table 7.4 Percentage of currently married, fecund women who want no more children, by age, number of living children (including any current pregnancy) and years since first marriage

Current age	Percentage who want no more children	Years since first marriage	Percentage who want no more children	Number of living children	Percentage who want no more children
< 20	5.2	< 5	15.3	0	0.5
20–24	25.7	5–9	44.7	1	7.0
25–29	50.8	10–14	63.7	2	42.2
30–34	67.8	15–19	76.5	3	63.4
35–39	75.6	20–24	77.8	4	75.3
40–44	80.9	25–29	84.1	5	80.7
45+	83.1	30+	82.2	6	89.3
				7	89.9
				8	88.8
				9+	91.7

Overall percentage: 53.1

Source: Tables 3.1.1 and 3.1.2

Table 7.5 Percentage of currently married, fecund women who want no more children, by age and number of living children

Current age	Number of living children										All
	0	1	2	3	4	5	6	7	8	9+	
< 25	0.2	4.4	29.8	54.5	64.6	65.0	(100.0)	—	—	—	19.6
25–34	0.0	7.1	48.8	63.6	75.4	76.4	86.9	90.3	96.0	(83.3)	58.8
35–44	4.3	30.5	57.8	70.9	78.1	85.0	89.4	88.8	86.9	91.9	77.7
45+	(00)	(43.8)	76.2	90.3	72.9	88.1	96.7	93.3	90.9	93.1	83.1
All	0.5	7.0	42.2	63.4	75.3	80.7	89.3	89.9	88.8	91.7	53.1

Source: Table 3.1.3

It may be concluded, therefore, that three living children, age 28 and ten years of marriage are the effective points at which a majority of women wish to limit their family size.

We turn next to the differentials in the desire to stop childbearing by socio-economic characteristics. The analysis of such differentials is complicated by the facts that family size preference is influenced mainly by current family size, and that the current parity compositions vary

Table 7.6 Percentage of currently married, fecund women who want no more children, by age and socio-economic characteristics

Socio-economic characteristics	Observed	Standardized[a]
All Egypt	53.1	—
A Wife's characteristics		
Type of residence		
Urban	63.6	63.5
Rural	45.3	44.6
Region		
Cairo	64.2	65.4
Alexandria	70.2	68.0
Lower Egypt	59.4	57.2
Upper Egypt	35.3	36.7
Type of locality		
Metropolitan	65.6	66.0
Cities: Lower Egypt	65.6	66.5
Cities: Upper Egypt	63.1	61.5
Towns: Lower Egypt	64.2	62.8
Towns: Upper Egypt	49.5	48.1
Rural: Lower Egypt	57.4	54.5
Rural: Upper Egypt	29.4	31.3
Level of education		
Illiterate: no school	49.3	46.7
Illiterate: some school	55.1	54.3
Can read and write	64.5	61.9
Primary	64.2	64.6
Secondary	55.9	70.4
University	55.1	70.8
Pattern of work		
Before and after	49.6	54.8
Worked before only	48.6	54.5
Worked after only	63.6	57.1
Never worked	53.2	59.1
B Husband's characteristics		
Level of education		
Illiterate: no school	47.8	44.6
Illiterate: some school	43.9	49.4
Can read and write	60.3	55.7
Primary	56.6	56.5
Secondary	55.0	64.3
University	59.5	70.9
Occupation		
Prof., tech. and admin.	57.7	68.0
Clerical	58.5	63.3
Sales	62.8	56.5
Farmers	48.4	42.4
Agricultural workers	39.7	34.6
Services	59.4	54.7
Manual	57.0	57.3

[a]Standardized by number of living children.
Source: Table 3.1.3

by background characteristics. This problem could, of course, be overcome by the use of standardization techniques. Table 7.6 gives the observed and standardized percentages of currently married fecund women wanting to cease childbearing by socio-economic characteristics. In the following discussion, only standardized percentages are referred to.

Certain background characteristics give rise to pronounced differentials (figure 7.1). Thus, more of the urban women (64 per cent) want no more children than the rural women (45 per cent). A clustering of the regions puts metropolitan Egypt, cities and towns in Lower Egypt and cities in Upper Egypt together. Towns in urban Upper Egypt, and rural Lower Egypt belong in an intermediate group, and rural Upper Egypt is the clear extreme in terms of high fertility preferences.

The educational differences in the observed percentage of women wanting no more children does not follow the expected pattern. For example, this percentage is higher among women who can read or with primary education than among women with secondary or university education. Standardization modifies this pattern into one in which the proportion wanting no more children increases with education: from around 50 per cent for the illiterate women, to 63 per cent for women who can read or with primary education and to 70 per cent for those with secondary or university education. A similar pattern is also observed for differences by husband's education.

The differentials in the proportion wanting no more children by pattern of work are so small that they are nearly negligible. The occupation of the husband seems, however, to be related to the desire to limit family size. Women whose husbands are engaged in agricultural occupation show the lowest percentage 'wanting no more'; those married to manual, sales, or service workers belong to an intermediate group, and those whose husbands are in the professional or clerical occupations show the highest percentage.

7.5 ADDITIONAL NUMBER OF CHILDREN WANTED

Women who answered 'Yes' to the question on desire for more children, were subsequently asked how many children they wanted. Table 7.7 shows the mean additional number of children wanted by currently married fecund women, classified by age, by marital duration and by current family size (ie number of living children). After the inclusion of women wanting no more children with the value of zero, the overall mean additional number of children wanted is 1.4 children. As the current
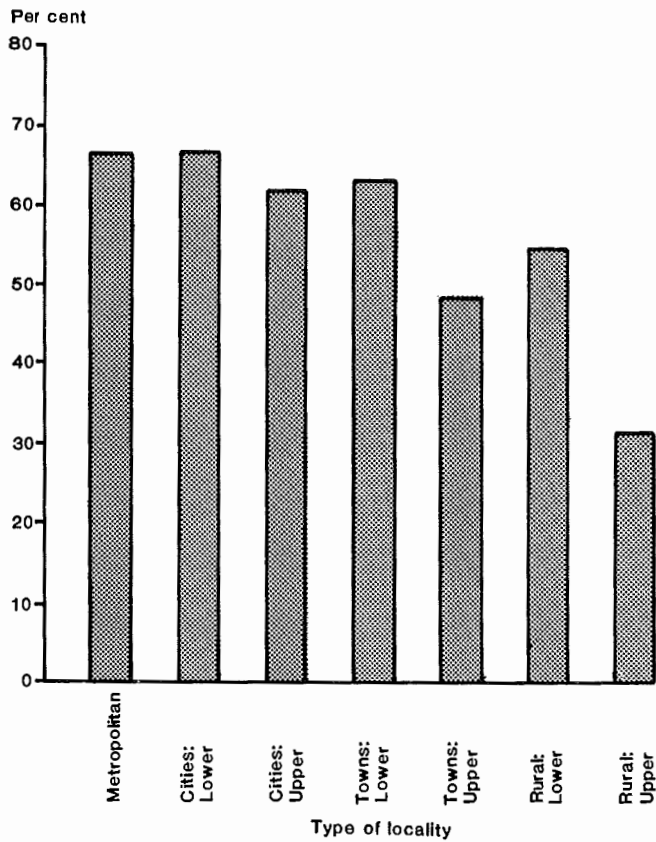
Figure 7.1(a) Percentage of currently married, fecund women who want no more children, by type of locality

Figure 7.1(b) Percentage of currently married, fecund women who want no more children, by level of education
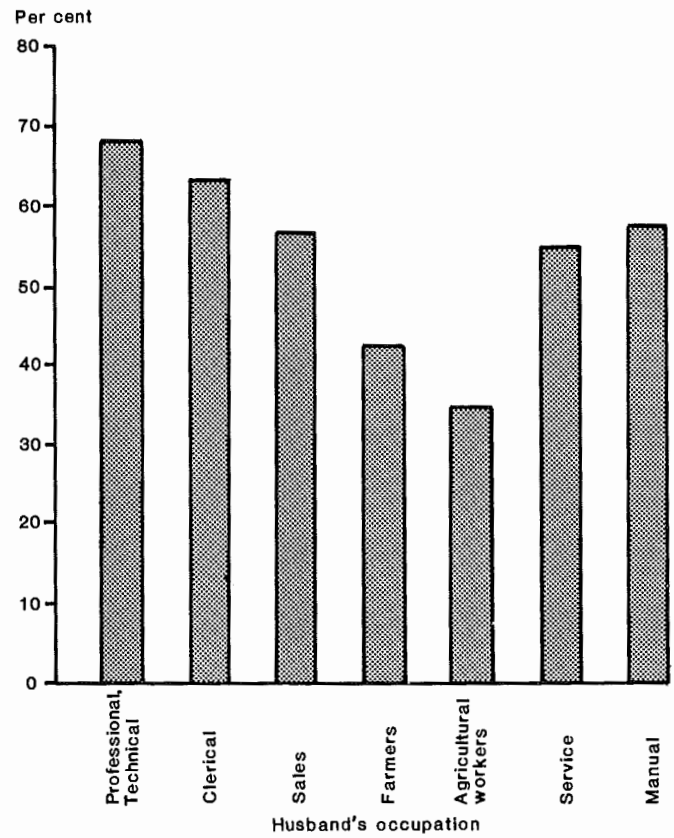
Figure 7.1(c) Percentage of currently married, fecund women who want no more children, by husband's occupation

Table 7.7 Mean additional number of children desired by currently married, fecund women, by age, years since first marriage, and number of living children (including any current pregnancy)[a]

Current age	Mean	Years since first marriage	Mean	Number of living children	Mean
<20	3.4	<5	2.5	0	3.9
20–24	2.2	5–9	1.6	1	2.5
25–29	1.3	10–14	1.1	2	1.6
30–34	0.9	15–19	0.6	3	1.0
35–39	0.6	20–24	0.7	4	0.7
40–44	0.5	25–29	0.5	5	0.6
45+	0.5	30+	0.4	6	0.2
				7	0.3
				8	0.3
				9+	0.3

Overall mean additional number of children desired 1.4

[a]Women who want no more children or who have been sterilized for contraceptive purposes have been assigned a value of zero and are included in the mean.
Source: Tables 3.2.3 and 3.2.4

age of the woman increases, the mean additional number of children wanted decreases. The same pattern is found if marital duration or current family size are considered. The table shows, however, that current family size has the greatest effect on the mean additional number of children wanted: women with no living children desire a mean of 3.9 children, while women with three living children desire a mean of one child.

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Data in table 7.8 on differentials in the mean additional number of children wanted by socio-economic characteristics indicate that this mean is highest in just those groups where the desire to cease childbearing is lowest: the rural residents, the less educated, and women whose husbands are engaged in agricultural occupations. The pro-natalist attitude in rural Upper Egypt is again evident; the mean number of additional children wanted in these areas is 3.2, compared with only 0.9 in rural Lower Egypt. Standardization does not yield different results from those shown in table 7.8.

7.6 DESIRED FAMILY SIZE

The third indicator of number preference considered in the EFS relates to the total number of children a woman would ideally like to have 'if she could choose exactly',

Table 7.8 Mean additional number of children desired by currently married, fecund women, by age and socio-economic characteristics

Socio-economic characteristics	Current age				All
	<25	25–34	35–44	45+	
All Egypt	2.6	1.1	0.6	0.5	1.4
A Wife's characteristics					
Type of residence					
Urban	1.6	0.6	0.3	0.1	0.7
Rural	3.1	1.6	0.9	0.9	1.9
Region					
Cairo	1.5	0.6	0.2	0.1	0.7
Alexandria	1.1	0.5	0.2	—	0.5
Lower Egypt	1.7	0.6	0.3	0.1	0.8
Upper Egypt	4.1	2.4	1.4	1.3	2.7
Type of locality					
Metropolitan	1.4	0.6	0.2	0.1	0.6
Cities: Lower Egypt	1.3	0.5	0.2	0.0	0.5
Cities: Upper Egypt	1.2	0.6	0.2	—	0.6
Towns: Lower Egypt	1.5	0.4	0.1	0.0	0.6
Towns: Upper Egypt	2.8	0.9	0.8	0.2	1.4
Rural: Lower Egypt	1.8	0.6	0.3	0.2	0.9
Rural: Upper Egypt	4.5	3.0	1.7	1.7	3.2
Level of education					
Illiterate: no school	3.0	1.4	0.8	0.8	1.7
Illiterate: some school	2.3	0.8	0.4	0.2	1.2
Can read and write	1.6	0.6	0.3	0.2	0.8
Primary	1.6	0.5	0.2	0.1	0.6
Secondary	1.4	0.7	0.1	—	0.8
University	1.4	0.8	0.2	—	0.8
Pattern of work					
Before and after	2.7	1.1	0.5	0.8	1.3
Worked before only	2.1	1.0	0.7	0.2	1.3
Worked after only	1.7	0.7	0.6	0.2	0.8
Never worked	2.6	1.1	0.6	0.5	1.4
B Husband's characteristics					
Level of education					
Illiterate: no school	3.2	1.5	0.9	0.9	1.8
Illiterate: some school	2.7	1.1	0.7	—	1.7
Can read and write	2.2	0.9	0.3	0.2	1.1
Primary	2.4	0.8	0.5	0.2	1.1
Secondary	1.7	0.6	0.2	0.1	0.9
University	1.8	0.7	0.1	—	0.8
Occupation					
Prof., tech. and admin.	1.9	0.7	0.2	0.1	0.9
Clerical	1.7	0.7	0.3	0.2	0.8
Sales	2.0	1.2	0.5	0.4	1.1
Farmers	3.1	1.4	0.8	0.5	1.7
Agricultural workers	3.7	1.9	1.3	1.6	2.4
Services	2.1	0.9	0.4	0.6	1.0
Manual	2.0	0.8	0.4	0.2	1.0

Source: Table 3.2.5

irrespective of whether she can accomplish it, and irrespective of the number of children she already has.

Thus, all ever-married women, irrespective of their fecundity status, were asked: 'If you could choose exactly the number of children to have in your whole life, how many children would that be?'. If the respondent enquired of the meaning of 'choose exactly the number of children', the interviewer said that it was what she liked it to mean. If she liked, she could assume that she was younger and just married, or that her or her husband's health was better etc. This question, therefore, was intended to relate to the respondent's personal wishes, rather than to a more generalized ideal or norm. Responses were probably coloured by past experiences, present fecundity and other conditions, and even the possible desire to 'say the right thing', and this should be borne in mind.

Out of 8778 ever-married women, 98.3 per cent gave numeric answers, 1.4 per cent gave non-numeric answers such as 'it depends what God gives' or 'as many as possible', while the remaining 0.3 per cent were 'not stated' cases.

The analysis presented in this section will be restricted to all currently married women who gave numeric answers.[1] Table 7.9 gives the total number of children desired by currently married women classified by current age, by marital duration, and by current family size.

The overall mean number of children desired is 4.1. This mean steadily rises with marital duration and with current family size. Women married for less than five years desire to have 3.6 children, those with 5–9, 10–14

or 15–19 years' marital duration desire to have about 4.1 children, while those with 20 or more years of marriage duration desire about 4.8. The table shows, however, that current family size has the greatest effect on desired family size. Women with four or less children desire a larger family than they actually have. But beginning with a family size of five, women desire, on the average, a smaller family than they have. The transition point (5 children) is greater than that observed for the question on desire to stop childbearing (3 children) mainly because of the difference between the questions and the possible pressure to rationalize existing family size.

The figures in table 7.10, however, suggest that the modal or most popular family size desired is 2 children, about 28 per cent of all the currently married women giving this as their ideal. This is followed by the desire for 3 and 4 children by 23 and 20 per cent of the women, respectively. The table shows that out of ten women, five desire to have 2 or 3 children; two desire to have 4 children, and three desire to have 5 or more children.

The figures also show that the proportion of women who desire to have between 2 and 4 children has increased over the last three decades: from 59 per cent for women married in the 1950s, to 71 per cent for those married in the 1960s, and to 75 and 80 per cent for women married during 1970–4 and 1975–9, respectively. In part, this finding might reflect a decline in family size preferences on the part of the younger cohorts of women; but it might also reflect the influence of achieved fertility on desired family size. Women with large families may rationalize their fertility performance by stating the number of children they have as their preference.

To investigate this latter point, figures are given in table 7.11 showing whether desired family size exceeds, equals, or is less than actual family size. The table shows that only one in five currently married women gave a desired family size that was equal to her actual although this proportion varies considerably with the number of living children the woman already has, and it reaches a maximum of 35 per cent for women with four living children. The proportion who state a desired number in excess of their actual children shows a rapid decline with increases in the number of living children, whereas the proportion who state a desired number which is less than the number they already have increases rapidly with actual family size. The great majority with two or fewer living children state a preference for a number larger than the number they have, and the majority with five or more children state a preference for a number below their current family size.

The proportion of women for whom the desired and actual number of children coincide, of course, cannot be

Table 7.9 Mean total number of children desired by all currently married women, by current age, marital duration, and number of living children (including any current pregnancy)

Current age	Mean	Years since first marriage	Mean	Number of living children	Mean
<20	4.3	<5	3.6	0	3.8
20–24	3.9	5–9	4.0	1	3.5
25–29	3.7	10–14	4.1	2	3.8
30–34	4.1	15–19	4.2	3	3.9
35–39	4.4	20–24	4.7	4	4.2
40–44	4.5	25–29	4.8	5	4.6
45+	4.6	30+	4.8	6	4.7
				7	5.2
				8	5.4
				9+	5.7

Overall mean total number of children desired (by currently married women) 4.1

Tables 3.3.4A and 3.3.5A

[1] Of 8012 currently married women, 98.4 per cent gave numeric answers.

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Table 7.10 Per cent distribution of currently married women according to total number of children desired by years since first marriage

Years since first marriage	Total number of children desired										Mean	Number of women
	0	1	2	3	4	5	6	7	8	9+		
<5	0.2	2.1	40.0	25.4	14.2	6.1	4.1	1.3	0.9	5.7	3.5	1809
5–9	0.1	1.3	28.8	26.5	19.6	8.7	5.1	2.4	1.5	6.0	3.9	1553
10–14	0.1	1.4	26.1	25.0	21.6	8.1	5.8	3.2	1.9	6.8	4.1	1277
15–19	0.0	1.8	25.1	21.0	23.4	7.9	7.4	3.6	3.0	6.9	4.2	1195
20–24	0.1	1.6	20.1	18.8	20.3	9.9	10.3	5.0	4.1	9.9	4.7	943
25–29	0.1	2.1	20.3	18.5	19.6	8.8	8.8	5.3	4.5	11.9	4.8	704
30+	0.0	1.3	17.8	22.1	22.1	8.0	6.5	7.0	4.0	11.3	4.8	399
	0.1	1.7	28.0	23.3	19.5	8.0	6.4	3.2	2.4	7.5	4.1	7880

Source: Table 3.3.2A

Table 7.11 Comparison between desired and actual number of children of currently married women, by number of living children

Number of living children	Desired exceeds actual number	Desired equals actual number	Desired less than actual number	Total	Mean desired no. of children	Number of women
0	99.8	0.2	—	100	3.7	1005
1	96.7	3.2	0.1	100	3.6	1173
2	63.9	34.3	1.8	100	3.7	1269
3	42.6	33.3	24.1	100	3.9	1227
4	26.5	34.6	38.9	100	4.3	1057
5	22.6	19.7	57.5	100	4.6	856
6	14.2	22.7	63.0	100	4.8	612
7	17.6	16.5	65.9	100	5.2	357
8	12.8	17.9	69.5	100	5.3	196
9+	13.6	7.3	79.1	100	5.7	128
All	52.5	21.1	26.4	100	4.1	7880

Source: Derived from Table 3.3.3A

considered equivalent to the proportion of women who rationalize their actual family size. Further, although the overall proportion who state a desired family size less than their actual size is only 26 per cent, the proportions become appreciable among women with large numbers of children. Thus, 58 per cent of women with five living children, 63 per cent of those with six children, 66 per cent of those with seven and 70 per cent of those with eight children fall in this category. The possibility exists, of course, that these results were obtained because this group of respondents thought that interviewers wanted them to state lower desired numbers than they actually wanted. Despite these uncertainties, the comparisons of desired and actual number of children indicate that the number of women who are rationalizing their current fertility, by stating their current number of children as desired, or who wish to have large number of children consititute only a small minority of all respondents.

The absence of a strong rationalization effect for Egyptian women suggests that the increase in the proportion of women who desire to have between two and four children over the last three decades is due to a genuine decline in the desired family size.

We now turn our attention to investigate differentials in the preference for family size. Table 7.12 shows the mean number of children desired according to socio-economic characteristics of currently married women. The discussion will focus on the observed means because it was found that standardization of the mean desired family size by the number of living children did not alter the order of the observed means or the magnitude of differences within the categories of any given socio-economic variable.

As may be seen, urban residents prefer a smaller family size than the village residents: the difference is as much as 1.6 children. The classification of regions by type of residence shows a clear clustering of women with those in Cairo, Alexandria, cities in both Lower and Upper Egypt, and towns in Lower Egypt desiring a number of children of slightly over 3. Desired family size increases to 4 for rural Lower Egypt, 4.5 for towns in Upper Egypt and jumps to 7.1 for rural Upper Egypt (figure 7.2).

The figures also show that the better educated tend to prefer a smaller family size than the less educated.

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Table 7.12 Mean total number of children desired by currently married women, by age and socio-economic characteristics

Socio-economic characteristics	Current age				All	Number of women
	< 25	25–34	35–44	45 +		
All Egypt	4.0	3.9	4.5	4.6	4.1	7883
A Wife's characteristics						
Type of residence						
Urban	3.0	3.0	3.5	3.9	3.2	3380
Rural	4.6	4.6	5.3	5.3	4.8	4503
Region						
Cairo	2.8	2.9	3.2	3.4	3.0	1438
Alexandria	2.6	2.7	3.5	3.5	3.0	431
Lower Egypt	3.3	3.5	4.1	4.3	3.7	3521
Upper Egypt	5.5	5.4	6.0	6.0	5.6	2493
Type of residence						
Metropolitan	2.7	2.9	3.3	3.5	3.0	1869
Cities: Lower Egypt	2.7	2.7	3.3	4.1	3.0	499
Cities: Upper Egypt	2.9	3.0	3.6	(4.2)	3.2	219
Towns: Lower Egypt	3.3	3.0	3.5	3.6	3.3	441
Towns: Upper Egypt	4.0	4.4	5.0	5.6	4.5	355
Rural: Lower Egypt	3.4	3.8	4.4	4.5	4.0	2581
Rural: Upper Egypt	5.9	5.9	6.5	6.2	6.1	1919
Level of education						
Illiterate: no school	4.4	4.4	4.9	5.0	4.6	4551
Illiterate: some school	3.7	3.8	4.4	4.5	4.0	1482
Can read and write	4.2	3.2	3.8	4.3	3.7	780
Primary	2.9	2.9	3.0	3.4	3.0	379
Secondary	2.5	2.5	2.5	2.8	2.5	476
University	2.4	2.5	2.7	(3.0)	2.5	215
Pattern of work						
Before and after	4.2	3.5	3.8	4.3	3.8	914
Worked before only	3.5	3.6	4.3	3.4	3.7	455
Worked after only	3.4	3.4	4.5	4.4	3.8	520
Never worked	4.1	4.0	4.6	4.7	4.2	5994
B Husband's characteristics						
Level of education						
Illiterate: no school	4.5	4.7	5.2	5.2	4.8	3278
Illiterate: some school	4.1	3.9	4.6	5.1	4.2	512
Can read and write	3.8	3.7	4.2	4.4	3.9	2046
Primary	3.7	3.5	3.7	3.6	3.6	683
Secondary	3.4	2.9	3.0	3.2	3.1	823
University	3.0	2.6	2.9	3.1	2.8	541
Occupation						
Prof., tech. and admin.	3.2	2.8	3.0	3.6	3.0	826
Clerical	3.0	2.9	3.4	3.5	3.1	423
Sales	3.8	3.6	4.2	4.6	4.0	485
Farmers	4.5	5.0	5.3	5.5	5.0	1635
Agricultural workers	5.2	5.0	5.4	4.9	5.2	1307
Services	3.5	3.7	4.0	5.1	3.9	918
Manual	3.6	3.4	4.1	4.0	3.7	2282

Source: Table 3.3.7

Women who have worked also desire a smaller number of children than those who never worked.

Desired family size also seems to be associated with husband's occupation. Three distinct levels of preference are shown by table 7.12. The desired number of children is highest among women whose husbands are engaged in agricultural occupations (5.1 children), and lowest among women whose husbands are in the first two categories of professional and clerical occupations (3

children), while women whose husbands are in the sales, services and manual occupations have an intermediate preference (3.9 children).

However, it should be pointed out that because certain socio-economic characteristics are interrelated, straight-forward interpretation of these differentials is complicated. For example, the distribution of women by rural/urban residence and level of education could explain a good deal of the variation found. Thus, the
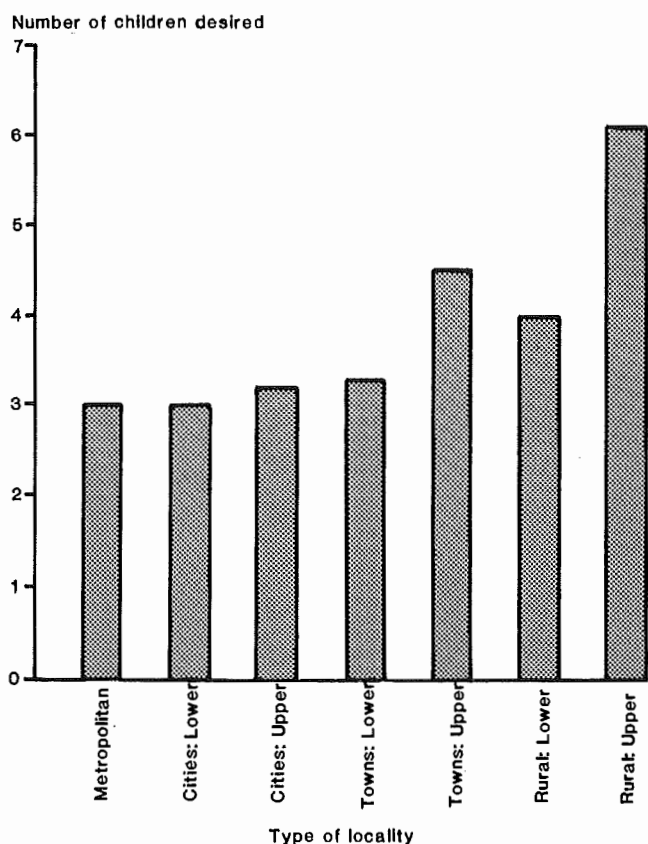
Figure 7.2(a) Mean number of children desired by currently married women according to type of locality
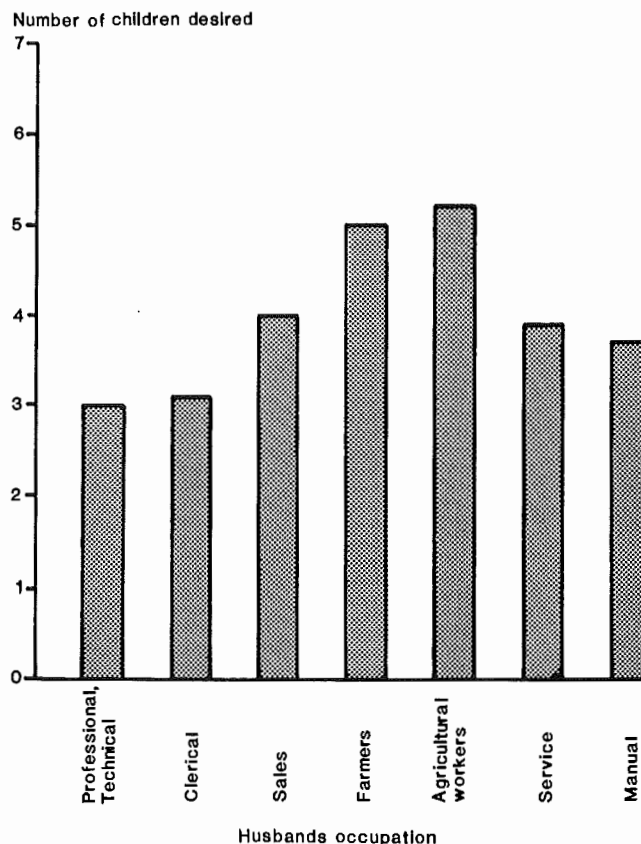
Figure 7.2(c) Mean number of children desired by currently married women according to husband's occupation
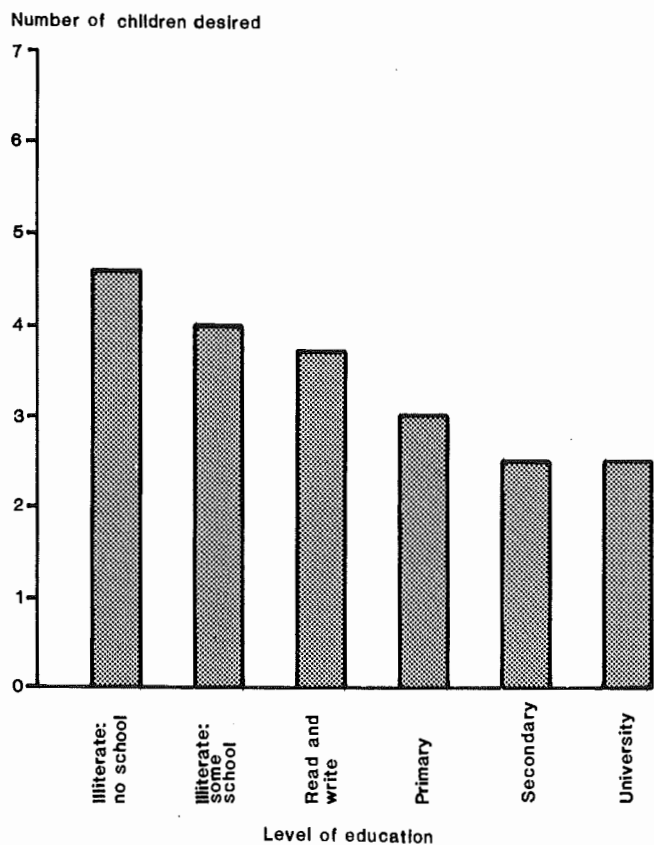
Figure 7.2(b) Mean number of children desired by currently married women according to level of education

majority of women residing in rural areas are also the women with no education, the women who never worked in the modern sector and the women whose husbands are engaged in agricultural occupations. Thus, the striking clustering of regions could be explained in part as due to differences in education attainment between women in different regions, and in part as due to differences in the proportion of urban population.

7.7 CONSISTENCY OF NUMBER PREFERENCE INDICATORS

In the preceding sections, three aspects of preference for number of children have been examined separately. In table 7.13, figures on these three indicators are assembled for an internal comparison. Since all currently married fecund women were asked the fertility preference questions, it is of interest to see how far the responses to various questions are internally consistent.

The figures in panels A and B of table 7.13 are comparable since they indicate the proportion of women who feel that their preferred family size has been achieved. As may be seen, the figures in panel A are in close agreement with those in panel B for family sizes three to eight, reflecting a high degree of mutual consistency.

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Table 7.13 Consistencies between fertility preference indicators for currently married, fecund women, according to number of living children

Variable	Number of living children										All
	0	1	2	3	4	5	6	7	8	9+	
A Percentage who want no more children	0.5	7.0	42.2	63.4	75.3	80.7	89.3	89.9	88.8	91.7	53.1
B Percentage whose current family size is greater than or equal to their desired family size	0.2	3.3	36.1	57.4	73.5	77.2	85.7	82.4	87.4	86.4	47.5
C Mean desired family size	3.7	3.6	3.7	3.9	4.3	4.6	4.8	5.2	5.3	5.7	4.1
D Number of living children plus mean number of additional children wanted	3.9	3.5	3.6	4.0	4.7	5.6	6.2	7.3	8.3	9.3	4.6

The comparison of means in panels C and D (mean desired family size versus number of living children plus mean additional number of children wanted) shows a different pattern. Up to and including family size four, means in the two panels are very close; but among women with larger families the means in panel C are lower than those in panel D. This pattern may be explained by the fact that the means in panel D cannot, by definition, be lower than actual family size, whereas the means in panel C can be lower. It should also be recalled that the majority of women with five or more children stated a preference for a number of children below their current family size. Thus, it can be safely concluded that there is a high degree of internal consistency in the responses to the various questions of preference for number of children.

7.8 GENDER PREFERENCES

The dimensions of family size desires considered in the preceding sections relate essentially to preferences for number of children. Number preferences presumably operate within a complex of other circumstances and preferences. Among the many factors contributing to the family size decision process is the possible complicating effect of sex composition of children. In many societies, the sex composition of living children is an important consideration in the childbearing process. Broadly speaking, only three types of gender preference are common. The first is for a certain minimum number of boys, the second is for a balanced sex composition of boys and girls, and the third is a combination of balance and male preference.

Four aspects of gender preference among Egyptian women may be indicated using the data collected in the EFS. The first three aspects relate to the possible effects of the sex composition of the current family on (1) the proportion of women who want no more children; (2) the additional number of children wanted; and (3) the desired family size. The fourth aspect relates to the preferred sex of the next child as explicitly stated by those women who wanted more children.

The analysis presented in this section is restricted to currently married fecund non-pregnant women. Women who are currently pregnant are not included in the analysis in this section because of the difficulty of describing current sex composition. Since the sex of the unborn child is not known, the inclusion of pregnant women would cause the current family size to differ from the number of sons plus the number of daughters. This anomaly is avoided by confining the analysis to non-pregnant women.

Table 7.14 gives a summary of gender preference indicators according to the sex composition of the current family. As may be seen, out of 6058 currently married fecund non-pregnant women, 10 per cent have no children, 16 per cent have only boys, and 12 per cent have only girls. The remaining 61 per cent have both boys and girls, the percentage being made up of 18 per cent with equal numbers of boys and girls, 24 per cent with more boys than girls and 20 per cent with fewer boys than girls.

Women with boys only or girls only represent 'extremely imbalanced' sex composition, women with unequal numbers of boys and girls represent 'imbalanced' sex composition, and women with equal numbers of boys and girls represent 'balanced' sex composition. The figures in table 7.14 suggest that the sex composition is 'extremely imbalanced' for 29 per cent of the women, 'imbalanced' for 44 per cent, and 'balanced' for 18 per

cent, while the remaining 10 per cent of women have no living children. It should, however, be noted that a perfect balance can be found only amongst women who have an even number of living children.

Table 7.14 also suggests that the most common type of sex preference is for a combination of a 'balanced' sex composition of boys and girls and 'male preference'. For example, women who have equal numbers of boys and girls and who want to have another child, prefer their next child to be a boy. Further, women with no living children, with girls only, or with fewer boys than girls prefer, on average, their next child to be a boy. A preference for the next child to be a girl is found only among women with boys only.

A noteworthy finding here is that a large proportion of women with no living children (49 per cent) or with a balanced sex composition (53 per cent) are actually indifferent, and would be equally happy with either a boy or a girl. This suggests that Egyptian women consider it important to have at least one child of each sex; beyond that, there is a preference for sons, but a large proportion would be content with either sex if the number of sons was equal to or greater than the number of daughters.

The question remains whether these gender preferences are strong enough to modify the desire for additional children and the preferences for specific family sizes. Table 7.15 presents indicators of gender preferences within all possible combinations of living sons and daughters according to the current family size.

Of women with two living children, 45 per cent want no more if they have one boy and one girl; if they only have boys, then 42 per cent want to stop; if only girls, 34 per cent. Of women with three living children, 38 per cent want to stop childbearing if they have only girls as compared with 63 per cent if they have only sons. Among women with two sons and a daughter, 70 per cent want to cease childbearing; if a boy and two girls, about 63 per cent. In general, women with at least one son are more likely to limit their family size than women with no living son, and those with two sons more likely than those with one son. Women with sons only are more likely to stop childbearing than women with daughters only. Among the majority of women who have both boys and girls, the desire to cease childbearing for those with more boys than girls is higher than that for women with more girls than boys.

This suggests that the number of surviving sons does have a significant impact on the desire for additional children when the sex composition of the children is 'extremely imbalanced' or 'imbalanced' in favour of girls. Again, the tendency is shown to be for a combination of balance and son preference.

The data on the preferred sex of the next child among women who want to have more children suggest the following:

- when there are no children, the preference is for a boy;

- when there are more girls than boys the dominant preference is for a boy;

- when there are no boys and one girl, the desire for a son is much greater than the corresponding desire for a daughter when there is one boy and no girl.

Thus, the optimal family building pattern suggested by the data is that:

the first child should be a son;
the second child a daughter;
the third child a son; and
the fourth child a son or a daughter.

Table 7.14 Sex preference indicators for currently married, fecund, non-pregnant women, according to sex composition of current family

Current sex composition	Currently married women		Percentage of women wanting no more children	Mean additional number of children desired	Mean desired family size	Percentage preferring next child to be		
	Number	Per cent				Boy	Girl	Either
No living children	615	10.2	0.5	3.85	3.83	37.3	14.2	48.5
All boys	994	16.4	31.9	1.74	3.62	13.8	60.2	26.0
All girls	750	12.4	21.4	1.90	3.67	75.0	2.4	22.6
Mixed								
Total	3699	61.1	75.3	0.64	4.36	44.7	8.9	46.4
No. of boys = no. of girls	1069	17.6	65.3	0.92	4.13	39.3	7.5	53.2
No. of boys > no. of girls	1434	23.7	83.3	0.30	4.49	31.1	20.1	48.8
No. of boys < no. of girls	1196	19.7	74.7	0.56	4.40	62.2	1.9	35.9
Total	6058	100.0	53.9	1.30	4.11	42.0	21.3	36.7

Source: Tables 3.4.1; 3.4.3A; 3.4.3B; 3.4.5; 3.4.6A

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Table 7.15 Sex preference indicators for currently married, fecund, non-pregnant women, according to number of living children and sex composition

Number of living children	Sex composition		Percentage of women wanting no more children	Mean additional number of children desired	Mean desired family size	Percentage preferring next child to be		
	No. boys	No. girls				Boy	Girl	Either
0	0	0	0.5	3.9	3.8	37.3	14.2	48.5
1	0	1	7.5	2.3	3.4	70.1	3.3	26.6
	1	0	8.1	2.5	3.5	14.1	55.7	30.2
2	0	2	34.4	1.4	3.4	86.0	1.7	12.3
	1	1	45.1	1.5	3.8	38.6	8.2	53.2
	2	0	41.9	1.3	3.7	14.6	68.2	17.2
3	0	3	38.3	1.5	4.5	77.2	0.0	22.8
	1	2	63.1	0.8	3.8	63.7	2.7	33.6
	2	1	70.2	0.8	4.0	28.7	17.6	53.7
	3	0	62.5	0.6	3.3	8.5	74.5	17.0
4	0	4	47.4	1.4	4.4	(84.2)	(0.0)	15.8
	1	3	62.4	1.0	4.7	60.9	2.9	36.2
	2	2	82.3	0.5	4.0	39.2	3.9	56.9
	3	1	82.9	0.5	4.0	30.6	30.6	38.8
	4	0	78.9	0.6	4.0	(10.0)	(60.0)	30.0
5	0	5+	46.4	1.3	4.9	(86.7)	(0.0)	13.3
	1	4	70.7	0.4	4.3	76.2	0.0	23.8
	2	3	79.9	0.5	4.6	48.5	0.0	51.5
	3	2	87.4	0.6	4.5	32.0	20.0	48.0
	4	1	87.5	0.3	4.6	(38.5)	(15.4)	46.1
	5+	0	86.1	0.6	5.0	(20.0)	(60.0)	20.0

It is also clear from the figures in table 7.15 that a relatively high proportion of women with a balanced sex composition or with more boys than girls are indifferent about the sex of their next child, and it seems that these women have a pure preference for number only and that they would be relatively satisfied with either of the two sex compositions at the next higher parity. These findings are generally consistent with those based on the figures in table 7.14, but a clear preference for a combination of 'balance' and 'son preference' is now seen at various parities.

7.9 SUMMARY

In this chapter, various dimensions of family size desires have been examined. Data on the perceived benefits and costs of children show a definite inverse association between socio-economic status of the mother and the perceived economic utility of children. Further, the greater the perceived economic utility of children, the lower the educational aspirations especially for daughters, and the higher the fertility.

The data on attitudinal dimensions of childbearing show that 53 per cent of currently married fecund women wanted to cease childbearing, 45 per cent wanted to have (more) children, and the remaining 2 per cent were undecided. The desire to stop childbearing increases with age, with marital duration and with number of surviving children. The data indicate that three living children, age 28 and ten years of marriage are the effective points at which more than 50 per cent of women wish to limit their family size.

The overall mean additional number of children wanted, by women who wish to continue childbearing, is 1.4 children.

The overall desired family size is 4.1. Out of ten women, five desire to have 2 or 3 children, two desire to have 4 children, and three desire to have 5 or more children. The great majority of women with two or more living children stated a preference for a number larger than the number they have, while the majority with five or more children stated a preference for a number below their current family size. The proportion of women who want to have only between 2 and 4 children has increased over the last three decades from 59 per cent for women married in the 1950s, to 71 per cent for those married in the 1960s, and to 75 and 80 per cent for women married during 1970–4 and 1975–9, respectively. The absence of a strong rationalization effect for Egyptian women suggests that this trend is due to a genuine decline in the desired family size.

The most common type of sex preference is for a combination of a 'balanced' sex composition of boys and

girls and 'son preference'. In general, Egyptian women consider it important to have at least one child of each sex; beyond that there is a preference for sons, but a large proportion would be content with either sex if the number of sons was equal to or greater than the number of daughters.

The results also reveal substantial socio-economic differentials in the determinants of desired family size. The general pattern is one of a definite inverse association between socio-economic status of the women, and achieved fertility, economic utility of children and desired family size.

CHAPTER 8

FAMILY PLANNING

8.1 INTRODUCTION

The preceding analysis indicates that fertility transition in Egypt is strongly influenced by social and economic development — including the reductions in child mortality and the rise in age at marriage — which, through a variety of mechanisms, reduces the family size that couples desire. Individual choices about family size are, however, made effective through fertility regulation. The remainder of this volume, therefore, will focus on an investigation of the extent to which family planning has contributed to the current pattern of variation in fertility.

The Egyptian Fertility Survey collected a detailed set of information that permits a comprehensive assessment of various dimensions of fertility regulation, and which should also be useful for evaluation of the impact of the family planning programme in Egypt. This chapter will by no means fully exploit this set of information. Further specialized reports will explore the topic in greater depth.

The objective of this chapter is to determine levels of knowledge and use of family planning, and to review demographic and socio-economic differentials in these variables.

8.2 KNOWLEDGE OF FAMILY PLANNING

Knowledge of contraceptive methods is a necessary but not sufficient condition for use. Knowledge is defined here as having heard of any method, or any specific method, to delay or avoid pregnancy. No reference is made to knowledge of how to use a method or where to obtain it.

In the EFS, as in most of the WFS surveys, knowledge of contraception was ascertained at two levels. The first, referred to as 'spontaneous' knowledge, was obtained by asking a direct question:

'As you know, there are various ways that a couple can delay the next pregnancy or avoid pregnancy. Do you know of, or have you heard of, any of these ways or methods?'

If the woman answered affirmatively, she was then asked to name the method(s) she knew of. Each method not mentioned spontaneously was then described briefly and the respondent was then asked 'Have you heard of this method?'. However, a respondent is classified as having heard of a method regardless of whether she acknowledges this spontaneously or only after some probing.

Knowledge data were obtained in this fashion for the following ten methods: pill, IUD, other female scientific methods (foam tablets, creams, jelly), douche, condom, rhythm, withdrawal, abstinence, and male and female sterilization. In addition to these methods, provision was made in the questionnaire to record any other methods named by respondents.

These methods were classified into two major types. The first, referred to as 'efficient' or 'modern', include the pill, IUD, condom, female scientific methods, injection, and sterilization. The remainder, douche, rhythm, withdrawal, abstinence, and other folk methods were termed 'inefficient' or 'traditional' methods.

Before undertaking a review of the level of, and differentials in, contraceptive knowledge, it should be pointed out that not all contraceptive methods are effectively promoted in Egypt. Since its inception in 1965, the family planning programme has emphasized the pill and IUD. It is only very recently that other modern methods have received some attention in the programme.

Table 8.1 shows the percentage of ever-married women who have heard of any method of contraception, classified by current age and number of living children. The overall level of knowledge is high; 90 per cent of all ever-married women know about at least one contraceptive method.

The pattern of knowledge by age shows narrow variation. For example, the percentage rises from 85 per cent for women under 25 to 92 for women aged 25–34, and then declines with age, until it reaches 89 per cent among women aged 45–49.

The percentages of women who have heard of specific contraceptive methods within two broad categories of number of living children (less than four and four or more) are shown in table 8.2. The pill is by far the most widely recognized family planning method in Egypt, with about 89 per cent of the ever-married women having

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Table 8.1 Percentage of ever-married women who have ever heard of any contraceptive method, by current age and number of living children

Age	Number of living children								All
	0	1	2	3	4	5	6	7+	
<25	78.4	86.1	89.8	91.9	96.4	(90.0)	(100.0)	—	85.3
25–34	88.0	87.3	91.3	94.8	94.8	91.8	96.0	95.3	92.4
35–44	85.5	89.7	86.4	88.8	88.6	91.6	93.6	93.3	90.5
45+	83.7	80.4	90.5	78.9	90.8	88.9	88.5	94.4	88.9
All	81.4	86.6	89.9	91.9	92.4	91.3	93.3	93.8	89.7

Source: Table 4.2.2

Table 8.2 Percentage of ever-married women who have heard of specific contraceptive methods, by number of living children

Living children	Modern methods							Traditional methods				
	Pill	IUD	Condom	Injection	Male ster.	Female ster.	Female scientific	Rhythm	Withdrawal	Douche	Abstinence	Others
<4	87.4	66.7	24.5	14.2	6.6	40.7	13.4	15.7	10.6	8.9	9.6	2.9
4+	92.4	73.8	28.1	17.5	5.2	45.1	14.4	11.5	8.5	6.4	9.4	5.3
All	89.4	69.6	25.9	15.6	6.0	42.5	13.8	14.0	9.8	7.9	9.5	3.9

Source: Table 4.2.1A

heard of this method. The next two best known methods are the IUD (70 per cent) and female sterilization (43 per cent).

The condom, injection and other female scientific methods are known only by 26, 16 and 14 per cent, respectively. Unlike female sterilization, male sterilization is least known, with only 6 per cent of the respondents having heard of the method.

It is noteworthy that the most modern methods dominate the list, showing that knowledge is relatively recent. It is also notable that the rhythm and withdrawal methods are recognized by few women, 14 and 10 per cent, respectively. For the most part, this pattern reflects emphases of the family planning programme.

There are very narrow socio-economic differentials in the level of awareness of contraception as may be seen from table 8.3. For the most part, these differentials are not sufficiently marked to be of much practical importance. For instance, even among women with no schooling, about 85 per cent had heard of at least one method. The only significant exception, however, is rural Upper Egypt, with the level of knowledge amounting to only 68 per cent.

8.3 EVER-USE OF CONTRACEPTION

Alongside the questions on knowledge of specific methods, the individual questionnaire included a sequence of questions on ever-use of contraception. For each method the respondent had ever heard of, she was asked: 'Have you ever used this method?' or some variant of this question.

Table 8.4 gives the percentage of ever-married women who have ever used any contraceptive method classified by age and number of living children. Overall, 40 per cent of the women stated ever-use of any method, including both efficient and inefficient methods. Passing over the early ages and small families, the pattern of ever-use (like that of knowledge) shows little variation. Almost half of all ever-married women between ages 25 and 44, or with at least three living children report ever-use of some method.

In contrast to knowledge, ever-use of contraception varies substantially between socio-economic groups of the population. The proportion of ever-married women who had ever used contraception according to socio-economic variables within four broad age groups, and

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Table 8.3 Percentage of ever-married women who have ever heard of any contraceptive method, including sterilization, by current age and socio-economic characteristics

Socio-economic characteristics	Current age				All	Age standardized
	< 25	25–34	35–44	45 +		
All Egypt	85.3	92.4	90.5	88.9	89.7	—
A Wife's characteristics						
Type of residence						
Urban	95.7	98.1	97.5	97.0	97.3	97.2
Rural	84.1	87.5	85.0	82.3	84.1	84.4
Region						
Cairo	97.1	98.6	98.9	97.6	98.3	98.2
Alexandria	98.6	100.0	99.3	100.0	99.6	99.4
Lower Egypt	95.8	97.4	96.7	94.6	96.5	96.5
Upper Egypt	67.4	78.7	75.1	73.9	73.8	74.3
Type of locality						
Metropolitan	97.4	98.9	99.0	98.2	98.6	98.5
Cities: Lower Egypt	95.3	98.7	95.5	92.6	96.5	96.3
Cities: Upper Egypt	100.0	99.0	98.4	100.0	99.1	99.2
Towns: Lower Egypt	95.0	98.9	98.2	100.0	97.9	88.5
Towns: Upper Egypt	89.3	90.4	89.9	90.7	90.0	90.0
Rural: Lower Egypt	96.0	96.8	96.8	93.9	96.3	96.3
Rural: Upper Egypt	61.8	73.5	70.2	67.6	68.3	69.0
Level of education						
Illiterate: no school	79.2	87.9	86.2	83.3	84.7	84.7
Illiterate: some school	90.9	96.4	95.4	96.3	94.5	94.7
Can read and write	97.8	97.7	99.2	96.5	98.0	98.0
Primary	95.8	99.4	98.1	100.0	98.3	98.2
Secondary	99.2	100.0	100.0	100.0	99.8	99.8
University	100.0	99.3	100.0	(100.0)	99.6	99.7
Pattern of work						
Before and after	87.4	95.9	93.5	86.1	92.8	92.8
Worked before only	91.7	92.4	93.4	100.0	93.0	93.3
Worked after only	91.2	93.2	88.9	90.1	91.1	91.2
Never worked	84.2	91.6	90.1	88.5	88.8	89.0
B Husband's characteristics						
Level of education						
Illiterate: no school	77.1	85.3	84.1	81.9	82.5	82.5
Illiterate: some school	86.5	94.8	91.3	97.1	90.8	91.9
Can read and write	89.7	96.0	95.1	93.6	93.9	93.9
Primary	91.4	96.8	97.5	100.0	96.0	95.9
Secondary	94.4	100.0	98.7	100.0	98.1	98.2
University	98.0	98.3	99.2	100.0	98.6	98.6
Occupation						
Prof., tech. and admin.	96.5	98.8	99.0	94.7	98.0	97.8
Clerical	95.7	97.6	97.2	97.8	97.2	97.0
Sales	85.7	91.4	94.0	88.5	90.7	90.3
Farmers	83.9	87.8	87.2	83.3	86.0	86.2
Agricultural workers	71.1	81.4	77.6	78.8	77.0	77.4
Services	90.8	95.2	95.4	94.5	94.3	94.0
Manual	89.3	96.1	93.8	93.2	93.4	93.4

Source: Table 4.2.2

for all ages, are given in table 8.5. The age-standardized proportions are also shown in the last column of the table for comparison. As may be seen, standardization does not alter the observed proportions in any significant way.

Type of locality, education, and husband's occupation emerge as the characteristics most associated with ever-use of contraception (figure 8.1). Women with no school-ing are much less likely to have tried any method than those who have attended school.

Rural-urban and regional differences are, however, more pronounced than the other differentials. Women living in Cairo, Alexandria, and the cities and towns of Lower Egypt report levels of ever-use ranging between 63 per cent and 70 per cent. Next come the women residing in the cities of Upper Egypt; 55 per cent. Rural Lower

Table 8.4 Percentage of ever-married women who have ever used any contraceptive method, by current age and number of living children

	Current age				Total
	<25	25–34	35–44	45+	
Percentage ever used	18.7	47.3	49.0	42.6	39.8

	Number of living children										
	0	1	2	3	4	5	6	7	8	9+	Total
Percentage ever used	3.5	24.5	41.0	46.9	50.5	54.2	57.4	54.5	57.1	61.4	39.8

Source: Table 4.3.2
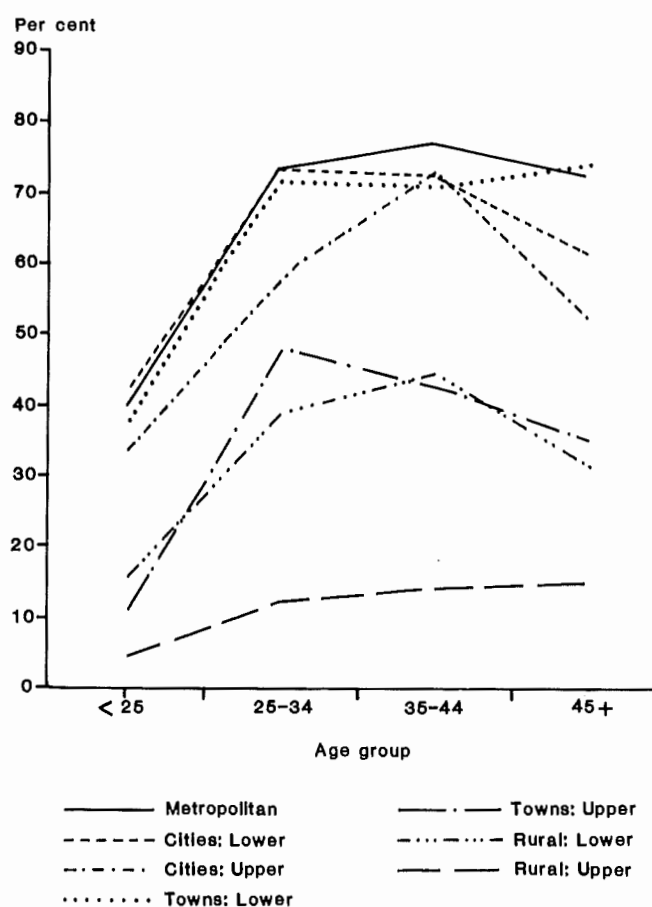
Figure 8.1(a) Percentage of ever-married women who have ever used any contraceptive method, by age and type of locality

Figure 8.1(b) Percentage of ever-married women who have ever used any contraceptive method, by age and level of education

Egypt and the towns in Upper Egypt report similar levels of ever-use; 33 and 30 per cent, respectively. Rural Upper Egypt shows the extremely low level of ever-use of only 11 per cent.

This pattern of differentials suggests that most of the regional variation in 'current' fertility can be accounted

for by variations in both age at marriage and contraceptive use.

8.4 CURRENT USE OF CONTRACEPTION

In the EFS individual questionnaire, all women who had

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Table 8.5 Percentage of ever-married women who have ever used any contraceptive method, by current age and socio-economic characteristics

Socio-economic characteristics	Current age				All	Age standardized
	< 25	25–34	35–44	45+		
All Egypt	18.7	47.3	49.0	42.6	39.8	—
A Wife's characteristics						
Type of residence						
Urban	35.2	69.6	72.1	65.7	62.8	61.0
Rural	10.3	28.1	30.9	23.9	23.1	23.8
Region						
Cairo	38.3	70.9	76.7	73.1	66.5	64.3
Alexandria	47.8	80.3	77.2	69.5	73.3	69.9
Lower Egypt	20.8	48.4	51.5	41.5	41.2	41.4
Upper Egypt	6.6	22.2	22.8	20.9	17.5	18.2
Type of locality						
Metropolitan	40.1	73.2	76.8	72.1	68.0	65.5
Cities: Lower Egypt	37.4	73.6	72.4	61.1	64.9	62.6
Cities: Upper Egypt	33.3	58.0	73.0	52.0	56.7	55.1
Towns: Lower Egypt	42.1	71.4	70.9	73.7	64.1	63.9
Towns: Upper Egypt	10.7	47.8	42.4	34.9	34.4	29.8
Rural: Lower Egypt	15.4	38.8	44.2	31.2	32.9	33.4
Rural: Upper Egypt	4.3	12.0	14.1	14.6	10.4	10.8
Level of education						
Illiterate: no school	11.4	32.9	38.2	31.2	28.6	28.6
Illiterate: some school	21.6	51.4	53.3	46.8	42.5	43.7
Can read and write	32.4	68.4	69.5	68.1	60.9	59.3
Primary	37.5	74.6	76.2	71.4	66.1	65.1
Secondary	46.5	77.7	92.6	81.5	72.7	74.1
University	38.5	77.5	90.2	(87.5)	76.2	71.9
Pattern of work						
Before and after	14.9	50.1	52.8	35.4	42.2	40.2
Worked before only	15.3	49.7	44.3	59.5	38.1	40.3
Worked after only	20.9	50.8	43.6	37.0	42.5	39.7
Never worked	19.3	46.0	49.4	43.2	39.3	39.7
B Husband's characteristics						
Level of education						
Illiterate: no school	9.3	27.1	33.0	28.2	24.6	24.2
Illiterate: some school	13.1	38.4	38.3	32.4	27.6	31.2
Can read and write	22.7	53.1	56.9	49.6	46.1	45.9
Primary	26.7	61.3	66.7	69.6	54.8	54.7
Secondary	32.3	75.2	79.0	71.7	62.7	64.8
University	43.0	73.6	90.0	87.0	73.1	71.5
Occupation						
Prof., tech. and admin.	32.3	71.5	81.0	73.7	65.2	64.2
Clerical	37.2	71.0	75.0	66.7	64.6	62.9
Sales	26.7	47.5	61.4	61.5	49.7	41.6
Farmers	9.0	25.3	32.6	24.5	23.0	23.0
Agricultural workers	4.4	16.2	23.2	14.6	14.2	14.9
Services	23.9	52.4	51.7	42.5	44.9	43.8
Manual	25.6	59.2	59.5	54.0	49.6	50.0

Source: Table 4.3.2

reported ever-use of contraception and were currently married and non-pregnant were asked the question: 'Are you or your husband using a method to keep you from getting pregnant?'. If the response was 'yes', the next question was 'What method are you using?'.

The percentage of current users among 'all' currently married women is 24.2 per cent. However, analytical precision is enhanced if currently married women who are not exposed to the risk of conception are excluded. The user-rates presented in this section are, therefore, computed by relating women who are currently using contraception (numerator) to all currently married non-pregnant women who considered themselves to be fecund (denominator). These women are said to be 'exposed'. They are the only women in the sample who were 'exposed' to risk of conception at the time of the survey and for whom the question on current use is
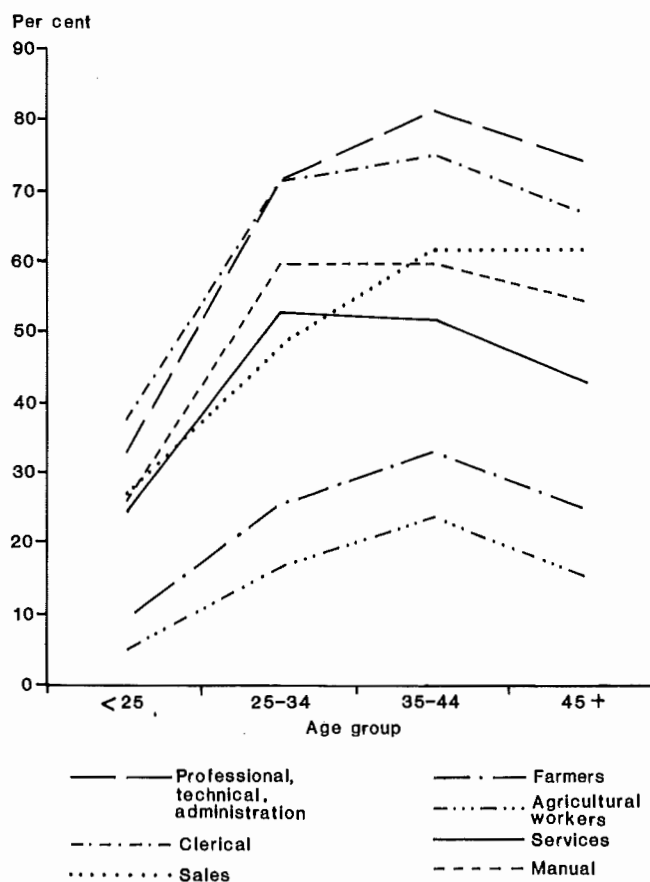
Figure 8.1(c) Percentage of ever-married women who have ever used any contraceptive method, by age and husband's occupation

relevant. As before, sterilized women are treated as though they were 'exposed' but currently using a method. Altogether, this base population of exposed women numbers 6058 women, or 76 per cent of the total number of currently married women.

The percentage of current users among 'exposed' women is given in table 8.6 according to age and current

Table 8.6 Percentage of exposed women who are currently using contraception, including sterilization, by current age and number of living children

Current age	Number of living children						All
	0	1	2	3	4	5+	
<20	0.0	11.7	7.7	(14.3)	(0.0)	—	5.3
20–24	4.5	19.7	19.8	20.9	15.9	(30.0)	17.5
25–29	4.7	32.8	41.3	29.3	33.5	28.7	31.6
30–34	0.0	31.3	51.1	52.3	44.7	31.2	39.9
35–39	0.0	17.1	43.3	45.6	49.1	40.6	41.1
40–44	5.0	18.2	47.2	50.9	42.0	45.5	43.5
45+	(0.0)	(6.7)	25.0	35.5	30.4	48.3	39.8
All	2.1	21.4	34.4	36.6	40.1	39.7	31.9

Source: Table 4.4.2

family size. Of all exposed women, 32 per cent are current users. Only 21 per cent of women with one living child are current users; but this proportion increases to 34 per cent for those with two children, and to 37 and 40 per cent for those with three and four or more children, respectively. This pattern suggests that there is scant reliance on contraception for spacing the first and second child.

There also appears to be an inverted U-shaped pattern with respect to age. Among women with two children, current use tends to be highest in the 30–34 age group (51 per cent) and rather lower among both older and younger women. In general, current use, as with ever-use, appears to vary within a narrow range among women at ages 30 or more who have at least two living children. It is somewhat surprising that current use is not more strongly related to family size among women with two or more children, as one would expect that the desire for fertility regulation would be more intense for those with larger families and that this tendency would be reflected in contraceptive practice. This point will be taken up in detail in chapter 10.

Table 8.7 gives further details on current users of contraception according to specific method used. The dominant position of the pill, which comprises 68 per cent of all use, can be clearly seen. The IUD is the next most prevalent method, being used by 17 per cent of all users. All other efficient methods account for only 9 per cent of total use, while the traditional methods — mainly rhythm and withdrawal — account for the remaining 6 per cent of current use.

We turn next to examine the association, if any, between the current sex composition of the family and current contraceptive practice. The data in table 8.8

Table 8.7 Per cent distribution of current users of contraception according to specific method used

Method	Per cent
A Efficient methods	94.4
Pill	68.4
IUD	16.7
Condom	4.8
Female sterilization	2.9
Other female scientific	1.0
Injection	0.3
Male sterilization	0.3
B Traditional methods	5.6
Rhythm	2.3
Withdrawal	1.7
Other	0.6
Total	100.0

Source: Derived from table 4.4.1

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show that Egyptian couples are not likely to use contraception much unless they have at least one son. Use becomes, in particular, more frequent among women with balanced sex composition or with more sons than daughters. The absence of a daughter in the family is also, though to a lesser degree, a deterrent to contraceptive practice. This pattern is consistent with the preference noted in the preceding chapter, for a combination of balance and son preference.

Differentials in current use by socio-economic variables are summarized in table 8.9. As with ever-use, type of locality and educational level and husband's occupation emerge as the background variables most closely associated with current use (figure 8.2).

Thus, the level of current use reaches 52 per cent among urban women, but only 16 per cent among rural women. The regions show three distinct groups. Metropolitan areas, the cities and towns of Lower Egypt, and the cities of Upper Egypt report levels of current use ranging between 47 and 62 per cent. Rural Lower Egypt and the towns of Upper Egypt show substantially lower levels of use of 24 per cent. Rural Upper Egypt has by far the lowest use at only 6 per cent.

The table also shows a uniform positive relationship between level of education and current contraceptive use. Even among illiterate women, current use increases from 21 per cent for women who never attended school, to 30 per cent for those who spent some time at school. Among literate women, current use increases steadily from 51 per cent for women who can read and write, to 69 per cent for those with university education.

Thus, differentials in current contraceptive use across socio-economic variables are, generally, in the same direction as differences in current fertility and family size desires across these groups.

8.5 CONTRACEPTIVE EFFICACY

The effect of contraceptive use on the length of the period of exposure to risk of conception is illustrated in table 8.10, which gives the mean length of the last closed birth interval and the open interval, by use of contraception and current age.

The figures for the last closed birth interval are based on the 6946 women in the sample with at least two live births, including any current pregnancy. The mean length of the interval for women who reported contraceptive use during the interval was 44 months compared with 34 months for those who did not use. This modest difference of about 22 per cent holds for all age groups, except those under 25 years.

Data for the open birth interval are based on the 5457 'exposed' women with one or more live births. The picture that emerges from these figures contrasts markedly with that of the closed interval. Women who had used a method in the open interval or are currently using a method, have, on the average, an open interval of 56 months, compared with 29 months for those who have not used a method since their last birth. This represents a difference of 93 per cent. The magnitude of this difference, however, varies by age, increasing from 45 per cent for women under 25 years, to a maximum of 88 per cent for women 25–34; and then it drops 60 per cent for those at ages 35–44.

These results for the closed and open intervals suggest a low contraceptive efficacy for spacing purposes, but high efficacy for termination of childbearing among certain socio-economic groups of women. This tentative conclusion is consonant with other findings for the survey.

8.6 SUMMARY

Knowledge of contraception is widespread in Egypt; 90 per cent of all ever-married women know about at least one contraceptive method. The pill is by far the most widely recognized method — known by 89 per cent, followed by the IUD — 70 per cent, and female sterilization — 43 per cent. Traditional methods such as the rhythm and withdrawal are known by few women. This pattern reflects emphases of the family planning programme and suggests that widespread contraceptive knowledge is relatively recent.

There are very narrow socio-economic differentials in the level of awareness of contraception. The only signifi-

Table 8.8 Percentage of 'exposed' women who are currently using contraception by number of living sons and number of living daughters

Number of living daughters	Number of living sons						All
	0	1	2	3	4	5+	
0	2	22	36	44	53	42	20
1	21	34	39	43	51	37	35
2	33	35	45	47	53	34	41
3	26	27	32	36	38	45	32
4	26	29	46	39	32	36	37
5+	36	28	37	43	47	33	36
All	15	29	39	42	48	38	32

Source: Table 4.4.3

Table 8.9 Percentage of exposed women who are currently using contraception, including sterilization, by socio-economic characteristics

Socio-economic characteristics	Age group				All
	<25	25–34	35–44	45+	
All Egypt	14.0	35.7	42.1	39.8	31.9
A Wife's characteristics					
Type of residence					
Urban	28.4	54.6	62.4	59.0	51.7
Rural	6.4	18.4	24.3	21.2	16.3
Region					
Cairo	29.1	55.0	64.3	65.2	53.2
Alexandria	39.2	66.9	64.5	65.5	62.0
Lower Egypt	14.6	35.0	45.9	42.8	32.7
Upper Egypt	5.0	14.7	16.4	14.3	12.1
Type of locality					
Metropolitan	30.9	57.9	64.4	65.3	55.2
Cities: Lower Egypt	30.6	60.6	72.8	58.3	58.5
Cities: Upper Egypt	33.3	47.5	58.0	(40.0)	47.2
Towns: Lower Egypt	30.9	52.4	69.1	73.1	52.0
Towns: Upper Egypt	11.3	30.2	30.3	(16.7)	24.1
Rural: Lower Egypt	10.0	25.8	36.3	30.5	24.1
Rural: Upper Egypt	2.0	6.2	8.2	10.7	5.6
Level of education					
Illiterate: no school	7.7	22.3	31.3	31.0	21.3
Illiterate: some school	13.9	34.9	41.3	42.3	30.4
Can read and write	28.3	54.0	61.9	52.0	50.9
Primary	29.0	58.6	73.1	(58.3)	55.5
Secondary	45.1	69.3	78.8	(84.6)	66.1
University	(42.9)	64.4	88.4	(100.0)	69.1
Pattern of work					
Before and after	9.0	42.6	46.3	45.5	36.4
Worked before only	10.0	36.8	36.1	(69.2)	29.0
Worked after only	13.3	37.5	42.7	(50.0)	35.7
Never worked	14.9	33.9	41.8	37.6	31.1
B Husband's characteristics					
Level of education					
Illiterate: no school	7.0	17.9	26.2	25.2	17.9
Illiterate: some school	9.3	25.9	27.4	(41.7)	20.0
Can read and write	13.2	37.0	47.8	44.4	34.5
Primary	20.2	47.4	57.7	53.1	44.1
Secondary	29.8	62.5	65.3	60.9	53.5
University	41.2	60.1	84.1	(88.9)	64.5
Occupation					
Prof., tech. and admin.	26.8	57.2	74.4	73.5	56.0
Clerical	26.5	61.2	67.4	(50.0)	55.3
Sales	22.2	35.4	56.4	56.8	41.6
Farmers	7.0	16.7	24.7	24.1	16.9
Agricultural workers	3.0	8.9	20.1	8.2	9.4
Services	13.0	39.1	41.8	34.1	33.7
Manual	20.3	43.3	47.9	51.1	38.6

Source: Table 4.4.5

cant exception is rural Upper Egypt, with a level of contraceptive knowledge of only 68 per cent.

About 40 per cent of all ever-married women have used at least one method. Ever-use of contraception, in contrast to knowledge, varies substantially by socio-economic variables. Type of locality, level of education, and husband's occupation are the characteristics most associated with ever-use.

Cairo, Alexandria and the cities and towns of Lower Egypt show levels of ever-use ranging between 63 and 70 per cent. The cities of Upper Egypt have a lower level of ever-use, 55 per cent. Rural Lower Egypt and the towns in Upper Egypt report similar levels of ever-use of over 30 per cent. Rural Upper Egypt shows the extremely low level of ever-use of 11 per cent.

This pattern of differentials in contraceptive ever-use
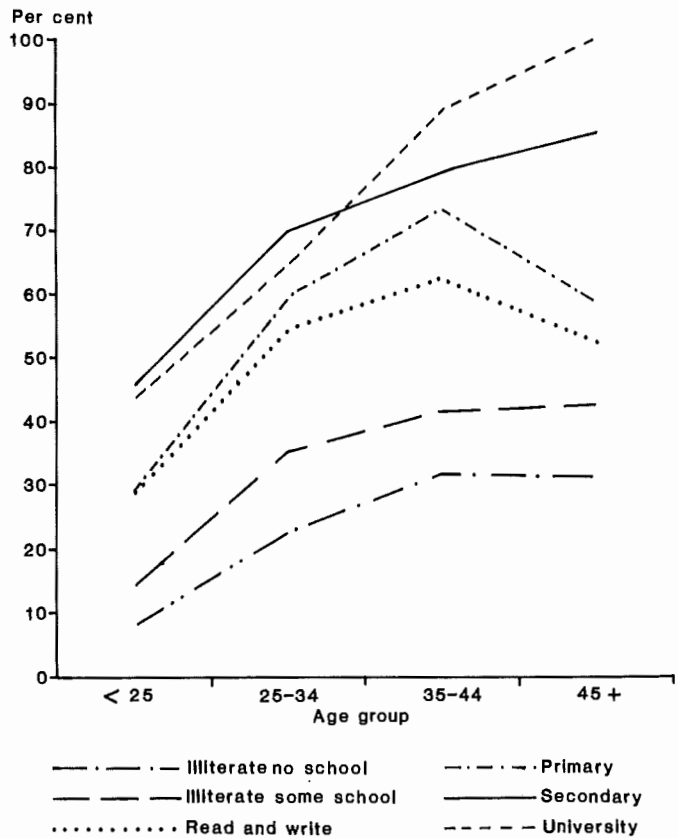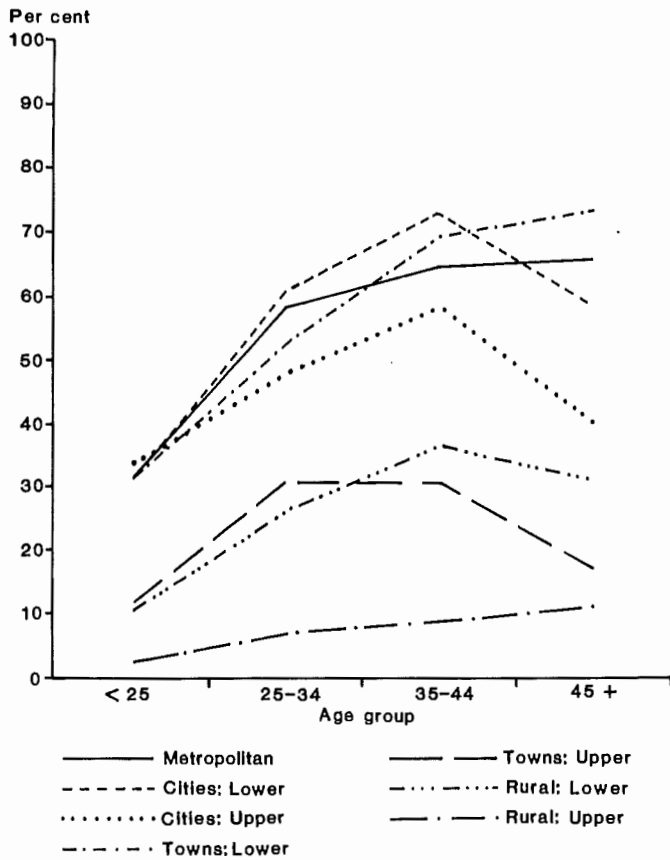
Figure 8.2(a) Percentage of currently married, exposed women who are currently using contraception, by age and type of locality

Figure 8.2(b) Percentage of currently married, exposed women who are currently using contraception, by age and level of education

suggests that most of the regional variation in current fertility can be accounted for by variations in both age at marriage and contraceptive practice.

The percentage of current users among 'all' currently married women is 24 per cent. Analysis of current use has been, however restricted to currently married fecund and non-pregnant women, ie 'exposed' women. The percentage of current users among exposed women is 32 per

cent. This proportion increases from 21 per cent for women with one living child, to 34, 37 and 40 per cent for those with 2, 3 or 4 living children, respectively. This pattern suggests that there is scant reliance on contraception for spacing the first and second child.

The pill comprises 68 per cent of all current use, followed by the IUD (17 per cent) and other efficient methods (9 per cent), while traditional methods account

Table 8.10 Mean length (in months) of last closed birth interval and open birth interval by use of contraception and current age

Current age	Last closed interval			Open interval		
	Contraceptive use		All	Contraceptive use		All
	Used	Did not use		Used/ currently using	Did not use	
Under 25	27.0	26.0	26.2	16.2	11.2	12.3
25–34	40.4	32.0	34.7	35.1	18.7	25.5
35–44	52.4	39.0	42.7	80.5	50.0	64.5
45–49	52.5	40.9	43.0	122.6	105.2	114.0
All	44.1	34.3	36.9	55.7	28.7	39.3

Source: Tables 4.6.1 and 4.6.2
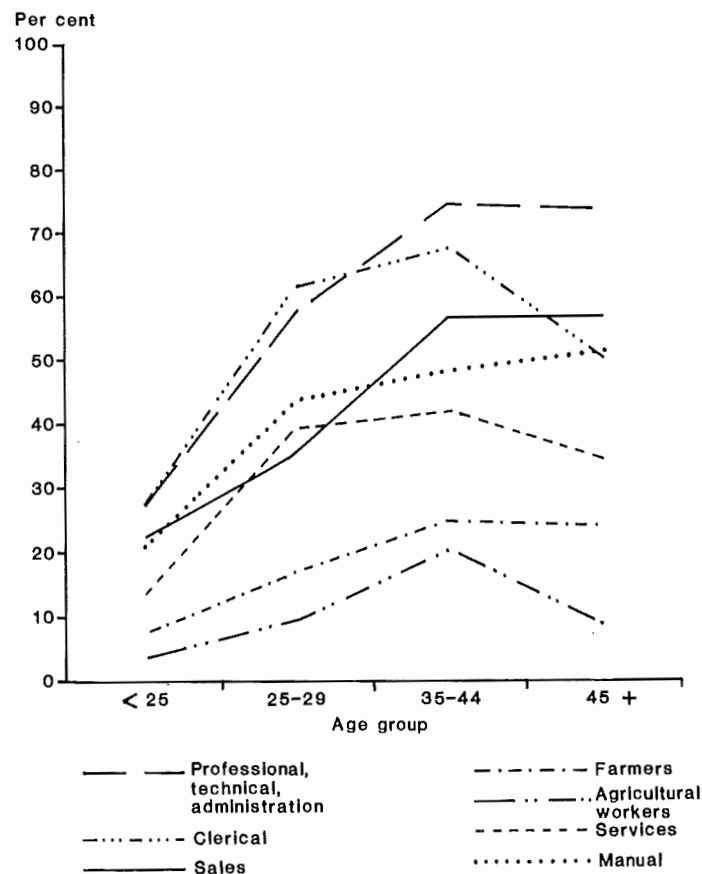
Per cent

Figure 8.2(c) Percentage of currently married, exposed women who are currently using contraception, by age and husband's occupation

for the remaining 6 per cent of all current use.

Differentials in current use of contraception by socio-economic variables follow very closely the differentials with respect to ever-use. Current use, for example, reaches 52 per cent among urban women, but only 16 per cent among rural women. Rural Upper Egypt has the lowest current use of only 6 per cent. In general, the differentials in current contraceptive use are in the same direction as differences in current fertility and family size desires.

An approximate assessment of contraceptive efficacy is obtained by comparing the length of the last closed birth interval and that of the open birth interval, between those who ever used contraception in the given intervals and those who did not. The pattern of contraceptive use in these two intervals suggests a low contraceptive efficacy for spacing purposes, but high efficacy for termination of childbearing among certain socio-economic groups: the better educated, those living in Metropolitan and urban Lower Egypt, and women whose husbands have non-agricultural occupations.

AVAILABILITY OF CONTRACEPTIVE SERVICES

9.1 INTRODUCTION

One of the principal goals of the Egyptian family planning programme has been to bring services within reach of all couples who might want to use them. Physical accessibility has been promoted mainly by distributing contraceptives through the extensive network of health facilities run by the Ministry of Health. Although the concentration and variety of potential outlets is undoubtedly greater in urban areas, there is, in principle, a health facility within 3 km of every village with more than 3000 inhabitants and an average of one facility per 9000 rural people. The pill and the IUD have been the main methods offered. At the same time, family planning has been made financially more accessible by subsidizing the cost of pills in commercial pharmacies as well as public clinics and by offering the IUD free of charge.

The EFS provided an opportunity to evaluate the level of awareness of sources of contraceptive assistance among women of childbearing age and to assess their perceptions of service accessibility. Respondents who had heard of the pill or the IUD were asked where they would go to obtain each method, how long it would take them to get to that place, and how much they thought the method would cost there. All other women who knew of any method of family planning were asked simply whether they know of a place to get advice and supplies. Several other aspects of availability were also covered (utilization of the services, problems obtaining supplies, household possession of supplies), but the discussion here is confined to these central issues. Results are presented only for currently-married women in order to focus attention on those to whom family planning services would have been of most immediate concern.

9.2 KNOWLEDGE OF FAMILY PLANNING SOURCES

Knowledge of a source is defined here as having any definite response to the question on where the respondent would go to obtain the method. Those who did not name a place are considered not to have known a source, along with those who had not heard of the method and thus were not asked about sources. Overall, three-quarters of currently-married women knew where they could go to obtain family planning services (table 9.1). Nearly all of those who were aware of any source were able to name a place where the pill was available (98 per cent), and a little over half were familiar with sources for both the pill and the IUD (54 per cent). Just a few said that they knew of a place where they could get the IUD but not the pill (1 per cent) or knew only of a source for some method other than the pill and the IUD (1 per cent).

Awareness of sources of family planning assistance was reasonably widespread in all parts of the country except the rural areas of Upper Egypt. In Cairo, Alexandria and urban places in Lower Egypt, nine out of ten women could identify a source for the pill, although knowledge of sources for the IUD was considerably more common in the two metropolitan centres. The pattern in urban areas of Upper Egypt was very similar

Table 9.1 Per cent knowing family planning sources by method and by region: currently married women aged 15–49

Knowledge of source	All Egypt	Metro-politan	Urban Lower	Urban Upper	Rural Lower	Rural Upper
Source of advice or supplies (any method)	74.5	93.8	92.6	80.6	77.5	41.5
Where to get the pill	73.0	92.0	91.9	79.5	75.4	40.6
Where to get the IUD	40.7	67.7	57.4	38.7	37.7	11.3
Number of women	8012	1892	949	581	2621	1969

to that in the rural areas of Lower Egypt; in both cases a large majority could name a source for the pill, while the proportions knowing where to get the IUD dropped to a little over a third. In the villages of Upper Egypt, however, only two currently-married women out of five were aware of a place where they could obtain the pill, and knowledge of sources for the IUD was limited to a very small minority.

Variation in the level of knowledge of sources for the pill and the IUD can be partly explained by the extent of knowledge of the methods themselves. Confinement of attention to women who were familiar with each respective method reduced the differences between the two methods and, in most cases, those between regions also (table 9.2). The general pattern nevertheless persists, indicating that, among women who knew the method, knowledge of where to obtain a method increased as knowledge of the method rose in the population at large. On the other hand, the proportions shown for rural

Lower Egypt are considerably lower in these data than those for urban Upper Egypt, which suggested that lack of awareness of sources in particular is a pervasive problem in rural areas.

The respondents were asked to supply the name and location of the place to which they would go to obtain each method, and these responses were later classified by type of facility. It should be emphasized that the results represent, in the first place, those places known to individual women and, secondly, the sources that they preferred to use, rather than an objective view of the types of source that may have been available. The distributions for the pill and the IUD differ in ways that are appropriate to the nature of the services involved (table 9.3). For both methods sources in the private sector figure prominently.

The pill is available without prescription from pharmacies in Egypt, and almost half the women who knew a

Table 9.2 Per cent knowing a method source by region: currently married women aged 15–49 who knew the method

Method	All Egypt	Metro-politan	Urban Lower	Urban Upper	Rural Lower	Rural Upper
Pill	81.0	93.4	94.6	84.6	78.3	58.5
Number of women	7221	1863	922	546	2525	1365
IUD	57.6	72.6	64.9	53.8	47.7	39.0
Number of women	5660	1764	840	418	2069	569

Table 9.3 Per cent distribution by the type of method source the respondent would use and by region: currently married women aged 15–49 who knew a source for the method

Method and type of source	All Egypt	Metro-politan	Urban Lower	Urban Upper	Rural Lower	Rural Upper
Pill						
FP centre	39.1	45.6	35.8	47.4	34.3	35.4
Mobile FP unit	0.1	0.0	0.1	0.0	0.1	0.1
Hospital	11.4	3.2	6.3	7.4	20.1	15.9
Social societies	0.4	0.9	1.0	0.0	0.1	0.0
Pharmacy	48.4	50.2	56.2	44.4	44.5	47.7
Private doctor	0.3	0.2	0.3	0.4	0.3	0.8
Other	0.3	0.0	0.2	0.4	0.6	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	5849	1740	872	462	1976	799
IUD						
FP centre	32.2	50.7	25.1	18.2	19.5	14.0
Mobile FP unit	0.0	0.0	0.0	0.0	0.1	0.0
Hospital	27.5	19.3	26.2	16.0	41.3	28.8
Social societies	0.9	1.2	2.2	0.0	0.1	0.0
Pharmacy	2.5	1.7	5.1	5.8	0.7	5.9
Private doctor	36.7	27.1	41.3	60.0	38.2	51.4
Other	0.0	0.1	0.0	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	3260	1281	545	225	982	222

source for the pill said they would get them at such a place. Another third named a family planning centre, and the only other commonly cited source for the pill was a hospital. Pharmacies were mentioned most often in urban Lower Egypt, family planning centres in the two metropolitan centres and in the towns and cities of Upper Egypt, and hospitals in the rural areas.

Places named as sources for the IUD were fairly evenly divided overall among private doctors, family centres and hospitals. In Upper Egypt, however, more than half the respondents who knew where to get the IUD said they would go to a private doctor. Again for this method, family planning centres are important in Cairo and Alexandria and reference was often made to hospitals in rural areas, especially the villages of Lower Egypt, where private doctors were not mentioned as commonly.

9.3 ACCESSIBILITY OF THE PILL AND THE IUD

The duration of travel to get to the place where a woman would obtain a method can be viewed as an indicator of the cost of contraception in terms of time diverted from other activities. It is at best a rough indicator, since the time actually taken in obtaining service might vary quite differently for many reasons. The latter would be much less, for instance, if the trip coincided with one regularly made for other purposes, eg to go to market, or it could be more if the time expended once the source was reached was long compared to the time it took to get there.

The range of travel times to sources for the pill and the IUD reported in the EFS is quite narrow (table 9.4). The vast majority of women who knew of a source for either method said that it would take less than an hour to get there. In Cairo and Alexandria almost three-quarters lived within 15 minutes' travel of a pill outlet. It is evident, however, that both longer travel times and non-response on these items are associated with lack of knowledge of a source to begin with. The proportions of women reporting journeys of half an hour or more and the proportions who did not give an answer to the question, perhaps partly because the place was relatively remote, are much higher for the IUD than for the pill, and for both methods they are much higher in rural than in urban areas. This is essentially the same pattern that was observed above in relation to knowledge of sources. It stands to reason that accessibility could influence the level of awareness of sources of contraceptive assistance as well.

There are also substantial differences in the estimates of method costs. While the actual price of an IUD is much higher than that of a month's supply of pills, and is therefore measured in pounds as opposed to piastres, it could be expected to provide up to several years' protection against pregnancy. Nevertheless, in keeping with the policy of the family planning programme to provide the IUD free of charge, 43 per cent of all women who knew a source thought it would be available at no cost, and this proportion rose to 58 per cent in the metropolitan areas where family planning centres were the type of source most often mentioned (table 9.5). The reported price of

Table 9.4 Per cent distribution by travel time to the method source the respondent would use and by region: currently married women aged 15–44 who knew a source for the method

Method and travel time	All Egypt	Metro-politan	Urban Lower	Urban Upper	Rural Lower	Rural Upper
Pill						
< 15 minutes	43.7	62.5	48.3	45.5	32.0	25.5
15–29 minutes	26.6	24.5	32.2	35.1	25.2	23.1
30–59 minutes	17.9	8.2	16.1	14.1	25.6	24.3
60+ minutes	5.8	1.8	2.2	2.2	9.4	12.0
Not stated	6.1	3.0	1.3	3.2	7.8	15.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	5848	1740	872	462	1974	800
IUD						
< 15 minutes	20.4	28.5	18.7	28.4	11.1	11.7
15–29 minutes	24.5	29.5	31.6	29.3	14.4	17.6
30–59 minutes	30.4	25.8	33.2	24.4	37.8	23.9
60+ minutes	11.9	7.2	8.1	8.4	18.0	25.7
Not stated	12.7	9.1	8.4	9.3	18.8	21.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	3257	1281	545	225	985	221

Table 9.5 Per cent distribution by the respondent's estimate of method cost at the source she would use and by region: currently married women aged 15–44 who knew a source for the method

Method and estimated cost	All Egypt	Metro-politan	Urban Lower	Urban Upper	Rural Lower	Rural Upper
Pill (per cycle)						
No cost	1.1	0.7	0.6	1.9	1.1	1.9
1–9 piastres	43.1	47.2	42.0	46.8	44.0	31.0
10–19 piastres	21.2	17.1	24.3	17.7	25.1	19.0
20+ piastres	20.2	27.2	26.9	19.3	14.4	12.3
Not stated	14.5	7.8	6.2	14.3	15.4	35.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	5847	1739	872	462	1976	798
IUD (per insertion)						
No cost	43.0	57.8	37.6	21.8	37.9	14.9
1–4 pounds	11.0	6.9	12.1	8.9	16.3	10.0
5–9 pounds	9.5	8.0	14.3	12.0	8.7	6.3
10+ pounds	10.4	11.2	14.3	19.1	6.7	4.1
Not stated	26.2	16.1	21.7	38.2	30.4	64.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	3257	1281	545	225	985	221

the pill ranges to over 20 piastres. The level of non-response on this question is very high, however, particularly for the IUD and among rural women in Upper Egypt; this conforms to the WFS experience with this item in other countries.

9.4 AVAILABILITY AND CONTRACEPTIVE USE

The relationships between various aspects of contraceptive availability and contraceptive use can be examined for those women who knew a source using individual-level data. Two topics are explored here: the association of method use with the type of source to which the respondent said she would go and the association of use with travel time to the source. Since there is, of course, no information about possible sources for respondents who did not know of places where they could go, they must be dropped from consideration. In addition, the tabulations are limited to women who were currently exposed to the risk of pregnancy, ie those who were not pregnant and were fecund.

Among women who knew a source for the pill 29 per cent overall were using this method, 13 per cent were using some other method and 58 per cent were not using any method (table 9.6). The proportions are about the same for women who would use either of the two principal types of source reported for the pill, family planning centres and pharmacies. Those who said they would go to a hospital, however, were considerably less likely to have been using the pill or any method at all.

Among those who said they would go to a social society, both pill use and use of other methods appear to have been very high, although the number of women who mentioned this type of source is too small to draw definite conclusions.

Twelve per cent of women who knew sources for the IUD were currently using that method, 40 per cent were using a different method (largely the pill) and almost half were using no method. IUD use was roughly at this average level among women who said they would get it from a private doctor, it was almost 50 per cent higher among those who mentioned family planning centres, and, as was true of the pill, it was especially low among those who would have gone to a hospital. It is possible that hospitals may have been less successful than other types of facility in promoting family planning. Social societies, on the other hand, could be associated with higher levels of use of the IUD as well as the pill.

The results for travel time are particularly interesting because in other WFS surveys there has been little evidence of a relationship between this dimension of service accessibility and contraceptive use. In the EFS data, use of the pill among women who knew where to obtain declines regularly as travel time to the places where they would go increases (table 9.7). The proportion using this method is only two-fifths as high for women who would have had a journey of an hour or more (15 per cent) as it is for those who could get there in less than 15 minutes (37 per cent). The same effect does not emerge in the case of the IUD. The difference in pattern between the two methods conforms to prior expectation since use of the pill usually involves frequent

Table 9.6 Per cent distribution by current contraceptive use and by the type of source the respondent would use: currently married women aged 15–49 who were exposed to the risk of pregnancy and knew a source for the method

Method and contraceptive use	All women	FP centre	Hospital	Social societies	Pharmacy	Private doctor	Other
Pill							
Using pill	29.2	29.1	20.1	52.4	31.3	—	—
Using other method	12.9	14.7	7.2	23.8	12.6	—	—
Using no method	57.9	56.2	72.7	23.8	56.1	—	—
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	4507	1752	498	21	2205	15	16
IUD							
Using IUD	12.4	17.3	7.7	16.0	6.9	11.8	—
Using other method	39.6	41.9	32.1	64.0	38.9	42.2	—
Using no method	48.0	40.8	60.2	20.0	54.2	46.0	—
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2576	845	688	25	72	943	3

Table 9.7 Per cent distribution by current contraceptive use and by travel time to the method source the respondent would use: currently married women aged 15–49 who were exposed to the risk of pregnancy and knew a source for the method

Method and contraceptive use	All women	< 15 minutes	15–29 minutes	30–59 minutes	60 + minutes
Pill					
Using pill	29.2	37.1	28.3	19.8	14.8
Using other method	12.9	15.4	11.7	11.6	9.5
Using no method	57.9	47.5	60.0	68.6	65.8
Total	100.0	100.0	100.0	100.0	100.0
Number of women	4506	2018	1188	773	264
IUD					
Using IUD	12.4	12.5	12.7	13.4	16.3
Using other method	39.5	47.8	41.5	36.3	32.5
Using no method	48.0	39.7	45.8	50.3	51.2
Total	100.0	100.0	100.0	100.0	100.0
Number of women	2575	534	655	782	295

trips for resupply, while for the IUD one visit to the source may suffice for a relatively long period, and travel time becomes less relevant. It remains to be seen whether the relationship observed for the pill holds up when education and other potentially confounding factors are controlled.

9.5 SUMMARY

The information collected in the EFS reveals that, although much progress had been made, awareness of contraceptive services was far from universal at the time of the survey. While most women were familiar with a source for at least one method, there was considerable variation throughout the country. Only 41 per cent of village women in Upper Egypt knew of any place where

they could go, and given the levels of knowledge of the pill and the IUD as methods, knowledge of sources was low also in rural Lower Egypt. In all parts of the country, knowledge of where the IUD could be obtained lagged well behind knowledge of facilities offering the pill. Pharmacies and family planning centres were the principal types of source cited for the pill but hospitals also were quite important. For the IUD, private doctors, family planning centres and hospitals were mentioned about equally often, and other types of source were insignificant.

Among those women who did know of sources for the pill and the IUD, there were substantial differences in the perceived accessibility of the services. Travel times to places where the pill could be obtained were typically a good deal shorter than travel times to sources of the IUD, although even for the IUD, trips of over an hour

were not common. Most women in Cairo and Alexandria knew of sources for the pill that were very close by, whereas both appeared to be particularly inaccessible to rural residents. A high proportion of respondents did not provide estimates of method costs, but among those who did, the pill was thought to be available at a very low price and many were aware that they could obtain an IUD free of charge.

The likelihood that a respondent who knew a source for either method would have been currently using that method differed to some extent by the type of source to which she said she would go. The levels of use were particularly low for women who mentioned hospitals. Travel time to the method source had a substantial bearing on use of the pill but not the IUD. An increase in travel time to a pill source from less than 15 minutes to 30 minutes or more resulted in a 50 per cent drop in the proportion of exposed women currently using the pill. Although it cannot be tested with these data, it seems plausible that proximity to a source has a further influence on pill use as a determinant of the probability of knowing a source in the first place; this should apply to the IUD as well. Lack of availability thus has considerable potential to restrict family planning practice in rural areas.

FERTILITY PREFERENCES AND THE POTENTIAL CONTRACEPTIVE DEMAND

10.1 INTRODUCTION

The major goal of the family planning programme in Egypt is to provide services to couples who want to limit their family size, and to couples who wish to delay their next wanted birth. In chapter 7, it has been shown that the indicators of family size desires of Egyptian women were internally consistent. This consistency, however, is no guarantee that the responses on fertility preferences are necessarily meaningful. Among the fecund women who want no more children, there will be those who are not practising contraception. There can be many reasons for this inconsistency between intention and practice. A woman may be genuinely reluctant to have more children but may lack information or services to implement that preference. In other cases, the woman's stated preference to limit family size may be relatively slight, with insufficient motivation behind it to turn that preference into overt behaviour. Other diverse cultural and psychological factors also may contribute to inconsistency between preference and practice.

This chapter will examine the family size desires of Egyptian women in relation to their contraceptive use status. The focus of attention will be on the consistency between stated preference and behaviour, and in particular on the identification of those women who do not use contraception even though they claim not to want more children. In the final section, attention will be focussed on the potential contraceptive demand in the various regions of Egypt.

10.2 FERTILITY PREFERENCES AND CONTRACEPTIVE USE

Table 10.1 summarizes current use of contraception by the desire for more children among currently married 'exposed' women. A pronounced association exists between attitude and behaviour. Whereas only 12 per cent of those wanting another child were using contraception at the time of the survey, the proportion of users jumps to 49 per cent among those who want to cease childbearing. Thus, women wanting to cease childbearing are four times more likely to be current users of contraception than women wanting further children.

It is obvious that the current use of contraception by

Table 10.1 Per cent distribution of exposed women according to current contraceptive status, by desire for more children[a]

Desire for children	Number of living children	No method currently used	Inefficient method	Efficient method	Total	Number of women
Future births wanted	<3	86.5	1.0	12.5	100	1962
	3	87.4	0.3	12.3	100	325
	4	91.4	0.5	8.1	100	185
	5+	94.6	0.5	4.9	100	185
	All	87.5	0.8	11.6	100	2657
Future births not wanted	<3	43.5	4.4	52.1	100	501
	3	49.7	3.1	47.3	100	620
	4	50.1	2.3	47.6	100	657
	5+	55.3	2.4	42.3	100	1490
	All	51.4	2.8	45.8	100	3268
All	<3	77.8	1.6	20.5	100	2489
	3	63.0	2.1	34.9	100	962
	4	59.4	1.9	38.7	100	850
	5+	60.1	2.2	37.8	100	1700
	All	67.8	1.9	30.3	100	6001

[a]Women undecided about desire for more children numbered 76, and are not shown in the table.
Source: Table 5.2.1

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women who want more children is for spacing purposes, whereas contraceptive use by women wanting no more children is for termination purposes. Using the figures in table 10.1, it can be shown that about 18 per cent of current users are women desiring to space births, while the remaining 82 per cent are women desiring to cease childbearing.

Although the data in table 10.1 indicate a pronounced link between reported attitudes and behaviour, they also show an apparent inconsistency between intention and behaviour. Overall, 51 per cent of the women who state a desire for no more children are not using any method of contraception. Considering the high level of contraceptive knowledge in Egypt, this figure is quite high. The level of inconsistency, for the majority of women, varies little across age, number of living children and marriage duration groups, as may be seen from table 10.2.

Differentials in the level of consistency, according to the socio-economic variables, are shown in table 10.3, which gives the percentage of current users of a modern method of contraception among the 'exposed' women who want to cease childbearing. These differentials follow the familiar pattern; the level of consistency is lowest among women residing in rural areas, those with no education, and women whose husbands are engaged in agricultural occupations. It is highest among women living in metropolitan and urban Lower Egypt, women with some education and wives of men in professional occupations. The level of consistency has an intermediate level among women in the cities of Upper Egypt, and those married to manual, sales or services workers.

This pattern suggests that variation in the degree of

motivation or intensity of the desire to cease child-bearing, is an important component of the differentials in the level of consistency observed here. Although intensity of the desire to limit family size was not measured in the survey, this possibility cannot be ignored.

The high level of inconsistency, as defined here, indicates the need not only to improve the efficiency of the family planning delivery system, but also to adopt strategies that would help in altering the motivation for large families in rural Egypt.

10.3 FERTILITY PREFERENCES AND CONTRACEPTIVE INTENTIONS

Part of the inconsistency between fertility intention and contraceptive use experience may be temporary if some of the women who want no more children and who do not use contraception have intentions to adopt family planning in the future. It is, therefore, necessary to try and develop a more complete profile of the association between fertility intentions and contraceptive use or intentions. In the previous section, the focus of analysis was on the 'exposed' women who want no more children. By definition, the 'exposed' women do not include currently pregnant women, who were, of course, not asked about current use of contraception. In chapter 3, it has been shown that, in Egypt, a fairly high percentage of women are currently pregnant. The future impact of such women on fertility levels can be expected to be at least as great as that of the women who are not currently pregnant. In this section, we enlarge the scope of analysis to include all currently married 'fecund' women. In this way, the pattern of contraceptive use status may be

Table 10.2 Percentage of women who are currently using an efficient method of contraception (including sterilization) among women who are currently exposed and want no more children, by current age, number of living children and years since first marriage

Current age	Percentage	Number of living children	Percentage	Years since first marriage	Percentage
<20	(20.0)	0	(33.3)	0–4	43.2
20–24	32.4	1	39.1	5–9	45.1
25–29	44.1	2	54.3	10–14	47.1
30–34	49.5	3	47.3	15–19	48.7
35–39	47.8	4	47.6	20–24	43.4
40–44	48.2	5	44.0	25–29	46.4
45+	42.0	6	43.2	30+	38.8
		7	38.7		
		8	41.5		
		9+	38.6		
Overall	45.8				

Source: Tables 5.2.2A and 5.2.3A

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Table 10.3 Percentage of women who are currently using an efficient method of contraception among those who are currently exposed and want no more children, by socio-economic characteristic (overall percentage 45.8)

A Wife's characteristics

Type of residence

Urban	Rural
61.4	28.4

Region of residence

Cairo	Alexandria	Lower Egypt	Upper Egypt
61.3	67.7	43.6	25.8

Type of locality

Metropolitan	Cities: Lower Egypt	Cities: Upper Egypt	Towns: Lower Egypt	Towns: Upper Egypt	Rural: Lower Egypt	Rural: Upper Egypt
62.9	67.9	54.4	65.6	36.5	33.6	14.8

Level of education

Illiterate: no school	Illiterate: some school	Can read and write	Primary	Secondary	University
35.9	43.6	62.2	64.0	70.1	75.0

Pattern of work

Before and after	Worked before only	Worked after only	Never worked
46.4	45.4	47.5	45.6

B Husband's characteristics

Level of education

Illiterate: no school	Illiterate: some school	Can read can write	Primary	Secondary	University
31.3	34.4	47.7	55.8	68.5	68.0

Occupation

Prof., tech. and admin.	Clerical	Sales	Farmers	Agricultural workers	Services	Manual
65.0	65.9	52.1	28.2	20.1	47.6	52.3

Source: Table 5.2.4A

expanded to include past use and intentions for future use, and not just current use.

Table 10.4 shows the per cent distribution of currently married fecund women according to fertility intentions and pattern of contraceptive use, by socio-economic variables. In this table, the women are classified according to their intentions for future fertility into two groups: those who want more children, and those who want no more. Within each group, each woman is allocated to one of four subgroups depending on her contraceptive use status: never used and intends to use; never used and does not intend to use; past user but not currently; and current user. Thus, the table identifies eight types of combination of intentions for future fertility and of contraceptive use.

Looking first at the national level, the situation may be summarized as follows:

GROUP A: Wants more children

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Table 10.4 Per cent distribution of currently married fecund women according to pattern of contraceptive use by desire for more children and by socio-economic characteristics

Socio-economic characteristics	Wants more children					Wants no more children				
	Never used		Past user	Current user	Total	Never used		Past user	Current user	Total
	and intends to use	and does not intend to use				and intends to use	and does not intend to use			
All Egypt	32	50	7	10	100	18	17	24	41	100
A Wife's characteristics										
Type of residence										
Urban	36	28	14	22	100	9	8	26	57	100
Rural	31	61	4	4	100	28	27	21	24	100
Region										
Cairo	37	22	15	26	100	9	5	28	58	100
Alexandria	29	20	19	32	100	4	6	24	66	100
Lower Egypt	48	33	8	11	100	23	15	24	38	100
Upper Egypt	18	76	3	3	100	21	38	19	22	100
Type of locality										
Metropolitan	36	21	16	27	100	8	6	26	60	100
Cities: Lower Egypt	45	16	14	25	100	10	4	23	63	100
Cities: Upper Egypt	39	29	8	24	100	15	11	22	51	100
Towns: Lower Egypt	37	24	17	22	100	7	10	27	56	100
Towns: Upper Egypt	23	65	6	6	100	16	24	28	32	100
Villages: Lower Egypt	51	37	5	7	100	29	18	24	29	100
Villages: Upper Egypt	16	80	3	1	100	24	48	16	12	100
Level of education										
Illiterate: no school	29	62	5	4	100	24	23	22	31	100
Illiterate: some school	37	45	8	10	100	17	17	28	38	100
Can read and write	39	26	15	20	100	12	7	25	56	100
Primary	45	18	12	25	100	8	6	26	60	100
Secondary	40	9	12	39	100	5	2	23	70	100
University	36	10	19	35	100	3	1	16	80	100
Pattern of work										
Before and after	34	40	8	18	100	19	15	22	44	100
Worked before only	42	44	6	8	100	18	18	25	39	100
Worked after only	28	53	9	10	100	15	17	28	40	100
Never worked	32	52	7	9	100	18	17	23	41	100
B Husband's characteristics										
Level of education										
Illiterate: no school	26	66	4	3	100	25	27	21	27	100
Illiterate: some school	29	61	3	28	100	22	28	21	29	100
Can read and write	39	44	8	9	100	17	13	27	43	100
Primary	34	38	9	19	100	13	11	25	50	100
Secondary	43	19	13	25	100	10	4	26	60	100
University	37	13	17	33	100	7	2	21	70	100
Occupation										
Prof., tech. and admin.	42	17	16	25	100	8	5	24	63	100
Clerical	40	22	10	28	100	6	6	26	62	100
Sales	29	52	10	9	100	16	10	24	50	100
Farmers	34	59	3	4	100	29	26	20	25	100
Agricultural workers	25	71	2	2	100	31	38	15	16	100
Services	31	52	8	9	100	17	14	25	44	100
Manual	33	42	10	15	100	14	12	29	45	100

Source: Table 5.3.3

Type A1: never used and intends to use, 32 per cent. This type represents intended contraception to either space births or terminate childbearing.

Type A2: never used and does not intend to use. In this type, the intentions for fertility and for contraceptive use are consistent but imply a high level of fertility. About 50

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per cent of the women who want more children belong to that group.

Type A3: past user but not currently, 7 per cent.

Type A4: current user, 10 per cent. Types (A3) and (A4) represent contraception to space births; relatively sophisticated use which will probably be followed in the future by use of Type (B4).

GROUP B: Wants no more children

Type B1: never used and intends to use, 18 per cent. This type represents intention for future use to terminate childbearing, but current behaviour is inconsistent with intentions.

Type B2: never used, and does not intend to use, 17 per cent. This type represents major inconsistency between intentions for fertility and for contraceptive use.

Type B3: past user, but not currently, 24 per cent. This type represents women who used contraception in the past to space births, and who will probably use it in the future to terminate childbearing. Special tabulations have disclosed that this percentage, 24 per cent, is made up as follows: 6 per cent breastfeeding, 7 per cent currently pregnant, 2 per cent have their husbands working outside Egypt, and 9 per cent other unspecified reasons.

Type B4: current user, 41 per cent. This type represents contraception to terminate childbearing.

Thus, among women who want no more children, 65 per cent are past or current users of contraception, 18 per cent intend to use, and only 17 per cent do not intend to use. This latter group, type B2, representing the inconsistency of wanting no more children but not intending to

contraceptive use, declines rapidly with increasing level of education; from 23 per cent for illiterate women to 1 per cent for those with university education. A similar pattern is also shown for women of type A2, ie those who want more children, never used and not intending to use contraception. This indicates that resistance to family planning, ie the intentions never to use contraception to space births or to cease childbearing, declines as education increases.

In general, those factors which lead to inconsistency between intention and behaviour seem to be weaker for the urban, the better educated and, as detailed tabulations show, the younger women. Those factors are also much weaker in rural Lower Egypt than in rural Upper Egypt.

On the basis of these findings, it would appear that the main tasks of family planning services in Egypt, should be formulated in terms of 'packages' that incorporate multiple strategies simultaneously.

10.4 NEEDS FOR FAMILY PLANNING SERVICES

Data on future intended use of contraception provide evidence of interest in fertility regulation and indication of potential contraceptive demand. The needs for family planning services in Egypt are indicated by the figures in table 10.5 which give the distribution of currently married fecund women by contraceptive use status and fertility intentions, according to region of residence.

The table indicates that family planning still has far to go in Egypt, if a significant reduction in fertility, of the society as a whole, is to occur. Broadly speaking, the

Table 10.5 Per cent distribution of currently married fecund women according to fertility and contraceptive intentions, by region of residence

	Ever used	Never used						Total
		Intends to use			Does not intend to use			
		Wants more children	Wants no more children	Sub-total	Wants more children	Wants no more children	Sub-total	
All Egypt	43	15	10	25	23	9	32	100
Metropolitan	72	12	5	17	7	4	11	100
Urban Lower Egypt	69	14	6	20	7	4	11	100
Urban Upper Egypt	45	12	9	21	24	10	34	100
Rural Lower Egypt	36	21	17	38	15	11	26	100
Rural Upper Egypt	11	11	7	18	56	15	71	100

Source: Derived from table 5.3.3

target population for the family planning programme is the 57 per cent of currently married women who never used contraception. This group represents as much as 89 per cent in rural Upper Egypt, 64 per cent in rural Lower Egypt, and 55 per cent in urban Upper Egypt. In metropolitan areas and urban Lower Egypt, the target population is much smaller, but still significant; 28 and 31 per cent, respectively.

Within each region, there are those who intend to adopt family planning in the future, and those who do not. Resistance to family planning is extremely high in rural Upper Egypt; 71 per cent of currently married women do not intend to use contraception. The level of resistance drops to 34 per cent in urban Upper Egypt, 26 per cent in rural Lower Egypt, and to only 11 per cent in metropolitan and urban Lower Egypt.

The regional range in the pattern of contraceptive use status can be broadly related to ranges in education, income distribution, access to health facilities, provision of family planning services, and many other variables that characterize aspects of the milieu in which the women of Egypt live and function.

From this, we may venture the following broad generalizations. There is evidence that socio-economic development and family planning programme efforts are most effective when they go together. For example, Cairo, Alexandria, and the cities of Lower Egypt have the highest socio-economic ranking, the lowest fertility and the highest contraceptive use. These areas were also the first to benefit from both development and family planning programme efforts. At the other extreme, rural Upper Egypt has the lowest socio-economic ranking, the highest fertility and the lowest contraceptive use. This region was the last to benefit from both development and programme efforts.

Nevertheless, after three decades of national development efforts and 17 years or so of official family planning programme experience, it appears that acceptance and adoption of family planning in Egypt can now gather its own independent momentum. This will be realized if steps are taken to increase motivation to reduce family size, and to energize and improve the efficiency of the family planning delivery system, particularly in rural areas. For example, in rural Lower Egypt, which is far less developed than metropolitan areas, 36 per cent have ever used contraception, and a further 38 per cent intend to use in the future. This reflects a very favourable climate towards moderating fertility in a region where easy and cheap family planning services have become available, on a wide scale, only since the mid 1970s.

10.5 SUMMARY

This chapter has examined the family size desires of Egyptian women in relation to their contraceptive use status. The main focus was on the consistency between stated preference and contraceptive behaviour.

The figures show a pronounced association between attitude and behaviour. Whereas only 12 per cent of women wanting additional children were using contraception, the proportion of users jumps to 49 per cent among those who want to cease childbearing. The same figures, however, show an apparent inconsistency between intention and behaviour on the part of a majority of women. Overall, 51 per cent of women wanting no more children are not using any method of contraception.

The level of consistency is lowest among wives of agricultural workers. It is highest among women living in metropolitan and urban lower Egypt, women with some education and wives of men in professional and clerical positions. Consistency has an intermediate level among women in the cities of Upper Egypt, and those married to manual and service workers.

This pattern suggests that variation in the degree of motivation of the desire to cease childbearing is an important component of the differentials in the level of consistency.

The analysis shows that those factors which lead to inconsistency between intention and behaviour seem to be weaker for the urban, the better educated and the younger women. Those factors are also much weaker in rural Lower Egypt than in rural Upper Egypt.

The target population for the family planning programme is the 57 per cent of currently married women who never used contraception. The findings show that resistance to family planning is extremely high in rural Upper Egypt; 71 per cent of currently married women do not intend to use contraception. The level of resistance drops to 34 per cent in urban Upper Egypt, 26 per cent in rural Lower Egypt, and to only 11 per cent in metropolitan and urban Lower Egypt.

These findings suggest that socio-economic development and family planning programme efforts are most effective when they go together. Nevertheless, it appears that adoption of family planning in Egypt can now gather its own independent momentum. This will be realized if the main tasks of the programme are formulated in terms of packages that incorporate multiple strategies simultaneously.

In metropolitan areas, Lower Egypt and urban Upper

Egypt, where 75 per cent of all currently married women live, there is an obvious need to energize and improve the efficiency of the family planning delivery system. In rural Upper Egypt, where the remaining 25 per cent of married women live, there is an urgent need to adopt strategies that would help in reducing the incidence of infant and child mortality, and in altering the motivation for large families.
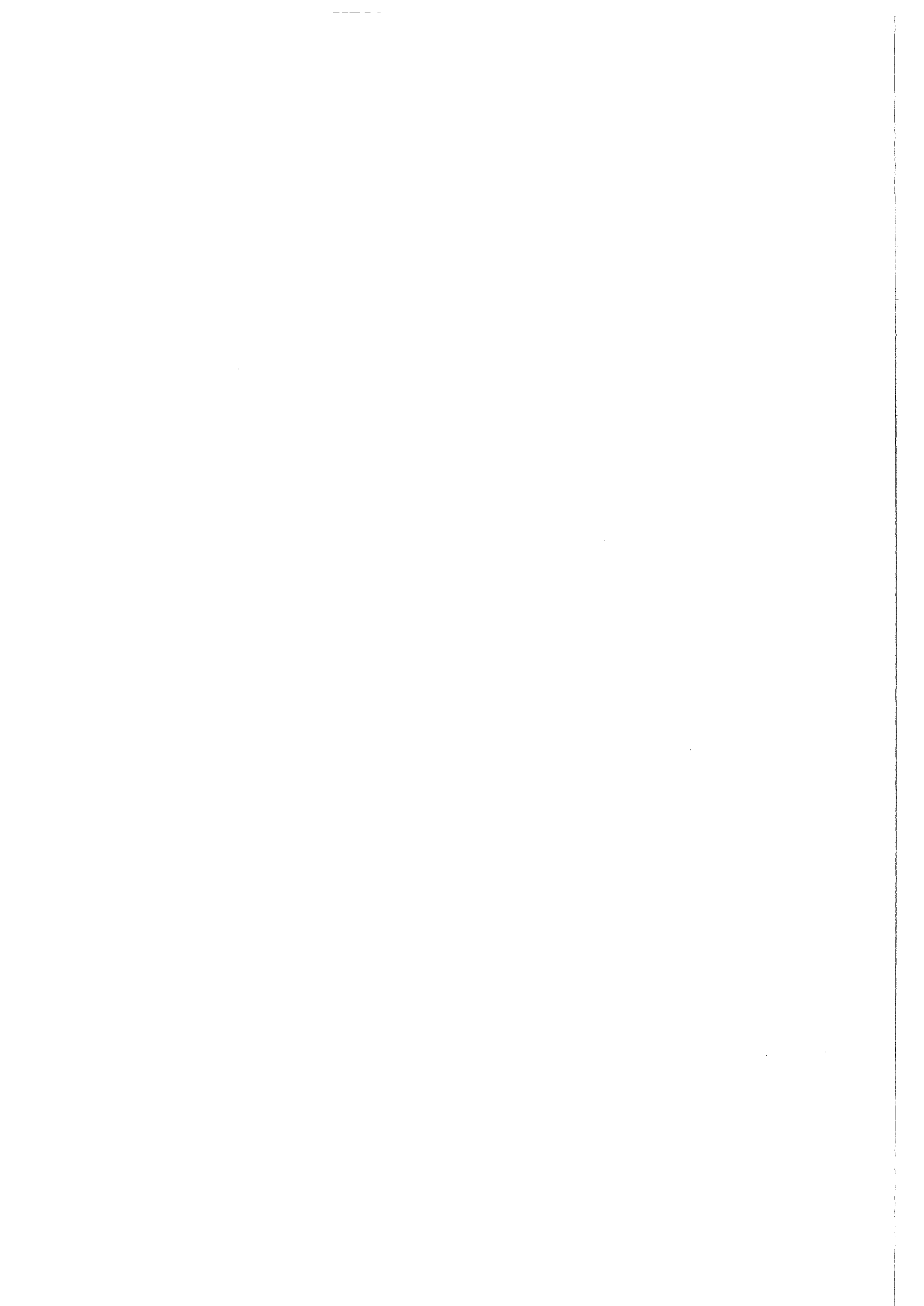
SUMMARY AND POLICY IMPLICATIONS

The results of the Egyptian Fertility Survey 1980 (EFS) are indicative of social change in Egypt on the broadest scale. Only a generation ago most of the changes revealed by this study were not thought possible or even feasible. This chapter provides a summary of the salient features of the demographic transition in Egypt as shown by the EFS findings presented in the preceding chapters.

Nuptiality

Over the last thirty years or so, average age at first marriage for females has risen by about three years. The singulate mean age at marriage in 1980 is estimated at 27.7 for males and 21.3 for females. Over the five-year period 1975–80, this mean for females has increased by one year. Accompanying the trend towards later marriage has been a tendency for first marriage to become spread over a wider age range. The net effect has been a change in first marriage pattern from an early-peak to a relatively early, broader and lower peak pattern.

These changes led to considerable shifts in the age composition of females by marital status, particularly among the younger cohorts. Thus, women of every age group under 45 years have shared in the long-term decline in the proportion ever married, but the decreases have been substantial at ages under 22. In fact, the decline in teenage marriages explains a large part of the recent changes in nuptiality in Egypt.

Age at first marriage is strongly associated with type of place and region of residence. The youngest marriage pattern is found in Upper Egypt and the oldest in Cairo and Alexandria. The data also show a definite positive relationship between level of education and age at first marriage. It may be inferred that increasing educational opportunities for young Egyptian women are largely responsible for the recent decline in early marriage and the upward trend in age at marriage particularly in urban areas.

About 16 per cent of all ever-married women reported dissolution of their first marriages. Divorce was the cause of dissolution of first marriage in 56 per cent of all dissolved marriages. The incidence of divorce is much higher among women who entered first marriage under age 20. However, about 54 per cent of women whose first marriages were dissolved had remarried by the time of the survey.

These changes in marriage patterns in Egypt must have had the effect of shifting tens of thousands of first marriages that ordinarily would have occurred at somewhat younger ages to the later ages of the nuptial span. This trend has altered the age pattern of births in Egypt for it has had the effect of decreasing marital exposure to childbearing by deflating the proportion of women who are potential mothers at teenages.

Fertility

The average number of children ever born for all ever-married women is 4.1, and for those aged 45–59 it is 6.9. Childlessness in the first few years of marriage is low. For women who first married at least five years ago, 62 per cent have had their first birth by the end of the second year of marriage, and the vast majority (89 per cent) have had at least one live birth before the end of the fifth year of marriage.

The mean number of children born in the first five years of marriage is 1.8. The results show that very little change, if any, has occurred in the tempo of early marital fertility over the last twenty years or so. Differences in the rate of childbearing appear mainly after the first five years of marriage and after the birth of the first two or three children.

The picture that emerges from the EFS data indicates that fertility in Egypt is still high. There are, however, substantial differences in recent fertility according to level of education of spouses, region of residence, and husband's occupation. The results show a strong association between level of education and both completed and incomplete fertility. The association is curvilinear for completed fertility and linear for the younger cohorts.

Husband's occupation is also related to recent fertility. The mean number of births in the past five years is significantly lower than average for women whose husbands are in professional and clerical occupations, about average for the wives of sales, service and manual workers and above average for the wives of agricultural workers and farmers.

Variations in recent fertility by region of residence is

quite substantial. A clustering of the regions puts Cairo and Alexandria together with the lowest fertility; followed by urban areas in Lower Egypt. Urban Upper Egypt and rural Lower Egypt belong in an intermediate group, while rural Upper Egypt is the clear extreme in terms of very high fertility.

There has been a significant decline in period fertility since the early 1960s. The total fertility rate dropped from 7.1 to 5.3 live births between 1960 and 1980. The major part of this decline occurred in the period 1960–75 in urban areas and in the period 1965–75 in rural areas. The decline in fertility since the mid-1970s has been of a very modest magnitude. The total fertility rate for 1979–80 is still as high as 5.3 live births.

When this pattern of decline in total fertility is compared with the recent rise in age at marriage and with the patterns of socio-economic differentials in cumulative fertility, it is possible to conclude that the decline in total fertility was initially caused by rising age at marriage and that this was followed by a period in which the two dimensions of total fertility, namely the proportion married among women of childbearing ages and the rates of marital fertility, have worked in such a way as to reinforce each other.

It appears, therefore, that Egyptian women start their childbearing experience at more or less the same pace regardless of their background characteristics. After an initial period of high fertility, certain groups of women start to regulate their fertility. These groups include women residing in Cairo, Alexandria and the urban areas of Lower Egypt, those with at least secondary education, and those with husbands who are in professional or clerical occupations.

Infant and child mortality

The levels of infant and child mortality in Egypt have declined significantly since the early 1950s, when nearly 190 out of every thousand children born alive had died in infancy and 360 out of every thousand before their fifth birthday. This compares with 130 infant deaths per thousand live births, and 190 deaths per thousand live births in the first five years of life, for children exposed to the mortality conditions of the late 1970s. This reduction in mortality appears to have been especially pronounced between the early 1950s and the mid-1960s. Thereafter, a much more gradual decline in mortality, especially in infancy, is observed.

There are substantial differentials in infant and child mortality, most notably according to region of residence. It is lowest in Alexandria and highest in the rural areas of Upper Egypt. Low mortality, especially in the age group one to five years, is also to be found among children of women who have a primary education or whose husbands have a secondary education, and among women whose husbands are in professional or clerical occupations.

The EFS data also show that the level of mortality, at all ages of childhood, is much higher among children born to teenage women than among those born to women aged 20 years or more. Further, women who have a large number of children at short intervals between subsequent pregnancies experience the highest levels of infant and child mortality.

There are substantial intra-regional differentials according to socio-economic status and reproductive factors, though the excess mortality in Upper Egypt dominates all other factors.

These differences in infant and child mortality are related to the observed variations in fertility and result in a marked diversity in the experience of family building among regional subgroups of the population.

Biological factors and fertility

Most infants in Egypt are breastfed and the duration of breastfeeding is fairly prolonged. Ninety-three per cent of children born at the beginning of the last closed birth intervals were breastfed, they were reported to have relied on breastmilk alone for nearly 11 months on average, and were aged nearly 17 months when they were weaned. Menstruation returned just over 8 months after the birth, and thus an extra 6 months was added on to the period of post-partum infecundability which would obtain in the absence of lactation.

It seems that modernization is associated with some decline in the proportion of infants who are breastfed, and who are breastfed for prolonged periods. The most educated women and those whose husbands were educated, for example, were least likely to breastfeed their children, and weaning occurs several months earlier among them than is the case for all Egypt. Similarly lactation is lower among women whose husbands work in the modern sector, while in the traditional agriculture sector the pattern of prolonged breastfeeding persists.

At the regional level also, a tendency to breastfeed fewer of their children, and to breastfeed them for shorter periods, was observed among women living in the modern urban areas of Egypt. The traditional pattern of universal and prolonged lactation, and some dependence on its contraceptive properties, appears to persist in rural areas, especially in Upper Egypt.

It therefore seems that only in the traditional sector does breastfeeding affect birthspacing, extending the period of non-susceptibility by several months, while the lower fertility in the modern sector is achieved through more deliberate and effective family planning.

Family size desires

Various dimensions of family size desires have been examined. Data on the perceived benefits and costs of children show a definite inverse association between socio-economic status of the mother and the perceived economic utility of children. Further, the greater the perceived economic utility of children, the lower the educational aspirations (especially for daughters), and the higher the fertility.

About 53 per cent of currently married, fecund women wanted to cease childbearing, 45 per cent wanted to have (more) children, and the remaining 2 per cent were undecided. The data indicate that three living children, age 28 and ten years of marriage are the effective points at which more than 50 per cent of women wish to limit their family size.

The overall desired family size is 4.1. Out of ten women, five desire to have 2 or 3 children, two desire to have 4 children, and three desire to have 5 or more children. The great majority of women with two or more living children stated a preference for a number larger than the number they have, while the majority with five or more children stated a preference for a number below their current family size. The proportion of women who want to have only between 2 and 4 children has increased over the last three decades from 59 per cent for women married in the 1950s to 71 per cent for those married in the 1960s, and to 75 and 80 per cent for women married during 1970–4 and 1975–9, respectively.

The most common type of sex preference is for a combination of a 'balanced' sex composition of boys and girls and 'son preference'. In general, Egyptian women consider it important to have at least one child of each sex; beyond that there is a preference for sons, but a large proportion would be content with either sex if the number of sons was equal to or greater than the number of daughters.

The results also reveal substantial socio-economic differentials in the determinants of desired family size. The general pattern is one of a definite inverse association between socio-economic status of the women and achieved fertility, economic utility of children and desired family size.

Family planning

Knowledge of contraception is widespread in Egypt; 90 per cent of all ever-married women know about at least one contraceptive method. The pill is by far the most widely recognized method (known by 89 per cent), followed by the IUD (80 per cent), and female sterilization (43 per cent). Traditional methods such as the rhythm and withdrawal are known by few women.

There are narrow socio-economic differentials in the level of awareness of contraception. The only significant exception is rural Upper Egypt, with a level of contraceptive knowledge of only 68 per cent.

About 40 per cent of all ever-married women have used at least one method. Ever-use of contraception, in contrast to knowledge, varies substantially by socio-economic variables. Type of locality, level of education, and husband's occupation are the characteristics most associated with ever-use.

Cairo, Alexandria and the cities and towns of Lower Egypt show levels of ever-use ranging from 63 to 70 per cent. The cities of Upper Egypt have a lower level of ever-use, 55 per cent. Rural Lower Egypt and the towns in Upper Egypt report similar levels of ever-use of over 30 per cent. Rural Upper Egypt shows the extremely low level of ever-use of 11 per cent.

This pattern of differentials in contraceptive ever-use suggests that most of the regional variation in current fertility can be accounted for by variations in both age at marriage and contraceptive practice.

The percentage of current users among 'all' currently married women is 24 per cent. The percentage of current users among 'exposed' women is 32 per cent. This proportion increases from 21 per cent for women with one living child, to 34, 37 and 40 per cent for those with 2, 3 or 4 living children, respectively.

The pill comprises 68 per cent of all current use, followed by the IUD (17 per cent) and other efficient methods (9 per cent), while traditional methods account for the remaining 6 per cent of all current use.

Differentials in current use of contraception by socio-economic variables follow very closely the differentials with respect to ever-use. Current use, for example, reaches 52 per cent among urban women, but only 16 per cent among rural women. Rural Upper Egypt has the lowest current use of only 6 per cent. In general, the differentials in current contraceptive use are in the same direction as differences in current fertility and family size desires.

The pattern of contraceptive use by birth intervals suggests a low contraceptive efficacy for spacing purposes, but high efficacy for termination of childbearing among certain socio-economic groups: the better educated, those living in metropolitan and urban Lower Egypt, and women whose husbands have non-agricultural occupations.

Availability of contraceptive services

The information collected in the EFS reveals that, although much progress has been made, awareness of contraceptive services was far from universal at the time of the survey. While most women were familiar with a source for at least one method, there was considerable variation throughout the country. Only 41 per cent of village women in Upper Egypt knew of any place where they could go, and given the levels of knowledge of the pill and the IUD as methods, knowledge of sources was low also in rural Lower Egypt. In all parts of the country, knowledge of where the IUD could be obtained lagged well behind knowledge of facilities offering the pill. Pharmacies and family planning centres were the principal types of source cited for the pill. For the IUD, private doctors, family planning centres and hospitals were mentioned about equally often, and other types of source were insignificant.

Most women in Cairo and Alexandria knew of sources for the pill that were very close by, whereas both the pill and IUD appeared to be particularly inaccessible to rural residents. The pill was thought to be available at a very low price and many women were aware that they could obtain an IUD free of charge.

The data also reveals that lack of availability has considerable potential to restrict family planning practice in rural areas.

The potential contraceptive demand

The results indicate that family planning still has far to go in Egypt, if a significant reduction in fertility, of the society as a whole, is to occur. Broadly speaking, the target population for the family planning programme is the 57 per cent of currently married women who never used contraception. This group represents as much as 89 per cent in rural Upper Egypt, 64 per cent in rural Lower Egypt, and 55 per cent in urban Upper Egypt. In metropolitan areas and urban Lower Egypt, the target population is much smaller, but still significant: 28 and 31 per cent, respectively.

Within each region, there are those who intend to adopt family planning in the future, and those who do not. Resistance to family planning is extremely high in rural Upper Egypt; 71 per cent of currently married women do not intend to use contraception. The level of resistance drops to 34 per cent in urban Upper Egypt, 26 per cent in rural Lower Egypt, and to only 11 per cent in metropolitan and urban Lower Egypt.

The regional range in the pattern of contraceptive use status can be broadly related to ranges in education, income distribution, access to health facilities, provision of family planning services, and many other variables that characterize aspects of the milieu in which the women of Egypt live and function.

Policy implications

One of the major objectives of the EFS was to provide planners and policy-makers with a comprehensive set of data suitable for evaluating alternative strategies for dealing with the complexities of the current demographic situation.

Egypt's policy with respect to rapid population growth and the balance it has maintained between direct and indirect measures has been influenced by two basic approaches: one which focuses on socio-economic development to stimulate fertility decline; and one which focuses on the delivery of family planning services. It is unfortunate that the debate over how much emphasis should be attached to each of these approaches has continually been cast in an either/or framework.

There is undoubtedly a need for both types of policies. Even if fertility should drop today to replacement levels, an average of two children for each couple of reproductive age, the population would continue to grow for about 40 years. This is because the number of young people entering their reproductive years substantially exceeds the number of people moving out of that period of life. Thus, even with no more than an average of two children per couple, the number of births each year would continue to exceed the number of deaths for about 40 years. This effect of age-structure is often referred to as the 'momentum of population growth'. It is not unreasonable to say that even under such a hypothetical situation of a replacement level of fertility, it will take several decades to transform Egypt from its present conditions to an advanced industrial state.

Fertility, however, will not drop suddenly to replacement level. At the current rate of annual population growth of about 2.7 per cent, the population of Egypt will double in about 25 years, climbing from 45 million in 1982 to 90 million in the year 2007.

This means that if Egypt were to double, during the

next twenty-five years or so, the cultivated land area, schools, hospitals, factories, etc, the standard of living of the average Egyptian citizen would not undergo any major improvement.

It has been argued that the future of the population of Egypt for the next twenty-five years has already been determined and can only be changed slightly through family planning efforts. It is, of course, true that the population will continue to grow whatever the state does to stimulate fertility decline. Nevertheless, what exists today no longer needs to dictate the *entire* future. It is possible to regulate this population growth so that the next doubling of the population takes place over a much longer period, 40 to 50 years say, instead of the 25 year period implied by the current growth level.

This regulation of population growth will be realized if steps are taken to increase motivation to reduce family size, and to energize and improve the efficiency of the family planning delivery system, particularly in rural areas.

The ultimate purpose of economic development is not merely to increase the total amount of goods and services produced — the gross national product — but to increase the standard of living and the quality of life of the individual citizen, including the value of goods and services available per person. It is, thus, obvious that both intensive development programmes and efficient family planning services are needed. The two policies are not substitutes. Semantic debates about distinguishing cause from effect will lead the country nowhere in solving

the complexities of its current demographic and economic situation.

Further, after three decades of national development efforts and 17 years or so of official family planning programme experience, it appears that acceptance and adoption of family planning in Egypt can now gather its own independent momentum. This will be realized if the main tasks of the programme are formulated in terms of packages that incorporate multiple strategies simultaneously:

● In metropolitan areas, Lower Egypt and urban Upper Egypt, where 75 per cent of all currently married women live, there is an obvious need to energize and improve the efficiency of the family planning delivery system.

● In rural Upper Egypt, where the remaining 25 per cent of married women live, there is an urgent need to adopt strategies that would help to reduce the incidence of infant and child mortality, and to alter the motivation for large families.

In the concluding chapter of volume III of this report, a detailed account of the policy implications of the EFS findings will be presented. The proposed changes conform to the basic philosophies of the state and the fundamental institutions of Egyptian society. But in terms of policies and execution there is an urgent need for alternative packages to be considered. Whatever alternatives are considered, it is obvious that a comprehensive population strategy is bound to require a wide range of reforms and policies carefully co-ordinated.
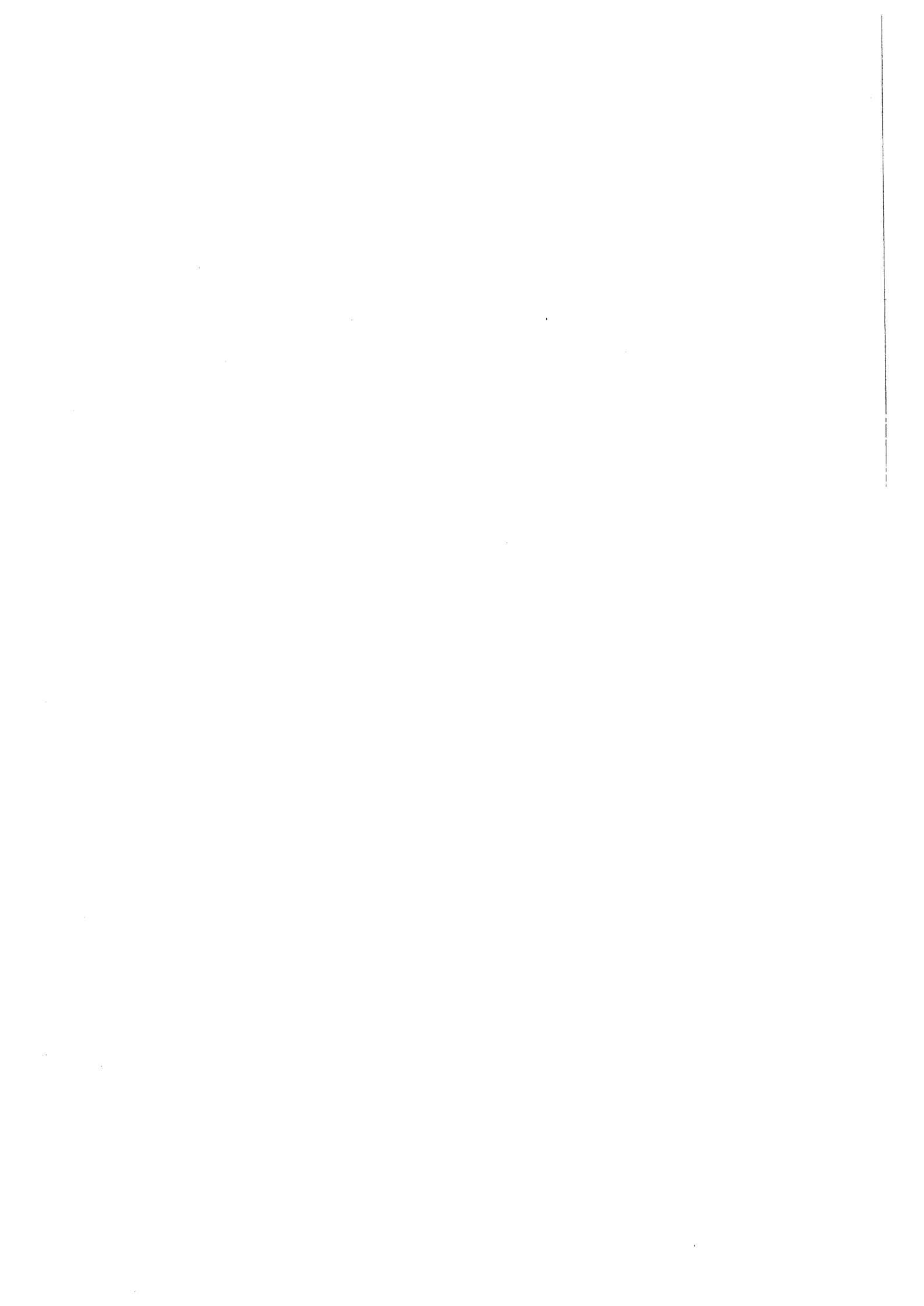
SAMPLING ERRORS FOR SELECTED ESTIMATES

Section I.1 introduces certain basic ideas about sampling errors; readers already familiar with them may skip to section I.2. Section I.3 presents procedures for approximating sampling errors when sampling errors are not given and the computational formulae used in the sampling error calculations.

I.1 INTRODUCTION

Interpretation of sampling errors

The particular sample obtained in the survey is one of a large number of all possible probability samples which could have been selected using the given sample design. The estimates derived from different samples would differ from each other. However, apart from non-sampling errors and bias, all estimates considered in this study are approximately unbiased, meaning that the true population value of interest is approximated by an average of the estimates from the various possible samples. This average from different samples is called the 'expected value'. The sampling error or standard error of an estimate is a measure of the (absolute) difference between the observed sample estimate and the expected value of the estimate. Apart from non-sampling errors, the standard error in the present context measures the size of the expected (absolute) deviation of the sample estimate from the true population value of interest.

A common and convenient criterion asserts that the true value lies within a range of twice the standard error on either side of the sample value. The range (sample value) ± 2 (standard error) is called the '95 per cent confidence interval', and one can say that the odds are only one in twenty that the true value lies outside this range. If, for example, the observed sample mean for a variable is 3.5 and if the standard error (to an appropriate sample base) has been estimated as 0.2, then the '95 per cent confidence interval' is $3.5 \pm 2(0.2)$, ie 3.1 to 3.9, and for practical purposes, ie with 95 per cent confidence, one asserts that (apart from non-sampling errors) the true population value of interest lies in the range 3.1 to 3.9.

Computation of sampling errors

One of the advantages of a probability sample such as the present one is that the sampling errors can be estimated from the results of the one sample which is actually available.

The computational procedure must take into account the actual structure of the sample and in particular the fact that the sample is a stratified clustered sample. The results given in this appendix have been computed by using the WFS package program CLUSTERS. An outline of the procedure for estimating sampling errors is given in section I.3 below.

Sampling errors for subclasses and subclass differences

To be useful in the interpretation of the substantive results presented in the form of detailed cross-tabulations, sampling errors for each of the important variables have to be computed over various subclasses of the sample. By subclass is meant a subset of the sample cases defined in terms of characteristics such as individual age or marriage duration groups, or groups by socio-economic background, etc. Due to the smaller sample bases involved, sampling errors for individual subclasses obviously tend to be larger than the error in an estimate based on the entire sample.

The computational formulae given in section I.3 below apply also for estimates computed over a particular subclass of the sample. Individuals or primary sampling units (PSUs) not belonging to the subclass are simply ignored in the computation. Interpretation of the standard error in terms of the '95 per cent confidence interval' given above applies equally to the whole sample as well as to any particular sample subclass.

Sampling errors for differences between subclass means can be particularly relevant in the interpretation of fertility and other differentials observed from the survey results. These determine the likelihood that an observed difference is real and not caused merely by sampling variation. Even for a relatively 'efficient' sample such as the present one, many observed differentials may not be statistically significant once the sample has been subdivided by the introduction of necessary control variables.

For differences between subclass means, we may regard an observed difference to be 'statistically significant' if the magnitude of the difference is not smaller than

twice its standard error. 'Statistically significant', of course, does not necessarily mean substantively significant or meaningful; it implies rather that the observed difference is real in the sense that it is unlikely to be caused merely by sampling variation. If the magnitude of the observed difference is smaller than twice its standard error, we may take it to be statistically (and hence substantively) 'not significant', implying that it cannot be asserted that the observed difference is not caused merely by sampling variation.

If, for example, for two sample subclasses being compared, the observed subclass means for a variable are 3.0 and 3.5 respectively, and if for the difference of the two means $(3.5 - 3.0 = 0.5)$, the standard error has been computed to be 0.1, then the '95 per cent confidence interval' for the difference is $0.5 \pm 2(0.1)$, that is, 0.3 to 0.7. In this example, one may assert that the true difference lies in the range 0.3 to 0.7. The observed difference is 'statistically significant' (the observed magnitude of the difference, 0.5, is greater than twice the standard error).[1] Now, if in the above example the standard error for the difference was 0.4, the '95 per cent confidence interval' for the difference would be $0.5 \pm 2(0.4)$, that is, -0.3 to 1.3. In this second case, it cannot be asserted that the observed difference is real, and not caused merely by sampling variation. Note that in the second example, the observed difference (0.5) is smaller than twice its standard error (0.8), which is the same as the observation that the '95 per cent confidence interval' includes the value zero.

Effect of clustering of the sample

In the present sample, the individuals interviewed are clustered into a number of sample areas. Compared to a sample of individuals selected entirely at random, clustering tends to reduce efficiency of the sample (ie increase associated sampling errors, for a given sample size). This is because individuals from within a cluster tend to be more uniform compared to individuals in the sample (or the population) as a whole. In a sense, less new information is obtained by interviewing a number of individuals from the same sample area as compared to that obtained from an entirely random sample of the same size.

A measure comparing the standard error of an estimate from the actual clustered sample with what the error would have been had the sample been selected

[1]This assertion can be made with 95 per cent confidence. Incidentally, it follows, with even greater confidence, that in the example the difference is not zero — in other words, that the two subclasses differ for the variable concerned. Sampling errors for differences are often used in this way to test whether two subclasses differ.

entirely at random is called the 'design factor' or DEFT.

$$DEFT = SE/SR \qquad (1)$$

where SE is the standard error for the clustered sample (computed from equation (2) given in section I.3), and SR is the standard error computed as if the sample had been selected entirely at random (equation (3) in section I.3).

For a particular sample design, cluster size, and variable, DEFT is a measure of the loss of sampling precision due to clustering of the sample. The two main factors on which its magnitude depends are the average cluster size and the relative homogeneity (corresponding to a particular variable) within these clusters.

For samples (or subclasses thereof) with very small clusters, or for variables with little within-cluster homogeneity, DEFT can be expected to approach unity, which implies that little sampling precision has been lost through clustering.

The last point mentioned above is of particular relevance in the present context where sampling errors for sample subclasses or subclass differences, rather than for the sample as a whole, are the main concern. The effective cluster sizes for sample subclasses, and specially for their differences, can be much smaller than the cluster sizes for the total sample, making DEFT smaller (nearer unity), that is, making the loss in sampling efficiency due to clustering generally less significant than would be the case if estimates based on the total sample were the main objective of the survey.

I.2 DISCUSSION OF THE MAIN RESULTS

The WFS package program CLUSTERS has been used to compute sampling errors for variables of substantive interest. For each variable, sampling errors were computed over the whole sample, as well as for various subclasses and differences for pairs of subclasses.

Definition of the variables

Sampling errors have been computed for the following variables based on the individual questionnaire:

1. Age at first marriage — Mean age at first marriage for ever-married women aged 15–49.

2. Age at first marriage (<25) — Mean age at first marriage for women aged 25–49 who married before age 25.

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3. First marriage dissolved — Percentage of ever-married women whose first marriage was dissolved.

4. Time spent in union — Percentage of time spent in union since first marriage.

5. Currently married — Percentage of ever-married women who are currently married.

6. Births in first five years — Mean number of births before or during the first five years of first marriage, for women married at least five years ago.

7. Births in past five years — Mean number of births during the past five years, for women who have been continuously married in the past five years.

8. Currently pregnant — Percentage of currently married women who are currently pregnant.

9. Children ever born — Mean number of children ever born to all women.

10. Living children — Mean number of living children born to all women.

11. Additional children wanted — Mean additional number of children wanted by currently married, fecund women.

12. Breastfed last closed interval — Percentage of women who breastfed in the last closed pregnancy interval.

13. Months breastfed in closed interval — Mean number of months breastfed in the last closed pregnancy interval (until child died cases excluded from base).

14. Wants no more children — Percentage of currently married, fecund women who want no more children.

15. Desired family size — Mean total of children desired by currently married women.

16. Knows an effective method — Percentage of all women who have heard of at least one effective method of contraception.

17. Ever used contraceptives — Percentage of all women who have ever used any method of contraception.

18. Ever used any effective method — Percentage of all women who have ever used any effective method of contraception.

19. Currently using (exposed) — Percentage of non-pregnant, currently married, fecund or contraceptively sterilized women who are currently using any method of contraception.

20. Using effective (exposed) — Percentage of non-pregnant, currently married, fecund or contraceptively sterilized women who are currently using any effective method of contraception.

21. Wants no more and using eff. (exp) — Of non-pregnant, currently married, fecund or contraceptively sterilized women who want no more children, the percentage who are currently using any effective method of contraception.

22. Never used contraception — Percentage of ever-married women who have never used contraception.

23. Used contraception in past — Percentage of ever-married women who have used contraception in the past.

24. Currently using contraception — Percentage of ever-married women who are currently using contraception.

Estimates over the total sample

Table I.1 shows sampling errors computed over the total sample for the variables based on the individual questionnaire. For each variable the following quantities are shown.

$r =$ the ratio, mean, proportion or percentage estimated for the whole sample. Note that estimates given as proportions may be changed to percentages by shifting the decimal point two places to the right. In such cases, the standard errors given for the proportions must be multiplied by 100 to correspond to percentages. Similarly, estimates given as percentages may be changed to proportions by shifting the decimal point two places to the left. In such cases, the standard errors given for the percentages must be divided by 100 to correspond to proportions.

$SE =$ standard error for the actual clustered sample (defined by equation (2) given below).

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95% CON. INT. = the '95 per cent confidence interval', defined earlier as $r \pm 2SE$.

n =   the appropriate unweighted sample base. The sample for Egypt consists of 8788 completed individual interviews. However, only a minority of the variables are defined for the entire sample of 8788 women. Many of the variables are relevant only for subpopulations satisfying certain criteria; for example, the variable 'births in past five years' has been defined only for the 6003 women who have been continuously married for the past five years.

s =   standard deviation, defined as $s = SR \sqrt{n}$, where SR is the standard error computed on the assumption that the sample of individuals was selected entirely at random. Though s is estimated from the sample results, it is a characteristic of the study population, not of a particular sample design or sample size.

DEFT = the Design Factor, DEFT = SE/SR (as equation (1) above). It measures the sampling efficiency lost due to clustering of the sample. DEFT values near unity imply that little has been lost by clustering of respondents into sample areas.

b =   the average 'cluster size', ie the (unweighted) average number of interviews per PSU. For the sample as a whole, $b = 8788/200 = 43.9$. The value is smaller if a variable is not applicable to all individuals in the sample. (Note that the average cluster size can be used to calculate rates of homogeneity — see equation (6) below.)

For the total sample, sampling errors for variables taken from the individual questionnaire are relatively small — under 4 per cent of the mean.[2] However, the DEFT values encountered are relatively large. The overall average DEFT is around 1.44, implying that the variance (the square of the standard error) is 2.06, slightly more than twice as large as it would have been for a sample of the same size selected entirely at random. DEFT for the variables concerning contraception tend to be somewhat larger than the average for the other groups of variables.

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[2]Of the twenty-four variables considered, the standard error over the sample is under 1 per cent of the mean for nine between 1 and 2 per cent for five, between 2 and 3 per cent for six and between 3 and 4 per cent for four.

I.3 SOME TECHNICAL CONSIDERATIONS

Computational formulae

In outline, the procedure used for estimating sampling errors for a stratified clustered sample is as follows.

Consider a ratio statistic $r = y/x$, where y and x are two variables the ratio of which is being estimated. (The procedure also applies to estimates like means, proportions or percentages which can be regarded as special cases of ratios.) Let the suffix j represent an individual, suffix i the PSU to which the individual belongs, and suffix h the stratum in which the PSU lies. Hence,

y_{hij} = value of variable y for the individual j, in PSU i and stratum h

w_{hij} = sample weight for the individual

$y_{hi} = \sum_j w_{hij} \cdot y_{hij}$, the weighted sum of y's for all individuals in the PSU

$y_h = \sum_i y_{hi}$, the sum of y_{hi} for all PSUs in the stratum

$y = \sum_h y_h$, the sum of y_h for all strata in the sample.

Similar expressions can be defined for variable x.

The variance ($= SE^2$, square of the standard error) of the ratio estimate $r = y/x$ is estimated as

$$SE^2 = \text{var}(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

(2)

where

f =   overall sampling fraction, here negligible

m_h = number of PSUs in the stratum h

H =   number of strata in the sample

r =   ratio of the two sample aggregates y and x

$z_{hi} = y_{hi} - r \cdot x_{hi}$

$z_h = \sum_i z_{hi} = y_h - r \cdot x_h$

Equation (2) applies also for estimates computed over a particular subclass of the sample. Individuals or PSUs or strata not belonging to the subclass are simply ignored

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in the computation. The summations $\sum$ are taken over only the units belonging to the subclass being considered.

SR, the standard error of a ratio estimate r corresponding to an equivalent sample selected entirely at random, is required to estimate DEFT = SE/SR, and is given by

$$SR^2 = \frac{1-f}{n-1} \left(\sum w_{hij} \, z_{hij}^2 / \sum w_{hij} \right) \tag{3}$$

where $z_{hij} = y_{hij} - r \cdot x_{hij}$

and r is the ratio estimate,

$$r = y/x = \sum w_{hij} \, y_{hij} / \sum w_{hij} \, x_{hij}$$

n is the total sample size, and $\sum$ is the sum for all individuals over the sample. As before, means, proportions, or percentages are merely special cases of ratios.

The variance of the difference of two subclass means for a stratified clustered sample is given by the following formulae. Denoting the second subclass in the pair by a prime ('),

$$SE_{r-r'}^2 = var(r-r') = var(r) + var(r') - 2cov(r,r') \tag{4}$$

where var(r) and var(r') are given by equation (2) and the covariance is given by

$$cov(r,r') = \frac{1-f}{xx'} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi} \cdot z_{hi}' - \frac{z_h z_h'}{m_h} \right) \right] \tag{5}$$

Usually cov(r,r') is positive due to positive correlation between individuals in the two subclasses who belong to the same cluster in the sample.

Rates of homogeneity (ROH), which indicate to what extent responses for a particular variable are more homogeneous within PSUs than in the sample as a whole, may be calculated from the average PSU size and DEFT. ROH is calculated as:

$$ROH = \frac{DEFT^2 - 1}{b - 1} \tag{6}$$

where b is the mean PSU size.

Strata needed for the sampling errors computations

Before selection of a sample, the population is usually divided into a number of parts called strata which are expected to be homogeneous in some way, and PSUs are then selected from each stratum independently. The aim of stratification is to reduce sampling errors, or sometimes to permit a change in sample design or sampling rate between strata. It should be noted that the strata used for computation of sampling errors are not necessarily identical to the original explicit strata used in sample selection. The difference between the two may arise for two main reasons.

1   Whenever PSUs are selected by systematic sampling from an ordered list, ie selection at a fixed interval from a list starting from a randomly determined point, neighbouring selected PSUs should be grouped, two at a time if possible, three if not, within explicit strata to form new smaller 'implicit' strata which are used for sampling error computations. In the case of an explicit stratum in which an odd number of PSUs (greater than 3) have been selected by systematic sampling, there will be a choice to be made as to where in the ordered list to make the grouping of three. A simple rule for this is as follows. Look for the smallest sized PSU. If this is at the beginning (end) of the list in that explicit stratum, make the group of three the first (last) three members of the list. Otherwise, make the group of three around the smallest PSU and the smaller of its two neighbours, bearing in mind that the first member of any group (whether of two or of three) must be odd-numbered as counted from the beginning of the list in that explicit stratum.

2   Sampling error computations require that there be at least two PSUs per stratum. Any strata from each of which only one PSU has been selected must be 'collapsed' together to form pairs (or other groups) of PSUs. Such grouping is done on the basis of characteristics of the whole strata population (pairing most similar strata), and not on the characteristics of selected PSUs. Collapsing of strata in this way tends to lead to slight overestimation of the sampling error.

For CLUSTERS, the strata to be defined are obviously those which are to be used for sampling error computations and these strata are identified on the WFS standard recode tapes. The original explicit strata, if they differ from the above, are of no interest.

Approximating standard errors when standard errors are not given

Approximating standard errors for sample subclasses

Under the assumption that only the size of a subclass,

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not its nature, affects the sampling error, the standard error for a subclass of any size is well approximated from the results computed over the total sample as follows. We use the suffix t to refer to the total sample (of size n_t) and the suffix s to refer to any subclass (of size n_s). The approximate relationship (empirically valid in an approximate sense)

$$SE_s = f_s \cdot SE_t \tag{7}$$

where f_s is a factor determined semi-empirically as

$$f_s = \left[\left(\frac{n_t}{n_s} \right) + \left(\frac{n_t}{n_s} \right)^{2/3} \cdot (DEFT_t^2 - 1) \right]^{1/2} / DEFT_t \tag{8}$$

can be used to approximate the standard error for a sample subclass. Note that f_s depends only on the results for the total sample and the proportion of the sample belonging to the subclass. Note that the above equations are applied separately to each of the substantive variables of interest. For certain variables, eg the mean number of children ever born, these equations were found inadequate for predicting SEs for certain subclasses and the values determined from the above equations required some adjustment to make them better correspond to the results actually computed. Those variables strongly related to the life-cycle, ie to age or marriage duration, have a standard error which is obviously related to the mean or proportion being estimated, which in turn varies considerably from one subclass to another. Nevertheless we find that in these particular cases, the exceptional subclasses (with, say, an exceptionally low value of the mean or proportion for the variable) can be dealt with by multiplying SEs by a simple adjustment factor such as 0.5.

Approximating standard errors for subclass differences

The standard error for subclass differences can be ap-proximated by assuming that the standard error for the difference is mid-way between two limits: the higher limit assuming that there is no covariance term in equation (4) (actually the covariance is generally positive), and the lower limit assuming that there is no effect at all of clustering of the sample. The procedure is based on the assumption that equations (7) and (8) are valid also for the standard error of the difference of two subclass means if n_s in (8) is replaced by n_d, half the harmonic mean of the two subclass sizes, ie

$$n_d = \frac{n_1 \cdot n_2}{n_1 + n_2} \tag{9}$$

Note that the upper and lower limits are usually not widely apart in practice, since n_d tends to be much smaller than n_s.

Variation of DEFT with subclass size

Under the assumption that only the size of a subclass, not its nature, affects the sampling error, equations (7) and (8) are equivalent to:

$$\frac{DEFT_s^2 - 1}{DEFT_t^2 - 1} = (n_s/n_t)^{1/3} \tag{10}$$

Equation (10) implies that for small subclasses, ie sub-classes with size n_s much smaller than n_t, DEFT for the subclass tends to one. In other words, loss in sampling precision due to clustering of the sample tends to become smaller for smaller subclasses. In the present context, this means that where survey estimates for relatively small subclasses such as five-year age of marriage cohorts are of major interest, the effect of clustering of the sample tends to be relatively less important. For example, for a subclass with $n_s/n_t = 0.1$ and $DEFT_t = 2.0$, the corresponding $DEFT_s$ is around 1.5.

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Table I.1 - Sampling errors over the total sample

Variable name	Mean or per cent	SE	Mean or per cent -2SE	Mean or per cent +2SE	n	s	DEFT	b
Age at first marriage	17.75	.08	17.60	17.90	8765	3.84	1.84	43.8
Age at first marriage (<25)	17.28	.06	17.15	17.40	6075	3.17	1.55	30.4
First marriage dissolved	16.36	.45	15.46	17.27	8788	37.00	1.15	43.9
Time spent in union	94.29	.22	93.86	94.73	8788	18.67	1.09	43.9
Currently married	91.17	.31	90.54	91.80	8788	28.38	1.04	43.9
Births in first 5 years	1.84	.02	1.81	1.87	6872	1.01	1.28	34.4
Births in past 5 years	1.21	.02	1.18	1.25	6003	1.07	1.32	30.0
Currently pregnant	15.35	.44	14.47	16.23	8012	36.05	1.09	40.1
Children ever born	4.13	.04	4.06	4.20	8788	3.06	1.10	43.9
Living children	3.14	.03	3.08	3.19	8788	2.27	1.10	43.9
Additional children wanted	1.36	.05	1.26	1.46	6935	2.49	1.63	34.7
Breastfed last closed interval	92.98	.37	92.25	93.71	6791	25.56	1.18	34.0
Months breastfed closed interval	17.03	.17	16.68	17.37	6791	11.54	1.23	34.0
Wants no more children	53.14	.75	51.65	54.63	7288	49.90	1.28	36.4
Desired family size	4.10	.06	3.99	4.21	7880	2.66	1.84	39.4
Knows an effective method	89.66	.60	88.46	90.86	8788	30.45	1.85	43.9
Ever used contraceptives	39.85	.95	37.94	41.76	8788	48.96	1.82	43.9
Ever used any effective method	38.89	.95	36.99	40.80	8788	48.75	1.83	43.9
Currently using (exposed)	31.89	.93	30.02	33.76	6058	46.61	1.56	30.3
Using effective (exposed)	30.01	.92	28.17	31.85	6058	45.83	1.56	30.3
Wants no more and using eff.(exp)	45.81	1.21	43.39	48.22	3268	49.83	1.38	16.3
Never used contraception	59.98	.96	58.07	61.89	8750	49.00	1.82	43.8
Used contraception in past	17.86	.54	16.78	18.95	8750	38.31	1.32	43.8
Currently using contraception	22.16	.71	20.75	23.57	8750	41.53	1.59	43.8

Table I.2a – Sampling errors by current age

Variable name	<20 Mean or per cent	SE	n	DEFT	20-24 Mean or per cent	SE	n	DEFT	25-29 Mean or per cent	SE	n	DEFT	30-34 Mean or per cent	SE	n	DEFT
Age at first marriage	16.03	.07	655	1.01	17.44	.10	1598	1.58	18.54	.11	1696	1.25	18.18	.13	1523	1.25
Age at first marriage (<25)	.00	.00	0	.00	.00	.00	0	.00	18.02	.10	1590	1.24	17.43	.10	1408	1.20
First marriage dissolved	6.93	.96	678	.99	8.70	.68	1598	.97	12.15	.79	1696	1.00	15.17	1.04	1523	1.13
Time spent in union	95.40	.85	678	1.08	96.04	.41	1598	1.02	95.66	.37	1696	1.01	96.31	.33	1523	1.04
Currently married	95.87	.82	678	1.07	95.49	.50	1598	.96	94.63	.52	1696	.95	93.57	.60	1523	.95
Births in first 5 years	1.32	.15	38	.82	1.78	.03	762	.98	1.81	.02	1336	.95	1.87	.03	1462	1.01
Births in past 5 years	1.93	.24	28	.98	1.99	.04	678	1.06	1.81	.03	1215	.94	1.43	.03	1333	1.00
Currently pregnant	27.08	2.12	650	1.21	23.33	1.06	1526	.98	20.87	.96	1605	.95	14.53	.90	1425	.97
Children ever born	.63	.03	678	.94	1.81	.04	1598	1.27	3.07	.05	1696	1.09	4.61	.06	1523	1.05
Living children	.51	.02	678	.90	1.49	.03	1598	1.20	2.48	.04	1696	1.05	3.61	.04	1523	.96
Additional children wanted	3.42	.12	620	1.03	2.18	.09	1408	1.33	1.25	.08	1490	1.35	.89	.07	1328	1.10
Breastfed last closed interval	89.31	2.73	131	1.01	92.68	.83	970	.99	91.37	.73	1368	.97	92.16	.73	1378	1.00
Months breastfed closed interval	14.21	.81	131	.94	15.56	.42	970	1.19	15.53	.29	1368	1.01	16.58	.33	1378	1.07
Wants no more children	5.25	.89	648	1.02	25.75	1.17	1503	1.04	50.80	1.40	1571	1.11	67.85	1.45	1381	1.15
Desired family size	4.19	.12	637	1.01	3.84	.09	1502	1.33	3.68	.07	1582	1.24	4.01	.09	1406	1.28
Knows an effective method	79.65	1.88	678	1.21	87.67	1.12	1598	1.36	91.86	.62	1696	.94	92.91	.89	1523	1.36
Ever used contraceptives	5.90	.85	678	.94	24.09	1.31	1598	1.22	43.40	1.53	1696	1.27	51.54	1.69	1523	1.32
Ever used any effective method	5.75	.83	678	.93	23.47	1.28	1598	1.21	42.81	1.53	1696	1.27	50.69	1.71	1523	1.33
Currently using (exposed)	5.30	1.01	472	.98	17.52	1.10	1147	.98	31.63	1.59	1236	1.20	39.95	1.51	1174	1.06
Using effective (exposed)	5.08	.99	472	.98	16.83	1.05	1147	.95	30.34	1.60	1236	1.22	38.50	1.59	1174	1.12
Wants no more and using eff.(exp)	20.00	10.33	15	.97	32.39	2.70	247	.91	44.15	2.28	598	1.12	49.50	1.87	798	1.06
Never used contraception	94.08	.85	676	.94	75.76	1.32	1588	1.22	56.50	1.54	1692	1.27	48.32	1.68	1519	1.31
Used contraception in past	2.22	.56	676	.98	11.59	.95	1588	1.18	20.39	.96	1692	.98	20.74	1.21	1519	1.17
Currently using contraception	3.70	.72	676	.99	12.66	.83	1588	.99	23.11	1.23	1692	1.20	30.94	1.29	1519	1.09

Variable name	35-39 Mean or per cent	SE	n	DEFT	40-44 Mean or per cent	SE	n	DEFT	45-49 Mean or per cent	SE	n	DEFT
Age at first marriage	17.62	.13	1329	1.13	17.64	.16	1061	1.18	17.67	.20	903	1.21
Age at first marriage (<25)	16.91	.10	1244	1.11	16.81	.11	988	1.17	16.73	.12	845	1.14
First marriage dissolved	20.62	1.14	1329	1.02	23.56	1.35	1061	1.04	32.23	1.63	903	1.05
Time spent in union	94.52	.40	1329	.99	93.37	.57	1061	1.10	92.02	.57	903	1.00
Currently married	89.09	.86	1329	1.01	85.58	1.09	1061	1.01	79.07	1.21	903	.89
Births in first 5 years	1.87	.03	1319	1.12	1.89	.03	1058	.99	1.77	.03	897	.95
Births in past 5 years	1.00	.03	1149	1.12	.53	.03	898	1.02	.19	.02	702	1.00
Currently pregnant	9.80	1.04	1184	1.21	3.41	.68	908	1.13	1.26	.41	714	.99
Children ever born	5.79	.09	1329	1.18	6.46	.10	1061	1.07	6.87	.12	903	1.13
Living children	4.38	.06	1329	1.03	4.71	.07	1061	1.00	4.77	.08	903	1.02
Additional children wanted	.64	.07	1049	1.25	.50	.06	693	.87	.50	.13	347	1.24
Breastfed last closed interval	94.25	.76	1217	1.14	95.14	.69	947	.99	93.59	.88	780	1.01
Months breastfed closed interval	18.33	.33	1217	.99	18.77	.38	947	.95	18.61	.46	780	1.04
Wants no more children	75.59	1.39	1098	1.07	80.85	1.58	726	1.08	83.10	2.12	361	1.07
Desired family size	4.44	.10	1160	1.29	4.48	.11	892	1.12	4.62	.11	701	.95
Knows an effective method	90.74	.96	1329	1.21	90.10	1.01	1061	1.10	88.93	1.36	903	1.31
Ever used contraceptives	49.74	1.64	1329	1.20	48.07	1.60	1061	1.04	42.64	1.92	903	1.17
Ever used any effective method	48.68	1.62	1329	1.18	46.28	1.61	1061	1.05	40.75	1.94	903	1.18
Currently using (exposed)	41.14	1.68	982	1.07	43.45	2.05	695	1.09	39.77	2.78	352	1.07
Using effective (exposed)	38.09	1.66	982	1.07	39.57	1.93	695	1.04	35.51	2.73	352	1.07
Wants no more and using eff.(exp)	47.80	2.16	749	1.18	48.23	2.03	566	.97	42.03	3.11	295	1.08
Never used contraception	50.00	1.63	1322	1.19	51.61	1.60	1054	1.04	57.17	1.93	899	1.17
Used contraception in past	19.44	1.24	1322	1.13	19.54	1.20	1054	.98	26.81	1.55	899	1.05
Currently using contraception	30.56	1.42	1322	1.12	28.84	1.44	1054	1.03	16.02	1.26	899	1.03

Table I.2a - Sampling errors by current age (cont.)

Variable name	<25 Mean or per cent	SE	n	DEFT	25-34 Mean or per cent	SE	n	DEFT	35-44 Mean or per cent	SE	n	DEFT	45-49 Mean or per cent	SE	n	DEFT
Age at first marriage	17.03	.09	2253	1.66	18.37	.10	3219	1.43	17.63	.11	2390	1.27	17.67	.20	903	1.21
Age at first marriage (<25)	.00	.00	0	.00	17.74	.08	2998	1.37	16.86	.08	2232	1.24	16.73	.12	845	1.14
First marriage dissolved	8.17	.59	2276	1.02	13.58	.66	3219	1.09	21.92	.95	2390	1.12	32.23	1.63	903	1.05
Time spent in union	95.94	.38	2276	1.06	96.04	.24	3219	1.01	93.95	.36	2390	1.08	92.02	.57	903	1.00
Currently married	95.61	.43	2276	1.00	94.13	.39	3219	.93	87.53	.72	2390	1.06	79.07	1.21	903	.89
Births in first 5 years	1.76	.04	800	1.04	1.84	.02	2798	.99	1.88	.02	2377	1.10	1.77	.03	897	.95
Births in past 5 years	1.98	.04	706	1.07	1.61	.02	2548	1.10	.80	.02	2047	1.15	.19	.02	702	1.00
Currently pregnant	24.45	1.01	2176	1.09	17.89	.74	3030	1.06	7.03	.63	2092	1.12	1.26	.41	714	.99
Children ever born	1.46	.03	2276	1.17	3.80	.05	3219	1.15	6.08	.07	2390	1.21	6.87	.12	903	1.13
Living children	1.20	.02	2276	1.08	3.01	.03	3219	1.12	4.53	.05	2390	1.05	4.77	.08	903	1.02
Additional children wanted	2.56	.08	2028	1.33	1.08	.06	2818	1.29	.58	.05	1742	1.09	.50	.13	347	1.24
Breastfed last closed interval	92.28	.80	1101	.99	91.77	.52	2746	.99	94.64	.55	2164	1.13	93.59	.88	780	1.01
Months breastfed closed interval	15.40	.41	1101	1.25	16.06	.24	2746	1.13	18.52	.25	2164	.96	18.61	.46	780	1.04
Wants no more children	19.57	.89	2151	1.04	58.77	1.08	2952	1.19	77.69	1.13	1824	1.16	83.10	2.12	361	1.07
Desired family size	3.94	.07	2139	1.30	3.84	.07	2988	1.49	4.45	.08	2052	1.34	4.62	.11	701	.95
Knows an effective method	85.28	1.18	2276	1.59	92.36	.54	3219	1.15	90.46	.74	2390	1.23	88.93	1.36	903	1.31
Ever used contraceptives	18.67	1.03	2276	1.26	47.25	1.33	3219	1.51	49.00	1.28	2390	1.26	42.64	1.92	903	1.17
Ever used any effective method	18.19	1.00	2276	1.24	46.54	1.33	3219	1.52	47.62	1.27	2390	1.25	40.75	1.94	903	1.18
Currently using (exposed)	13.96	.92	1619	1.06	35.68	1.20	2410	1.23	42.10	1.44	1677	1.19	39.77	2.78	352	1.07
Using effective (exposed)	13.40	.89	1619	1.05	34.32	1.21	2410	1.26	38.70	1.39	1677	1.17	35.51	2.73	352	1.07
Wants no more and using eff.(exp)	31.68	2.57	262	.89	47.21	1.52	1396	1.14	47.98	1.62	1315	1.18	42.03	3.11	295	1.08
Never used contraception	81.23	1.04	2264	1.26	52.63	1.33	3211	1.50	50.72	1.27	2376	1.24	57.17	1.93	899	1.17
Used contraception in past	8.79	.71	2264	1.20	20.55	.84	3211	1.18	19.49	.89	2376	1.09	26.81	1.55	899	1.05
Currently using contraception	9.98	.67	2264	1.06	26.81	1.00	3211	1.27	29.80	1.16	2376	1.23	16.02	1.26	899	1.03

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Table I.2b - Sampling errors by differences between current age subclasses

Variable name	(<25) - (25-34) Mean or per cent	SE	n	DEFT	(25-34) - (35-44) Mean or per cent	SE	n	DEFT	(35-44) - (45-49) Mean or per cent	SE	n	DEFT
Age at first marriage	-1.34	.11	2650	1.21	.74	.11	2743	1.00	-.04	.20	1310	1.08
Age at first marriage (<25)	-17.74	.08	0	1.37	.88	.08	2558	.94	.13	.13	1225	1.08
First marriage dissolved	-5.40	.84	2666	1.00	-8.35	1.11	2743	1.07	-10.30	1.73	1310	.98
Time spent in union	-.10	.45	2666	1.03	2.10	.44	2743	1.07	1.93	.63	1310	.97
Currently married	1.48	.57	2666	.96	6.60	.80	2743	1.01	8.46	1.30	1310	.86
Births in first 5 years	-.08	.04	1244	1.02	-.04	.03	2570	.89	.11	.03	1302	.83
Births in past 5 years	.37	.05	1105	1.18	.82	.03	2270	1.09	.61	.03	1045	1.01
Currently pregnant	6.56	1.30	2532	1.12	10.86	.90	2475	1.00	5.77	.76	1064	1.09
Children ever born	-2.34	.05	2666	1.10	-2.28	.07	2743	1.02	-.78	.11	1310	.92
Living children	-1.82	.04	2666	1.06	-1.51	.06	2743	1.02	-.25	.08	1310	.86
Additional children wanted	1.48	.08	2358	1.02	.50	.05	2153	.80	.09	.15	578	1.35
Breastfed last closed interval	.51	.94	1571	.97	-2.87	.67	2420	.94	1.05	.95	1146	.95
Months breastfed closed interval	-.65	.42	1571	1.08	-2.46	.30	2420	.91	-.08	.47	1146	.92
Wants no more children	-39.20	1.24	2488	.99	-18.91	1.32	2254	.99	-5.42	2.25	602	1.02
Desired family size	.11	.07	2493	1.00	-.62	.08	2433	1.11	-.16	.13	1045	1.01
Knows an effective method	-7.08	1.11	2666	1.27	1.90	.84	2743	1.10	1.53	1.38	1310	1.15
Ever used contraceptives	-28.58	1.46	2666	1.21	-1.75	1.48	2743	1.10	6.36	2.08	1310	1.07
Ever used any effective method	-28.35	1.44	2666	1.20	-1.08	1.48	2743	1.10	6.86	2.12	1310	1.10
Currently using (exposed)	-21.73	1.32	1936	1.02	-6.41	1.57	1977	1.01	2.33	2.80	581	.97
Using effective (exposed)	-20.91	1.29	1936	1.01	-4.38	1.55	1977	1.01	3.19	2.83	581	1.00
Wants no more and using eff.(exp)	-15.53	2.79	441	.88	-.78	1.93	1354	1.00	5.95	3.17	481	.99
Never used contraception	28.60	1.46	2655	1.21	1.92	1.46	2731	1.08	-6.46	2.08	1304	1.07
Used contraception in past	-11.76	1.05	2655	1.13	1.07	1.14	2731	1.05	-7.32	1.74	1304	1.03
Currently using contraception	-16.83	1.08	2655	1.08	-2.98	1.25	2731	1.03	13.78	1.50	1304	.97

Table I.3a - Sampling errors by age at first marriage

Variable name	<15 Mean or per cent	SE	n	DEFT	15-19 Mean or per cent	SE	n	DEFT	20-24 Mean or per cent	SE	n	DEFT
Age at first marriage	13.55	.02	1992	1.02	17.20	.03	4776	1.33	21.93	.03	1560	.93
Age at first marriage (<25)	13.52	.03	1559	1.03	17.21	.03	3235	1.22	22.03	.04	1281	.93
First marriage dissolved	26.35	.95	2015	.96	14.43	.56	4776	1.10	11.35	.89	1560	1.11
Time spent in union	93.32	.38	2015	1.02	94.82	.26	4776	.99	94.58	.62	1560	1.15
Currently married	88.49	.68	2015	.96	91.90	.41	4776	1.03	92.12	.80	1560	1.17
Births in first 5 years	1.69	.03	1863	1.17	1.91	.02	3731	1.14	1.87	.03	1027	1.01
Births in past 5 years	1.14	.03	1586	1.15	1.27	.02	3298	1.19	1.21	.03	899	.95
Currently pregnant	13.24	.74	1783	.92	16.04	.60	4389	1.08	15.87	1.03	1437	1.07
Children ever born	5.61	.08	2015	1.12	4.12	.05	4776	1.11	2.89	.06	1560	1.02
Living children	4.01	.06	2015	1.15	3.15	.04	4776	1.14	2.37	.04	1560	.95
Additional children wanted	1.41	.11	1465	1.54	1.43	.06	3813	1.41	1.15	.06	1299	1.03
Breastfed last closed interval	94.86	.50	1732	.95	93.50	.40	3724	.99	90.10	1.07	1091	1.18
Months breastfed closed interval	19.64	.33	1732	1.11	17.28	.19	3724	1.04	13.60	.33	1091	1.02
Wants no more children	58.55	1.75	1549	1.40	52.06	1.00	4022	1.27	52.19	1.56	1345	1.14
Desired family size	4.74	.10	1744	1.46	4.19	.06	4311	1.58	3.36	.06	1424	1.14
Knows an effective method	86.10	1.30	2015	1.68	89.61	.66	4776	1.49	92.69	.82	1560	1.25
Ever used contraceptives	35.53	1.40	2015	1.32	37.48	1.08	4776	1.54	48.85	1.44	1560	1.14
Ever used any effective method	34.84	1.41	2015	1.33	36.60	1.08	4776	1.55	47.44	1.41	1560	1.11
Currently using (exposed)	26.73	1.38	1313	1.13	28.75	1.13	3318	1.44	42.17	1.66	1117	1.12
Using effective (exposed)	25.67	1.35	1313	1.12	27.34	1.13	3318	1.46	39.03	1.57	1117	1.08
Wants no more and using eff.(exp)	40.18	1.82	779	1.03	43.83	1.49	1750	1.26	55.35	2.07	589	1.01
Never used contraception	64.24	1.40	2002	1.31	62.36	1.08	4755	1.54	51.03	1.43	1556	1.13
Used contraception in past	18.13	.99	2002	1.14	17.52	.66	4755	1.20	18.57	.93	1556	.94
Currently using contraception	17.63	.96	2002	1.13	20.13	.84	4755	1.45	30.40	1.30	1556	1.12

Variable name	25-29 Mean or per cent	SE	n	DEFT	30-34 Mean or per cent	SE	n	DEFT
Age at first marriage	26.85	.07	360	.95	33.86	.47	77	1.03
Age at first marriage (<25)	.00	.00	0	.00	.00	.00	0	.00
First marriage dissolved	7.78	1.48	360	1.05	16.88	4.16	77	.97
Time spent in union	94.66	1.23	360	.95	91.14	2.67	77	.99
Currently married	93.61	1.35	360	1.05	85.71	4.10	77	1.02
Births in first 5 years	1.82	.07	203	.94	1.23	.16	48	1.02
Births in past 5 years	.90	.08	181	1.09	.64	.16	39	.92
Currently pregnant	17.51	2.11	337	1.02	4.55	2.43	66	.94
Children ever born	2.03	.10	360	1.00	1.36	.18	77	.96
Living children	1.74	.08	360	.97	1.18	.16	77	.96
Additional children wanted	1.01	.10	309	.99	1.92	.36	49	.95
Breastfed last closed interval	86.05	2.61	215	1.10	72.41	9.35	29	1.11
Months breastfed closed interval	9.90	.75	215	1.06	10.86	1.89	29	.97
Wants no more children	47.34	3.00	319	1.07	35.85	6.93	53	1.04
Desired family size	2.85	.08	335	.85	3.06	.31	66	1.00
Knows an effective method	96.94	.97	360	1.07	89.61	3.33	77	.95
Ever used contraceptives	58.06	2.95	360	1.13	32.47	5.69	77	1.06
Ever used any effective method	56.67	2.94	360	1.12	31.17	5.70	77	1.07
Currently using (exposed)	53.46	3.20	260	1.03	34.00	7.16	50	1.06
Using effective (exposed)	46.92	3.32	260	1.07	32.00	7.57	50	1.14
Wants no more and using eff.(exp)	59.54	4.01	131	.93	68.42	11.45	19	1.05
Never used contraception	41.94	2.95	360	1.13	67.53	5.69	77	1.06
Used contraception in past	19.44	2.25	360	1.08	10.39	3.27	77	.94
Currently using contraception	38.61	2.67	360	1.04	22.08	5.06	77	1.06

Table I.3b — Sampling errors by differences between age at first marriage subclasses

Variable name	(<15) – (15-19) Mean or per cent	SE	n	DEFT	(15-19) – (20-24) Mean or per cent	SE	n	DEFT	(20-24) – (25-29) Mean or per cent	SE	n	DEFT	(25-29) – (30-34) Mean or per cent	SE	n	DEFT
Age at first marriage	-3.65	.03	2811	1.06	-4.74	.04	2351	1.01	-4.92	.07	585	.95	-7.01	.49	126	1.06
Age at first marriage (<25)	-3.69	.03	2104	.95	-4.83	.05	1835	.98	22.03	.04	0	.93	.00	.00	0	.00
First marriage dissolved	11.93	1.10	2834	.99	3.08	1.04	2351	1.09	3.57	1.61	585	.99	-9.11	4.37	126	.97
Time spent in union	-1.50	.46	2834	.99	.24	.65	2351	1.07	-.08	1.36	585	.98	3.51	2.90	126	.97
Currently married	-3.41	.81	2834	.99	-.22	.92	2351	1.16	-1.50	1.46	585	1.00	7.90	4.30	126	1.02
Births in first 5 years	-.21	.03	2485	1.04	.03	.04	1610	1.07	.05	.07	338	.89	.59	.17	77	1.02
Births in past 5 years	-.13	.03	2141	1.00	.06	.04	1412	.98	.31	.08	301	1.01	.25	.17	64	.92
Currently pregnant	-2.80	.94	2535	.96	.17	1.12	2165	1.01	-1.64	2.35	545	1.03	12.96	3.52	110	1.06
Children ever born	1.49	.09	2834	1.02	1.23	.07	2351	1.01	.86	.12	585	1.03	.67	.20	126	.96
Living children	.86	.06	2834	1.03	.78	.06	2351	.97	.63	.09	585	.94	.55	.17	126	.91
Additional children wanted	-.02	.10	2116	1.25	.28	.08	1937	1.14	.14	.12	499	1.05	-.91	.38	84	.95
Breastfed last closed interval	1.36	.61	2364	.91	3.40	1.13	1687	1.14	4.05	2.75	359	1.08	13.63	9.72	51	1.11
Months breastfed closed interval	2.36	.33	2364	.95	3.68	.40	1687	1.08	3.70	.81	359	1.04	-.96	2.04	51	.99
Wants no more children	6.49	1.87	2236	1.26	-.13	1.89	2015	1.20	4.86	3.46	515	1.11	11.49	7.82	90	1.08
Desired family size	.54	.09	2483	1.17	.83	.08	2140	1.22	.51	.11	542	.98	-.21	.33	110	1.00
Knows an effective method	-3.51	1.12	2834	1.26	-3.08	1.02	2351	1.29	-4.25	1.27	585	1.13	7.33	3.20	126	.88
Ever used contraceptives	-1.95	1.36	2834	1.06	-11.37	1.49	2351	1.03	-9.21	3.19	585	1.10	25.59	6.34	126	1.06
Ever used any effective method	-1.76	1.37	2834	1.08	-10.84	1.46	2351	1.01	-9.23	3.18	585	1.09	25.50	6.36	126	1.07
Currently using (exposed)	-2.02	1.55	1881	1.07	-13.41	1.74	1671	1.04	-11.30	3.71	421	1.08	19.46	8.12	83	1.09
Using effective (exposed)	-1.67	1.56	1881	1.09	-11.70	1.65	1671	1.00	-7.89	3.72	421	1.09	14.92	8.70	83	1.18
Wants no more and using eff.(exp)	-3.65	2.00	1078	.94	-11.52	2.21	881	.93	-4.19	4.56	214	.96	-8.88	11.90	33	1.01
Never used contraception	1.88	1.34	2817	1.05	11.33	1.49	2344	1.03	9.08	3.18	584	1.10	-25.59	6.34	126	1.06
Used contraception in past	.61	.97	2817	.95	-1.05	1.07	2344	.95	-.87	2.45	584	1.06	9.05	3.79	126	.93
Currently using contraception	-2.49	1.11	2817	1.08	-10.27	1.29	2344	.99	-8.21	3.07	584	1.09	16.53	6.06	126	1.12

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Table I.4a - Sampling errors by years since first marriage

Variable name	<5 Mean or per cent	SE	n	DEFT	5-9 Mean or per cent	SE	n	DEFT	10-14 Mean or per cent	SE	n	DEFT	15-19 Mean or per cent	SE	n	DEFT
Age at first marriage	19.58	.13	1893	1.36	18.45	.13	1664	1.36	18.03	.15	1390	1.43	17.22	.10	1308	1.09
Age at first marriage (<25)	22.87	.09	254	1.09	19.75	.10	808	1.11	17.57	.10	1255	1.20	16.86	.09	1265	1.08
First marriage dissolved	5.27	.51	1916	1.00	11.48	.77	1664	.99	15.83	.89	1390	.91	15.67	.99	1308	.99
Time spent in union	97.02	.36	1916	1.03	96.08	.33	1664	.99	95.44	.36	1390	.97	96.01	.38	1308	1.08
Currently married	95.82	.46	1916	1.01	94.83	.51	1664	.94	93.02	.61	1390	.89	92.97	.71	1308	1.00
Births in first 5 years	.00	.00	0	.00	1.79	.02	1664	1.00	1.81	.03	1390	.98	1.93	.03	1308	1.12
Births in past 5 years	.00	.00	0	.00	1.86	.03	1490	1.02	1.55	.03	1254	1.09	1.21	.03	1194	1.14
Currently pregnant	24.95	1.08	1836	1.07	19.58	.99	1578	.99	17.87	1.00	1293	.94	12.83	1.14	1216	1.19
Children ever born	.91	.02	1916	.86	2.64	.03	1664	.98	4.11	.05	1390	.98	5.46	.07	1308	1.05
Living children	.79	.02	1916	.85	2.17	.03	1664	1.02	3.25	.04	1390	.93	4.25	.05	1308	1.09
Additional children wanted	2.49	.07	1729	1.14	1.62	.09	1450	1.24	1.08	.08	1196	1.06	.60	.07	1103	1.28
Breastfed last closed interval	86.20	1.44	623	1.04	91.77	.71	1409	.97	92.76	.78	1270	1.07	94.37	.67	1225	1.01
Months breastfed closed interval	11.14	.41	623	1.20	15.45	.28	1409	.97	16.21	.29	1270	.96	18.21	.34	1225	1.03
Wants no more children	15.26	.89	1815	1.05	44.70	1.35	1539	1.06	63.72	1.53	1254	1.12	76.47	1.44	1160	1.15
Desired family size	3.53	.06	1809	1.07	3.87	.08	1553	1.30	4.07	.08	1277	1.13	4.17	.09	1195	1.29
Knows an effective method	87.79	.90	1916	1.21	89.18	.81	1664	1.06	91.37	.84	1390	1.12	92.35	.79	1308	1.07
Ever used contraceptives	22.44	1.16	1916	1.22	37.50	1.59	1664	1.34	45.97	1.74	1390	1.30	52.52	1.51	1308	1.09
Ever used any effective method	21.50	1.13	1916	1.20	37.14	1.59	1664	1.34	45.40	1.75	1390	1.31	51.76	1.51	1308	1.09
Currently using (exposed)	19.82	1.13	1357	1.04	26.50	1.55	1230	1.23	34.41	1.53	1023	1.03	41.53	1.68	1004	1.08
Using effective (exposed)	18.35	1.09	1357	1.04	25.45	1.54	1230	1.24	33.24	1.47	1023	1.00	39.54	1.71	1004	1.11
Wants no more and using eff.(exp)	43.20	3.93	169	1.03	45.06	2.51	506	1.13	47.13	1.96	645	1.00	48.66	2.08	783	1.17
Never used contraception	77.49	1.17	1910	1.22	62.34	1.59	1657	1.34	53.90	1.74	1386	1.30	47.24	1.52	1302	1.10
Used contraception in past	8.43	.72	1910	1.14	17.98	1.09	1657	1.15	20.71	1.19	1386	1.09	20.66	1.11	1302	.99
Currently using contraception	14.08	.84	1910	1.05	19.67	1.22	1657	1.24	25.40	1.24	1386	1.06	32.10	1.50	1302	1.16

Variable name	20-24 Mean or per cent	SE	n	DEFT	25-29 Mean or per cent	SE	n	DEFT	30+ Mean or per cent	SE	n	DEFT
Age at first marriage	16.69	.10	1108	1.10	16.17	.10	883	1.19	14.41	.07	519	.90
Age at first marriage (<25)	16.55	.10	1091	1.15	16.17	.10	883	1.19	14.41	.07	519	.90
First marriage dissolved	23.92	1.28	1108	1.00	29.78	1.71	883	1.11	37.19	2.07	519	.97
Time spent in union	94.02	.40	1108	.86	92.12	.60	883	1.02	92.24	.69	519	1.00
Currently married	87.00	.98	1108	.97	81.31	1.48	883	1.13	78.42	1.82	519	1.00
Births in first 5 years	1.90	.04	1108	1.07	1.84	.04	883	1.20	1.68	.04	519	.90
Births in past 5 years	.80	.03	950	1.11	.38	.03	714	1.06	.18	.03	401	.99
Currently pregnant	5.91	.86	964	1.13	2.51	.61	718	1.05	.25	.25	407	1.00
Children ever born	6.48	.09	1108	1.12	6.89	.11	883	1.14	7.83	.14	519	.99
Living children	4.74	.06	1108	.96	4.91	.08	883	1.03	5.32	.10	519	.92
Additional children wanted	.65	.07	802	.95	.50	.07	489	.80	.36	.12	166	1.16
Breastfed last closed interval	94.60	.65	1018	.92	95.29	.68	785	.90	95.23	1.01	461	1.02
Months breastfed closed interval	19.82	.44	1018	1.10	18.88	.41	785	.97	19.60	.58	461	1.04
Wants no more children	77.79	1.64	842	1.14	84.14	1.60	498	1.07	82.22	2.59	180	.90
Desired family size	4.67	.10	943	1.08	4.80	.12	704	1.06	4.82	.14	399	.92
Knows an effective method	88.81	.95	1108	1.00	88.67	1.12	883	1.05	90.17	1.43	519	1.09
Ever used contraceptives	44.58	1.60	1108	1.07	47.11	1.83	883	1.09	40.85	2.40	519	1.11
Ever used any effective method	43.14	1.52	1108	1.02	45.19	1.84	883	1.10	39.11	2.37	519	1.11
Currently using (exposed)	37.83	1.96	785	1.13	43.75	2.66	480	1.17	34.08	3.54	179	1.00
Using effective (exposed)	34.52	1.88	785	1.11	39.58	2.43	480	1.09	32.40	3.56	179	1.01
Wants no more and using eff.(exp)	43.39	2.16	613	1.08	46.42	2.66	405	1.07	38.78	4.07	147	1.01
Never used contraception	55.05	1.60	1099	1.06	52.78	1.82	881	1.08	58.83	2.40	515	1.11
Used contraception in past	17.83	1.19	1099	1.03	23.04	1.53	881	1.08	28.93	2.18	515	1.09
Currently using contraception	27.12	1.51	1099	1.13	24.18	1.56	881	1.08	12.23	1.47	515	1.02

Table I.4b – Sampling errors by differences between years since first marriage subclasses

Variable name	(<5) – (5-9) Mean or per cent	SE	n	DEFT	(5-9) – (10-14) Mean or per cent	SE	n	DEFT	(10-14) – (15-19) Mean or per cent	SE	n	DEFT
Age at first marriage	1.12	.14	1771	1.02	.42	.17	1514	1.19	.81	.15	1347	1.04
Age at first marriage (<25)	3.12	.14	386	1.15	2.18	.12	983	1.02	.71	.11	1259	.94
First marriage dissolved	-6.21	.89	1781	.95	-4.35	1.09	1514	.87	.15	1.31	1347	.94
Time spent in union	.94	.48	1781	.99	.65	.43	1514	.85	-.57	.53	1347	1.04
Currently married	.99	.70	1781	.99	1.81	.76	1514	.88	.06	1.02	1347	1.04
Births in first 5 years	-1.79	.02	0	1.00	-.02	.03	1514	.98	-.12	.04	1347	.98
Births in past 5 years	-1.86	.03	0	1.02	.31	.04	1361	1.05	.34	.04	1223	1.04
Currently pregnant	5.36	1.41	1697	1.00	1.72	1.44	1421	.98	5.04	1.32	1253	.92
Children ever born	-1.72	.03	1781	.91	-1.47	.06	1514	.99	-1.35	.07	1347	.93
Living children	-1.38	.03	1781	.90	-1.08	.04	1514	.86	-1.00	.06	1347	.93
Additional children wanted	.87	.10	1577	1.01	.54	.10	1310	.96	.47	.08	1147	.88
Breastfed last closed interval	-5.57	1.59	863	1.01	-.99	1.04	1335	1.01	-1.61	.85	1247	.87
Months breastfed closed interval	-4.31	.42	863	.95	-.75	.37	1335	.88	-2.00	.42	1247	.94
Wants no more children	-29.44	1.52	1665	1.00	-19.01	1.71	1381	.92	-12.75	1.97	1205	1.07
Desired family size	-.34	.09	1671	1.03	-.21	.09	1401	.96	-.09	.10	1234	.95
Knows an effective method	-1.40	.89	1781	.83	-2.18	.84	1514	.78	-.99	.90	1347	.85
Ever used contraceptives	-15.06	1.58	1781	1.04	-8.47	2.04	1514	1.14	-6.55	1.80	1347	.94
Ever used any effective method	-15.64	1.56	1781	1.03	-8.26	2.05	1514	1.15	-6.36	1.79	1347	.93
Currently using (exposed)	-6.68	1.58	1290	.95	-7.90	1.97	1116	1.01	-7.13	1.82	1013	.85
Using effective (exposed)	-7.10	1.56	1290	.96	-7.79	1.89	1116	.98	-6.31	1.77	1013	.83
Wants no more and using eff.(exp)	-1.86	4.65	253	1.05	-2.07	2.99	567	1.01	-1.53	2.27	707	.86
Never used contraception	15.15	1.58	1774	1.03	8.45	2.04	1509	1.14	6.66	1.81	1342	.94
Used contraception in past	-9.55	1.15	1774	1.01	-2.72	1.63	1509	1.13	.05	1.58	1342	1.01
Currently using contraception	-5.59	1.22	1774	.97	-5.72	1.63	1509	1.07	-6.71	1.56	1342	.90

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Variable name	(15-19) – (20-24) Mean or per cent	SE	n	DEFT	(20-24) – (25-29) Mean or per cent	SE	n	DEFT	(25-29) – (30+) Mean or per cent	SE	n	DEFT
Age at first marriage	.53	.13	1199	.98	.52	.13	982	.99	1.77	.12	653	1.01
Age at first marriage (<25)	.31	.11	1171	.94	.37	.13	976	1.05	1.77	.12	653	1.01
First marriage dissolved	-8.24	1.61	1199	.99	-5.87	2.11	982	1.05	-7.40	2.72	653	1.04
Time spent in union	1.99	.54	1199	.93	1.90	.68	982	.90	-.12	.95	653	1.05
Currently married	5.96	1.11	1199	.90	5.69	1.76	982	1.06	2.89	2.59	653	1.16
Births in first 5 years	.03	.04	1199	.97	.07	.05	982	1.09	.16	.05	653	.89
Births in past 5 years	.41	.04	1058	1.07	.42	.04	815	.98	.21	.04	513	1.01
Currently pregnant	6.92	1.36	1075	1.11	3.41	1.07	823	1.12	2.26	.66	519	1.04
Children ever born	-1.02	.10	1199	.95	-.41	.13	982	1.02	-.94	.18	653	1.04
Living children	-.49	.07	1199	.89	-.17	.09	982	.91	-.40	.13	653	.97
Additional children wanted	-.05	.10	928	1.06	.15	.09	607	.79	.14	.15	247	1.08
Breastfed last closed interval	-.23	.90	1111	.93	-.69	.96	886	.93	.06	1.15	580	.92
Months breastfed closed interval	-1.61	.52	1111	1.01	.94	.59	886	1.02	-.72	.66	580	.94
Wants no more children	-1.33	1.88	975	.99	-6.35	2.04	625	.94	1.91	2.99	264	.91
Desired family size	-.50	.11	1054	.93	-.13	.14	806	.95	-.02	.18	509	.96
Knows an effective method	3.55	1.07	1199	.90	.13	1.09	982	.77	-1.50	1.65	653	.98
Ever used contraceptives	7.94	1.98	1199	.97	-2.53	1.92	982	.85	6.26	2.84	653	1.04
Ever used any effective method	8.62	1.91	1199	.94	-2.05	1.93	982	.86	6.07	2.77	653	1.02
Currently using (exposed)	3.70	2.30	881	.99	-5.92	3.08	595	1.08	9.67	4.18	260	.99
Using effective (exposed)	5.02	2.25	881	.98	-5.06	2.94	595	1.05	7.18	4.22	260	1.01
Wants no more and using eff.(exp)	5.27	2.79	687	1.04	-3.03	3.35	487	1.05	7.64	4.68	215	.99
Never used contraception	-7.82	1.98	1191	.97	2.27	1.91	977	.85	-6.05	2.84	650	1.03
Used contraception in past	2.83	1.57	1191	.97	-5.21	1.87	977	1.02	-5.89	2.73	650	1.11
Currently using contraception	4.99	1.80	1191	.97	2.94	1.99	977	1.01	11.94	2.09	650	1.02

Table I.5a – Sampling errors by number of living children

Variable name	0 Mean or per cent	SE	n	DEFT	1 Mean or per cent	SE	n	DEFT	2 Mean or per cent	SE	n	DEFT	3 Mean or per cent	SE	n	DEFT
Age at first marriage	19.18	.17	1114	1.25	18.86	.15	1332	1.27	18.51	.12	1413	1.19	17.87	.13	1355	1.31
Age at first marriage (<25)	18.45	.22	284	1.01	19.18	.16	474	1.01	18.58	.13	815	1.13	17.87	.10	1067	1.12
First marriage dissolved	17.78	1.28	1136	1.13	17.93	1.03	1333	.98	17.62	1.15	1413	1.13	14.98	.98	1355	1.01
Time spent in union	83.94	1.56	1136	1.08	85.14	1.34	1333	1.12	90.63	.72	1413	1.03	94.69	.47	1355	1.01
Currently married	89.79	.93	1136	1.03	89.20	.84	1333	.99	90.87	.79	1413	1.03	92.25	.66	1355	.91
Births in first 5 years	.29	.04	349	1.00	1.15	.04	555	1.03	1.71	.03	1087	.91	1.95	.02	1331	.97
Births in past 5 years	.12	.03	239	.98	.90	.04	915	.95	1.33	.04	915	1.13	1.49	.03	1206	1.01
Currently pregnant	28.63	1.63	1020	1.15	22.20	1.14	1189	.95	16.04	1.10	1284	1.07	14.64	1.02	1250	1.02
Children ever born	.24	.02	1136	1.09	1.48	.03	1333	1.12	2.80	.04	1413	1.19	4.06	.05	1355	1.15
Living children	.00	.00	1136	.00	1.00	.00	1333	.00	2.00	.00	1413	.00	3.00	.00	1355	.00
Additional children wanted	3.50	.10	870	1.00	2.36	.10	1068	1.19	1.42	.09	1154	1.24	.88	.06	1091	.94
Breastfed last closed interval	67.53	6.17	77	1.15	85.36	1.73	519	1.11	89.96	.88	1375	1.08	93.31	.67	1331	.97
Months breastfed closed interval	14.83	2.08	77	1.03	16.38	.75	519	1.17	14.74	.39	1375	1.25	16.46	.33	1331	1.08
Wants no more children	1.76	.37	907	.85	15.69	1.21	1147	1.13	45.54	1.65	1223	1.16	64.65	1.50	1157	1.07
Desired family size	3.68	.09	1005	1.02	3.60	.10	1173	1.22	3.69	.09	1269	1.22	3.86	.07	1227	1.07
Knows an effective method	81.43	1.53	1136	1.33	86.57	1.30	1333	1.40	89.88	.91	1413	1.13	91.88	.83	1355	1.12
Ever used contraceptives	3.52	.54	1136	.98	24.53	1.54	1333	1.31	40.98	1.64	1413	1.26	46.86	1.65	1355	1.22
Ever used any effective method	3.08	.49	1136	.95	23.18	1.46	1333	1.26	40.41	1.64	1413	1.26	45.98	1.66	1355	1.22
Currently using (exposed)	2.11	.61	615	1.06	21.40	1.50	883	1.09	34.41	1.82	1017	1.22	36.55	1.67	974	1.08
Using effective (exposed)	1.79	.58	615	1.08	19.37	1.44	883	1.08	32.35	1.78	1017	1.21	34.50	1.72	974	1.13
Wants no more and using eff.(exp)	33.33	27.22	3	.82	39.13	5.87	69	.99	54.31	2.86	429	1.19	47.26	2.17	620	1.08
Never used contraception	96.46	.54	1131	.98	75.32	1.55	1325	1.31	58.79	1.65	1405	1.26	52.93	1.66	1349	1.22
Used contraception in past	2.39	.43	1131	.95	10.42	1.09	1325	1.30	16.16	.99	1405	1.01	20.68	1.26	1349	1.14
Currently using contraception	1.15	.34	1131	1.06	14.26	1.05	1325	1.09	25.05	1.37	1405	1.19	26.39	1.27	1349	1.06

Variable name	4 Mean or per cent	SE	n	DEFT	5 Mean or per cent	SE	n	DEFT	6 Mean or per cent	SE	n	DEFT	7+ Mean or per cent	SE	n	DEFT
Age at first marriage	17.14	.11	1168	1.20	16.63	.11	950	1.11	16.37	.12	669	1.01	15.68	.10	764	1.04
Age at first marriage (<25)	17.06	.11	1090	1.24	16.48	.10	924	1.04	16.22	.10	660	1.00	15.64	.10	761	1.08
First marriage dissolved	16.61	1.04	1168	.96	16.21	1.23	950	1.03	13.30	1.45	669	1.10	14.14	1.14	764	.91
Time spent in union	95.77	.33	1168	.87	96.47	.34	950	.94	97.78	.31	669	1.09	98.02	.24	764	.95
Currently married	91.61	.74	1168	.91	92.00	.83	950	.94	93.42	1.06	669	1.11	91.62	1.00	764	1.00
Births in first 5 years	2.00	.03	1168	1.04	2.15	.04	950	1.17	2.09	.03	668	.96	2.15	.04	764	1.09
Births in past 5 years	1.31	.04	1057	1.10	1.19	.04	869	1.00	1.16	.05	619	1.12	1.06	.04	700	1.12
Currently pregnant	11.03	1.06	1070	1.11	9.27	1.00	874	1.02	8.00	1.04	625	.96	5.14	.80	700	.96
Children ever born	5.32	.05	1168	1.07	6.65	.05	950	1.00	7.54	.06	669	1.02	9.21	.07	764	1.14
Living children	4.00	.00	1168	.00	5.00	.00	950	.00	6.00	.00	669	.00	7.72	.03	764	.96
Additional children wanted	.69	.09	936	1.25	.49	.07	737	1.05	.20	.05	525	1.23	.28	.06	554	.97
Breastfed last closed interval	94.94	.68	1146	1.05	95.51	.66	935	.98	96.50	.65	657	.91	96.54	.70	751	1.04
Months breastfed closed interval	17.60	.31	1146	.94	18.49	.39	935	1.05	18.88	.37	657	.93	18.60	.38	751	1.03
Wants no more children	76.07	1.57	978	1.15	82.08	1.53	770	1.11	89.81	1.42	540	1.09	90.28	1.38	566	1.11
Desired family size	4.25	.09	1057	1.25	4.57	.10	856	1.09	4.76	.11	612	1.02	5.31	.14	681	1.23
Knows an effective method	92.38	.93	1168	1.20	91.26	.99	950	1.08	93.12	.88	669	.89	93.72	.91	764	1.03
Ever used contraceptives	50.51	1.77	1168	1.21	54.21	2.05	950	1.27	57.40	2.30	669	1.20	56.54	2.07	764	1.15
Ever used any effective method	49.74	1.76	1168	1.20	52.95	2.05	950	1.27	56.50	2.35	669	1.22	54.71	2.11	764	1.17
Currently using (exposed)	40.12	1.78	860	1.06	40.06	2.15	689	1.15	40.82	2.71	490	1.22	38.30	1.94	530	.92
Using effective (exposed)	38.26	1.69	860	1.02	37.45	2.05	689	1.11	39.18	2.60	490	1.18	36.23	1.96	530	.94
Wants no more and using eff.(exp)	47.64	1.91	657	.98	43.97	2.31	564	1.11	43.21	2.84	442	1.20	39.46	2.16	484	.97
Never used contraception	49.27	1.77	1163	1.20	45.62	2.06	947	1.27	42.43	2.29	667	1.19	43.38	2.07	763	1.15
Used contraception in past	20.81	1.29	1163	1.08	25.13	1.71	947	1.21	27.59	1.69	667	.97	29.88	1.75	763	1.06
Currently using contraception	29.92	1.57	1163	1.17	29.25	1.71	947	1.16	29.99	2.16	667	1.22	26.74	1.57	763	.98

Table I.6a - Sampling errors by region of residence

	Cairo				Alexandria				Lower Egypt				Upper Egypt			
Variable name	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	18.91	.18	1592	1.64	19.16	.31	475	1.58	17.80	.13	3874	2.14	16.80	.12	2824	1.90
Age at first marriage (<25)	18.04	.14	1140	1.39	18.02	.19	355	1.11	17.36	.11	2684	1.78	16.57	.11	1896	1.60
First marriage dissolved	16.64	1.02	1593	1.10	13.26	1.76	475	1.13	14.59	.68	3885	1.19	19.15	.86	2835	1.17
Time spent in union	94.09	.49	1593	1.01	95.33	.72	475	.90	94.68	.34	3885	1.17	93.71	.39	2835	1.10
Currently married	91.46	.83	1593	1.19	91.58	1.52	475	1.19	91.89	.48	3885	1.09	89.95	.50	2835	.88
Births in first 5 years	1.87	.03	1234	1.01	1.90	.05	385	1.03	1.87	.02	3009	1.18	1.77	.04	2244	1.59
Births in past 5 years	.97	.04	1079	1.39	.80	.05	341	.94	1.27	.03	2657	1.39	1.34	.03	1926	1.35
Currently pregnant	12.22	1.19	1457	1.39	8.97	.83	435	.61	15.60	.66	3570	1.08	17.88	.77	2550	1.01
Children ever born	3.70	.08	1593	1.16	3.90	.14	475	1.09	4.22	.05	3885	1.05	4.29	.06	2835	1.02
Living children	2.94	.06	1593	1.14	3.26	.09	475	.83	3.32	.04	3885	1.03	2.97	.05	2835	1.16
Additional children wanted	.65	.04	1281	1.05	.45	.06	377	1.26	.82	.04	3088	1.31	2.69	.15	2189	1.96
Breastfed last closed interval	91.64	.86	1220	1.08	89.81	2.58	373	1.64	93.75	.59	3042	1.35	93.18	.57	2156	1.05
Months breastfed closed interval	13.95	.41	1220	1.31	12.05	.87	373	1.74	16.91	.24	3042	1.25	19.80	.41	2156	1.47
Wants no more children	64.21	1.48	1330	1.13	70.21	2.26	386	.97	59.42	1.08	3243	1.26	35.25	1.73	2329	1.74
Desired family size	3.00	.06	1438	1.32	3.02	.07	431	.91	3.63	.07	3519	1.90	5.58	.14	2492	2.18
Knows an effective method	98.18	.48	1593	1.44	99.58	.04	475	.15	96.53	.60	3885	2.03	73.79	1.80	2835	2.17
Ever used contraceptives	66.48	2.45	1593	2.07	73.26	2.31	475	1.13	41.18	1.71	3885	2.16	17.46	1.38	2835	1.93
Ever used any effective method	65.03	2.46	1593	2.06	71.37	2.22	475	1.07	40.13	1.71	3885	2.18	17.07	1.34	2835	1.89
Currently using (exposed)	53.21	2.58	1152	1.76	61.96	3.23	347	1.24	32.69	1.64	2686	1.81	12.07	1.31	1873	1.74
Using effective (exposed)	49.48	2.40	1152	1.63	56.48	2.93	347	1.10	31.16	1.60	2686	1.79	11.48	1.26	1873	1.71
Wants no more and using eff. (exp)	61.34	2.51	745	1.40	67.74	3.49	248	1.17	43.62	1.80	1598	1.45	25.85	2.47	677	1.47
Never used contraception	33.27	2.45	1587	2.07	26.74	2.31	475	1.13	58.77	1.71	3881	2.16	82.37	1.39	2807	1.93
Used contraception in past	27.85	1.43	1587	1.27	28.00	2.76	475	1.34	18.58	.84	3881	1.34	9.51	.75	2807	1.36
Currently using contraception	38.88	2.05	1587	1.68	45.26	2.87	475	1.26	22.65	1.24	3881	1.85	8.12	.91	2807	1.76

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Table I.7a - Sampling errors by type of locality

	Metropolitan				Cities: Lower Egypt				Cities: Upper Egypt			
Variable name	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	18.96	.15	2067	1.60	19.08	.25	544	1.33	18.56	.82	233	2.59
Age at first marriage (<25)	18.03	.11	1495	1.33	17.82	.16	372	.90	17.14	.52	159	2.09
First marriage dissolved	15.86	.90	2068	1.12	13.42	1.14	544	.78	13.73	1.58	233	.70
Time spent in union	94.39	.41	2068	.99	94.54	.86	544	1.03	95.52	.34	233	.35
Currently married	91.49	.73	2068	1.19	92.46	.73	544	.64	93.99	1.08	233	.69
Births in first 5 years	1.87	.03	1619	1.02	1.91	.06	417	1.12	2.03	.08	177	.98
Births in past 5 years	.93	.03	1420	1.28	.99	.09	365	1.66	1.16	.19	157	2.19
Currently pregnant	11.47	.94	1892	1.29	13.72	2.25	503	1.46	12.33	1.83	219	.82
Children ever born	3.75	.07	2068	1.17	3.84	.13	544	1.02	4.22	.22	233	1.13
Living children	3.02	.05	2068	1.12	3.06	.07	544	.72	3.25	.13	233	.92
Additional children wanted	.61	.04	1658	1.06	.54	.06	443	1.21	.60	.08	197	.99
Breastfed last closed interval	91.21	.87	1593	1.23	86.65	3.49	412	2.08	89.95	2.81	189	1.28
Months breastfed closed interval	13.51	.35	1593	1.33	12.93	.73	412	1.49	15.14	.81	189	1.06
Wants no more children	65.56	1.23	1716	1.07	65.58	2.94	459	1.33	63.05	4.23	203	1.25
Desired family size	3.00	.05	1869	1.25	2.96	.07	499	1.09	3.23	.10	219	1.08
Knows an effective method	98.50	.38	2068	1.41	96.51	1.08	544	1.38	99.14	.65	233	1.08
Ever used contraceptives	68.04	1.94	2068	1.90	64.89	1.98	544	.97	56.65	7.50	233	2.31
Ever used any effective method	66.49	1.96	2068	1.89	63.79	2.27	544	1.10	55.79	7.45	233	2.29
Currently using (exposed)	55.24	2.12	1499	1.65	58.46	2.46	390	.98	47.16	9.18	176	2.43
Using effective (exposed)	51.10	1.99	1499	1.54	54.62	3.28	390	1.30	43.75	8.66	176	2.31
Wants no more and using eff. (exp)	62.94	2.08	993	1.36	67.94	3.52	262	1.22	54.39	9.32	114	1.99
Never used contraception	31.77	1.95	2062	1.90	35.11	1.98	544	.97	43.35	7.50	233	2.31
Used contraception in past	27.89	1.27	2062	1.28	22.98	1.54	544	.86	21.03	2.51	233	.94
Currently using contraception	40.35	1.71	2062	1.58	41.91	2.38	544	1.13	35.62	7.65	233	2.43

Table I.7a - Sampling errors by type of locality (cont.)

Variable name	Towns: Lower Egypt				Towns: Upper Egypt				Villages: Lower Egypt			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	18.44	.33	472	2.03	16.96	.24	389	1.47	17.45	.15	2858	2.32
Age at first marriage (<25)	18.22	.27	330	1.49	16.78	.19	270	1.05	17.13	.14	1982	1.95
First marriage dissolved	12.90	2.36	473	1.53	15.13	3.12	390	1.72	15.10	.80	2868	1.20
Time spent in union	95.38	1.06	473	1.40	94.02	1.18	390	1.07	94.60	.39	2868	1.15
Currently married	94.29	1.39	473	1.30	92.82	.98	390	.75	91.39	.59	2868	1.13
Births in first 5 years	1.95	.09	355	1.74	1.83	.07	303	1.11	1.85	.02	2237	1.07
Births in past 5 years	1.12	.09	321	1.56	1.35	.06	271	.97	1.34	.03	1971	1.39
Currently pregnant	14.35	1.67	446	1.01	19.89	1.86	362	.89	16.18	.75	2621	1.04
Children ever born	3.86	.07	473	.58	4.51	.09	390	.53	4.35	.06	2868	1.08
Living children	3.17	.11	473	1.16	3.24	.06	390	.53	3.39	.05	2868	1.04
Additional children wanted	.64	.11	395	1.78	1.43	.28	321	2.26	.91	.05	2250	1.30
Breastfed last closed interval	92.06	1.25	378	.90	89.39	1.10	311	.63	95.34	.47	2252	1.05
Months breastfed closed interval	15.11	.60	378	1.13	18.16	.82	311	1.14	17.94	.26	2252	1.20
Wants no more children	64.22	4.17	408	1.76	49.55	4.08	333	1.49	57.41	1.24	2376	1.23
Desired family size	3.26	.17	441	2.07	4.53	.24	355	1.74	3.82	.08	2579	1.93
Knows an effective method	97.89	1.29	473	1.95	90.00	3.54	390	2.33	96.30	.75	2868	2.14
Ever used contraceptives	64.06	5.60	473	2.53	34.36	2.67	390	1.11	32.91	2.01	2868	2.29
Ever used any effective method	63.21	5.53	473	2.49	33.59	2.53	390	1.06	31.83	2.00	2868	2.30
Currently using (exposed)	52.03	5.93	344	2.20	24.14	1.55	261	.58	24.13	1.84	1952	1.90
Using effective (exposed)	50.00	5.89	344	2.18	22.61	1.16	261	.45	23.16	1.77	1952	1.86
Wants no more and using eff.(exp)	65.60	4.29	218	1.33	36.50	3.13	137	.76	33.63	2.16	1118	1.53
Never used contraception	35.94	5.60	473	2.53	65.55	2.60	389	1.08	67.04	2.01	2864	2.29
Used contraception in past	26.22	1.83	473	.91	18.25	2.05	389	1.04	16.48	1.07	2864	1.54
Currently using contraception	37.84	4.99	473	2.24	16.20	.80	389	.43	16.48	1.34	2864	1.94

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Variable name	Villages: Upper Egypt				Urban: Lower Egypt				Urban: Upper Egypt			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	16.59	.13	2202	1.95	18.78	.20	1016	1.61	17.56	.29	622	1.83
Age at first marriage (<25)	16.46	.13	1467	1.69	18.01	.15	702	1.21	16.91	.19	429	1.29
First marriage dissolved	20.43	.96	2212	1.11	13.18	1.24	1017	1.17	14.61	1.86	623	1.31
Time spent in union	93.46	.45	2212	1.12	94.92	.70	1017	1.22	94.57	.81	623	1.04
Currently married	89.01	.58	2212	.88	93.31	.70	1017	.89	93.26	.81	623	.81
Births in first 5 years	1.73	.04	1764	1.57	1.92	.05	772	1.42	1.91	.07	480	1.55
Births in past 5 years	1.36	.04	1498	1.35	1.05	.06	686	1.36	1.28	.07	428	1.34
Currently pregnant	18.13	.82	1969	.94	14.01	1.34	949	1.19	17.04	1.93	581	1.24
Children ever born	4.27	.08	2212	1.09	3.85	.08	1017	.89	4.40	.09	623	.69
Living children	2.89	.06	2212	1.24	3.11	.06	1017	.94	3.25	.07	623	.77
Additional children wanted	3.18	.17	1671	1.91	.59	.05	838	1.35	1.12	.18	518	2.15
Breastfed last closed interval	94.26	.61	1656	1.07	89.24	1.87	790	1.70	89.60	1.20	500	.88
Months breastfed closed interval	20.64	.46	1656	1.45	13.97	.47	790	1.29	17.02	.62	500	1.15
Wants no more children	29.45	1.85	1793	1.71	64.94	2.20	867	1.36	54.66	3.32	536	1.54
Desired family size	6.04	.17	1918	2.16	3.10	.08	940	1.69	4.03	.18	574	1.90
Knows an effective method	68.26	2.14	2212	2.17	97.15	.83	1017	1.59	93.42	2.18	623	2.19
Ever used contraceptives	10.35	1.22	2212	1.88	64.50	2.77	1017	1.85	42.70	3.79	623	1.91
Ever used any effective method	10.08	1.15	2212	1.79	63.52	2.79	1017	1.85	41.89	3.75	623	1.89
Currently using (exposed)	5.57	.89	1436	1.47	55.45	2.84	734	1.54	33.41	3.94	437	1.74
Using effective (exposed)	5.50	.87	1436	1.45	52.45	2.98	734	1.62	31.12	3.88	437	1.75
Wants no more and using eff.(exp)	14.79	2.33	426	1.35	66.88	2.46	480	1.14	44.62	5.10	251	1.62
Never used contraception	89.52	1.23	2185	1.88	35.50	2.77	1017	1.85	57.23	3.77	622	1.90
Used contraception in past	6.73	.77	2185	1.44	24.48	1.09	1017	.81	19.29	1.62	622	1.02
Currently using contraception	3.75	.61	2185	1.49	40.02	2.46	1017	1.60	23.47	3.28	622	1.93

Table I.7b - Sampling errors by differences between type of locality subclasses

Variable name	Metropolitan - Urban: Lower Egypt				Metropolitan - Urban: Upper Egypt			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	.18	.25	1362	1.60	1.41	.36	956	1.94
Age at first marriage (<25)	.02	.19	955	1.25	1.12	.25	666	1.49
First marriage dissolved	2.68	1.53	1363	1.15	1.25	2.09	957	1.28
Time spent in union	-.53	.82	1363	1.16	-.18	.91	957	1.03
Currently married	-1.82	1.01	1363	1.01	-1.77	1.10	957	.93
Births in first 5 years	-.05	.06	1045	1.30	-.03	.08	740	1.46
Births in past 5 years	-.12	.06	925	1.33	-.35	.08	657	1.37
Currently pregnant	-2.55	1.62	1263	1.21	-5.57	2.16	889	1.25
Children ever born	-.10	.11	1363	.99	-.65	.12	957	.81
Living children	-.09	.08	1363	1.00	-.23	.09	957	.86
Additional children wanted	.02	.06	1113	1.24	-.51	.19	789	2.05
Breastfed last closed interval	1.97	2.07	1056	1.58	1.61	1.50	761	.98
Months breastfed closed interval	-.47	.59	1056	1.31	-3.51	.77	761	1.28
Wants no more children	.62	2.52	1151	1.27	10.90	3.60	816	1.48
Desired family size	-.10	.10	1250	1.56	-1.03	.19	878	1.86
Knows an effective method	1.35	.91	1363	1.56	5.08	2.21	957	2.15
Ever used contraceptives	3.53	3.38	1363	1.86	25.34	4.45	957	1.99
Ever used any effective method	2.97	3.41	1363	1.86	24.60	4.42	957	1.98
Currently using (exposed)	-.21	3.54	985	1.58	21.83	4.74	676	1.82
Using effective (exposed)	-1.35	3.57	985	1.59	19.98	4.53	676	1.77
Wants no more and using eff.(exp)	-3.93	3.18	647	1.20	18.32	5.62	400	1.61
Never used contraception	-3.73	3.39	1362	1.86	-25.47	4.43	955	1.98
Used contraception in past	3.40	1.62	1362	.97	8.59	2.01	955	1.08
Currently using contraception	.33	2.99	1362	1.59	16.88	3.95	955	1.96

Variable name	Urban: Lower Egypt - Upper Egypt				Villages: Lower Egypt - Upper Egypt			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	1.23	.35	771	1.74	.86	.20	2487	2.13
Age at first marriage (<25)	1.10	.25	532	1.27	.67	.18	1686	1.80
First marriage dissolved	-1.43	2.23	772	1.26	-5.34	1.24	2497	1.14
Time spent in union	.35	1.07	772	1.11	1.14	.60	2497	1.14
Currently married	.06	1.07	772	.84	2.37	.83	2497	.98
Births in first 5 years	.02	.09	591	1.51	.12	.04	1972	1.38
Births in past 5 years	-.23	.09	527	1.33	-.02	.05	1702	1.33
Currently pregnant	-3.02	2.35	720	1.22	-1.95	1.10	2248	.98
Children ever born	-.55	.12	772	.75	.08	.10	2497	1.06
Living children	-.14	.10	772	.83	.50	.07	2497	1.10
Additional children wanted	-.53	.19	640	2.03	-2.27	.18	1917	1.83
Breastfed last closed interval	-.36	2.32	612	1.32	1.07	.77	1908	1.07
Months breastfed closed interval	-3.05	.80	612	1.24	-2.70	.55	1908	1.41
Wants no more children	10.27	3.96	662	1.47	27.96	2.19	2043	1.48
Desired family size	-.93	.20	712	1.86	-2.22	.19	2199	2.11
Knows an effective method	3.73	2.41	772	2.15	28.04	2.36	2497	2.24
Ever used contraceptives	21.81	4.71	772	1.89	22.56	2.39	2497	2.19
Ever used any effective method	21.63	4.68	772	1.88	21.75	2.34	2497	2.16
Currently using (exposed)	22.04	4.86	547	1.67	18.56	2.08	1654	1.82
Using effective (exposed)	21.33	4.89	547	1.70	17.65	2.02	1654	1.79
Wants no more and using eff.(exp)	22.25	5.64	329	1.48	18.84	3.24	616	1.45
Never used contraception	-21.74	4.69	771	1.89	-22.48	2.40	2478	2.19
Used contraception in past	5.19	1.95	771	.94	9.75	1.32	2478	1.51
Currently using contraception	16.55	4.11	771	1.79	12.73	1.49	2478	1.86

Table I.8a – Sampling errors by type of place of residence

Variable name	Urban				Rural			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	18.68	.11	3702	1.60	17.08	.10	5063	2.16
Age at first marriage (<25)	17.84	.08	2624	1.21	16.85	.10	3451	1.85
First marriage dissolved	14.93	.68	3705	1.16	17.41	.61	5083	1.14
Time spent in union	94.56	.33	3705	1.06	94.10	.29	5083	1.12
Currently married	92.28	.47	3705	1.06	90.36	.42	5083	1.01
Births in first 5 years	1.89	.02	2869	1.23	1.80	.02	4003	1.32
Births in past 5 years	1.02	.03	2532	1.29	1.35	.03	3471	1.40
Currently pregnant	13.13	.72	3419	1.25	17.00	.55	4593	.99
Children ever born	3.89	.05	3705	1.10	4.31	.05	5083	1.11
Living children	3.08	.04	3705	1.04	3.17	.04	5083	1.14
Additional children wanted	.69	.04	3011	1.48	1.88	.08	3924	1.70
Breastfed last closed interval	90.38	.71	2880	1.30	94.89	.37	3911	1.04
Months breastfed closed interval	14.25	.24	2880	1.17	19.08	.24	3911	1.31
Wants no more children	63.58	1.04	3116	1.21	45.35	1.07	4172	1.39
Desired family size	3.21	.05	3380	1.51	4.76	.09	4500	2.00
Knows an effective method	97.27	.46	3705	1.73	84.10	.98	5083	1.92
Ever used contraceptives	62.78	1.48	3705	1.86	23.14	1.23	5083	2.09
Ever used any effective method	61.54	1.49	3705	1.86	22.39	1.21	5083	2.07
Currently using (exposed)	51.67	1.55	2667	1.60	16.34	1.11	3391	1.74
Using effective (exposed)	48.18	1.53	2667	1.59	15.72	1.07	3391	1.71
Wants no more and using eff.(exp)	61.37	1.67	1724	1.42	28.43	1.68	1544	1.47
Never used contraception	37.10	1.48	3698	1.86	76.72	1.24	5052	2.09
Used contraception in past	25.53	.84	3698	1.17	12.25	.71	5052	1.54
Currently using contraception	37.37	1.29	3698	1.62	11.03	.78	5052	1.76

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Table I.8b – Sampling errors by differences between
type of place of residence subclasses

Variable name	Urban – Rural			
	Mean or per cent	SE	n	DEFT
Age at first marriage	1.60	.15	4276	1.80
Age at first marriage (<25)	1.00	.12	2981	1.49
First marriage dissolved	-2.49	.91	4285	1.15
Time spent in union	.46	.44	4285	1.08
Currently married	1.92	.63	4285	1.04
Births in first 5 years	.10	.03	3342	1.27
Births in past 5 years	-.33	.04	2928	1.34
Currently pregnant	-3.87	.91	3919	1.14
Children ever born	-.43	.07	4285	1.10
Living children	-.09	.05	4285	1.09
Additional children wanted	-1.19	.09	3407	1.65
Breastfed last closed interval	-4.50	.80	3317	1.23
Months breastfed closed interval	-4.83	.34	3317	1.23
Wants no more children	18.23	1.49	3567	1.29
Desired family size	-1.56	.10	3860	1.85
Knows an effective method	13.17	1.09	4285	1.88
Ever used contraceptives	39.64	1.93	4285	1.95
Ever used any effective method	39.15	1.92	4285	1.94
Currently using (exposed)	35.33	1.91	2985	1.65
Using effective (exposed)	32.46	1.87	2985	1.63
Wants no more and using eff.(exp)	32.94	2.37	1629	1.44
Never used contraception	-39.62	1.93	4270	1.95
Used contraception in past	13.27	1.10	4270	1.29
Currently using contraception	26.35	1.51	4270	1.66

Table I.9a - Sampling errors by woman's level of education

Variable name	Illiterate: no school				Illiterate: some school				Can read and write			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	17.01	.08	5133	1.69	17.19	.09	1638	1.16	18.53	.16	857	1.17
Age at first marriage (<25)	16.76	.07	3664	1.52	16.96	.10	1125	1.08	17.90	.12	619	1.00
First marriage dissolved	18.35	.59	5149	1.10	16.15	.93	1641	1.02	14.70	1.23	857	1.02
Time spent in union	94.03	.30	5149	1.18	94.03	.48	1641	.99	94.57	.67	857	1.07
Currently married	90.44	.42	5149	1.03	91.41	.63	1641	.91	91.13	1.10	857	1.13
Births in first 5 years	1.79	.02	4206	1.20	1.90	.03	1268	.94	2.01	.04	676	.98
Births in past 5 years	1.29	.02	3639	1.24	1.22	.04	1114	1.10	1.01	.05	595	1.03
Currently pregnant	16.00	.57	4657	1.07	15.53	.97	1500	1.03	12.93	1.07	781	.89
Children ever born	4.43	.05	5149	1.06	4.36	.08	1641	1.00	4.07	.10	857	1.04
Living children	3.30	.04	5149	1.13	3.24	.06	1641	1.06	3.22	.08	857	1.06
Additional children wanted	1.70	.07	3973	1.58	1.15	.06	1278	1.04	.75	.07	684	1.14
Breastfed last closed interval	94.50	.36	4073	1.02	93.90	.60	1278	.89	91.96	.99	672	.94
Months breastfed closed interval	18.66	.22	4073	1.21	17.47	.35	1278	1.06	14.90	.40	672	.97
Wants no more children	49.30	1.05	4221	1.36	55.13	1.45	1346	1.07	64.49	1.83	704	1.01
Desired family size	4.60	.08	4551	1.79	3.90	.06	1481	1.05	3.48	.08	778	1.06
Knows an effective method	84.62	.95	5149	1.89	94.45	.69	1641	1.23	98.02	.54	857	1.13
Ever used contraceptives	28.59	.97	5149	1.55	42.54	1.64	1641	1.34	60.91	2.00	857	1.20
Ever used any effective method	27.95	.97	5149	1.55	41.38	1.62	1641	1.33	59.98	1.96	857	1.17
Currently using (exposed)	21.32	.87	3476	1.25	30.37	1.72	1113	1.25	50.91	2.36	603	1.16
Using effective (exposed)	20.54	.83	3476	1.21	28.66	1.70	1113	1.25	48.92	2.42	603	1.19
Wants no more and using eff.(exp)	35.89	1.24	1736	1.07	43.65	2.21	614	1.10	62.24	2.85	392	1.16
Never used contraception	71.25	.98	5120	1.55	57.33	1.64	1636	1.34	38.88	1.97	854	1.18
Used contraception in past	14.18	.63	5120	1.30	21.94	1.15	1636	1.12	25.18	1.46	854	.98
Currently using contraception	14.57	.63	5120	1.27	20.72	1.24	1636	1.24	35.95	1.87	854	1.14

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Variable name	Primary				Secondary				University			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	19.02	.17	409	.90	21.89	.18	501	1.02	24.35	.19	227	.88
Age at first marriage (<25)	18.58	.19	286	1.05	20.80	.17	273	.98	22.28	.20	108	.95
First marriage dissolved	13.56	1.55	413	.92	6.39	1.20	501	1.10	6.17	1.38	227	.86
Time spent in union	94.96	.74	413	.88	97.75	.55	501	1.02	97.13	.74	227	.83
Currently married	92.25	1.03	413	.79	95.41	.92	501	.98	94.71	1.63	227	1.10
Births in first 5 years	1.87	.06	317	.97	1.83	.05	271	1.02	1.77	.10	134	1.26
Births in past 5 years	1.10	.07	282	1.14	.83	.04	248	.72	.94	.10	125	1.21
Currently pregnant	13.91	1.89	381	1.07	14.85	1.72	478	1.06	12.56	2.11	215	.93
Children ever born	3.40	.12	413	1.01	2.06	.08	501	1.03	1.82	.09	227	.89
Living children	2.87	.10	413	1.00	1.86	.07	501	1.05	1.70	.08	227	.98
Additional children wanted	.64	.06	346	.95	.76	.05	452	.92	.75	.08	202	1.05
Breastfed last closed interval	86.58	2.03	313	1.05	82.97	2.13	317	1.01	81.88	3.12	138	.95
Months breastfed closed interval	12.22	.54	313	1.00	8.20	.40	317	.92	6.20	.59	138	1.17
Wants no more children	64.20	2.59	352	1.01	55.87	2.23	460	.96	55.12	3.84	205	1.10
Desired family size	2.96	.06	379	.92	2.51	.03	476	.80	2.53	.04	215	.73
Knows an effective method	98.31	.72	413	1.13	99.80	.20	501	.98	99.56	.43	227	.97
Ever used contraceptives	66.10	2.58	413	1.10	72.65	2.00	501	1.00	76.21	3.15	227	1.11
Ever used any effective method	64.41	2.54	413	1.08	70.66	2.01	501	.99	73.13	3.20	227	1.09
Currently using (exposed)	55.52	2.81	299	.98	66.07	2.37	389	.99	69.10	3.32	178	.95
Using effective (exposed)	51.51	2.69	299	.93	57.84	2.56	389	1.02	62.36	3.64	178	1.00
Wants no more and using eff.(exp)	63.96	3.26	197	.95	70.14	3.33	221	1.08	75.00	4.26	108	1.02
Never used contraception	33.74	2.58	412	1.10	27.35	2.00	501	1.00	23.79	3.15	227	1.11
Used contraception in past	25.73	2.15	412	1.00	21.36	2.11	501	1.15	22.03	1.91	227	.69
Currently using contraception	40.53	2.33	412	.96	51.30	2.31	501	1.03	54.19	3.20	227	.97

Table I.9b – Sampling errors by differences between woman's level of education subclasses

Variable name	Illiterate: no school – some school				Illiterate: some school – can read and write				Can read and write – primary			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	−.18	.10	2483	1.09	−1.34	.18	1125	1.15	−.49	.23	553	.99
Age at first marriage (<25)	−.19	.11	1721	1.04	−.94	.17	798	1.08	−.68	.21	391	.96
First marriage dissolved	2.20	1.02	2488	.96	1.45	1.57	1125	1.04	1.14	1.89	557	.91
Time spent in union	.00	.58	2488	1.04	−.54	.83	1125	1.04	−.39	1.04	557	.98
Currently married	−.96	.72	2488	.90	.28	1.26	1125	1.06	−1.12	1.45	557	.88
Births in first 5 years	−.11	.03	1948	.85	−.11	.04	881	.87	.13	.07	431	1.00
Births in past 5 years	.06	.04	1705	1.07	.22	.05	775	.97	−.09	.08	382	1.08
Currently pregnant	.46	1.12	2269	1.04	2.60	1.32	1027	.86	−.98	2.23	512	1.04
Children ever born	.07	.09	2488	1.05	.29	.13	1125	1.03	.67	.14	557	.88
Living children	.06	.07	2488	1.09	.02	.10	1125	1.01	.35	.11	557	.91
Additional children wanted	.54	.08	1933	1.08	.40	.09	891	1.07	.11	.08	459	.88
Breastfed last closed interval	.60	.68	1945	.90	1.93	1.10	880	.89	5.38	2.23	427	1.02
Months breastfed closed interval	1.19	.38	1945	1.01	2.57	.55	880	1.06	2.68	.70	427	1.04
Wants no more children	−5.83	1.76	2041	1.13	−9.36	2.23	924	.99	.28	2.85	469	.91
Desired family size	.70	.09	2234	1.24	.42	.09	1020	.88	.52	.11	509	1.00
Knows an effective method	−9.84	1.28	2488	1.70	−3.56	.80	1125	1.08	−.29	.79	557	1.00
Ever used contraceptives	−13.95	1.76	2488	1.28	−18.38	2.22	1125	1.07	−5.19	3.03	557	1.06
Ever used any effective method	−13.43	1.71	2488	1.25	−18.60	2.14	1125	1.03	−4.43	2.97	557	1.03
Currently using (exposed)	−9.05	1.86	1686	1.20	−20.54	2.76	782	1.12	−4.61	3.46	399	.98
Using effective (exposed)	−8.12	1.81	1686	1.19	−20.26	2.76	782	1.13	−2.58	3.28	399	.93
Wants no more and using eff.(exp)	−7.76	2.42	907	1.05	−18.60	3.44	478	1.09	−1.71	3.92	262	.93
Never used contraception	13.92	1.76	2479	1.28	18.46	2.21	1122	1.07	5.14	3.00	555	1.05
Used contraception in past	−7.76	1.33	2479	1.17	−3.23	1.71	1122	.95	−.55	2.21	555	.85
Currently using contraception	−6.15	1.32	2479	1.19	−15.23	2.08	1122	1.08	−4.59	2.81	555	.96

Variable name	Primary – secondary				Secondary – university			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	−2.87	.24	450	.96	1.02	.20	901	1.06
Age at first marriage (<25)	−2.22	.27	279	1.11	.56	.22	547	1.17
First marriage dissolved	7.17	2.11	452	1.05	−2.96	1.57	903	1.00
Time spent in union	−2.78	.91	452	.91	1.06	.77	903	1.05
Currently married	−3.16	1.52	452	.94	2.23	1.16	903	1.06
Births in first 5 years	.04	.07	292	.90	−.03	.06	645	1.04
Births in past 5 years	.27	.08	263	.97	.03	.06	581	.98
Currently pregnant	−.94	2.20	424	.91	4.82	1.52	852	.79
Children ever born	1.34	.15	452	1.02	−.67	.15	903	1.05
Living children	1.01	.12	452	1.07	−.50	.11	903	1.07
Additional children wanted	−.12	.08	391	.95	−.13	.16	755	1.35
Breastfed last closed interval	3.62	2.68	314	.94	−1.21	1.54	659	1.04
Months breastfed closed interval	4.02	.63	314	.91	−1.75	.60	659	.96
Wants no more children	8.33	3.31	398	.96	−4.61	2.71	784	1.07
Desired family size	.45	.08	421	.98	−.54	.17	845	1.45
Knows an effective method	−1.50	.75	452	1.12	4.19	1.77	903	1.45
Ever used contraceptives	−6.55	3.27	452	1.07	−1.20	2.49	903	1.09
Ever used any effective method	−6.25	3.19	452	1.02	−.81	2.46	903	1.08
Currently using (exposed)	−10.55	3.63	338	.97	−2.07	2.73	617	1.05
Using effective (exposed)	−6.34	3.58	338	.94	−2.22	2.70	617	1.06
Wants no more and using eff.(exp)	−6.18	4.67	208	1.01	−.19	3.95	306	.98
Never used contraception	6.39	3.28	452	1.07	1.32	2.50	901	1.09
Used contraception in past	4.37	2.92	452	1.03	.73	1.88	901	1.03
Currently using contraception	−10.76	3.09	452	.94	−2.06	1.94	901	1.03

Table I.10a - Sampling errors by woman's pattern of work

Variable name	Before and after marriage				After marriage only				Before marriage only				Never worked			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	20.11	.34	1019	2.18	17.02	.16	663	1.19	18.43	.20	484	1.10	17.41	.07	6598	1.55
Age at first marriage (<25)	18.67	.28	623	1.85	16.77	.16	557	1.19	17.68	.21	291	1.18	17.13	.06	4604	1.38
First marriage dissolved	15.05	1.20	1023	1.08	31.67	1.89	663	1.04	12.37	1.46	485	.97	15.33	.51	6616	1.15
Time spent in union	93.78	.72	1023	1.09	88.67	.96	663	1.09	95.99	.73	485	1.04	94.93	.24	6616	1.09
Currently married	90.52	.86	1023	.94	79.49	1.60	663	1.02	94.43	1.12	485	1.08	92.20	.32	6616	.98
Births in first 5 years	1.78	.04	722	1.06	1.76	.04	585	1.01	1.82	.05	344	1.02	1.85	.02	5221	1.25
Births in past 5 years	1.33	.04	626	1.06	1.18	.05	440	1.02	1.23	.06	310	.95	1.20	.02	4627	1.34
Currently pregnant	14.79	1.17	926	1.00	15.94	1.69	527	1.06	19.87	1.56	458	.84	15.05	.48	6100	1.05
Children ever born	3.38	.12	1023	1.33	4.77	.13	663	1.13	3.56	.14	485	1.04	4.23	.04	6616	1.09
Living children	2.60	.09	1023	1.33	3.52	.10	663	1.17	2.71	.10	485	1.06	3.21	.03	6616	1.11
Additional children wanted	1.29	.15	830	1.90	.82	.09	431	1.06	1.29	.16	407	1.42	1.42	.05	5266	1.51
Breastfed last closed interval	90.91	1.10	726	1.03	93.65	1.00	551	.96	92.05	1.48	352	1.02	93.26	.39	5162	1.11
Months breastfed closed interval	15.94	.57	726	1.32	17.41	.46	551	.94	15.50	.60	352	.99	17.25	.19	5162	1.16
Wants no more children	49.60	2.52	867	1.48	63.62	2.40	459	1.07	48.58	2.60	422	1.07	53.19	.82	5539	1.22
Desired family size	3.68	.15	913	1.83	3.79	.12	520	1.10	3.68	.16	455	1.42	4.22	.06	5991	1.80
Knows an effective method	92.77	1.66	1023	2.05	91.10	1.23	663	1.11	92.99	1.53	485	1.32	88.80	.69	6616	1.78
Ever used contraceptives	42.23	2.99	1023	1.94	42.53	2.65	663	1.38	38.14	2.48	485	1.12	39.34	.96	6616	1.60
Ever used any effective method	40.66	2.99	1023	1.95	40.57	2.59	663	1.36	37.73	2.46	485	1.12	38.54	.97	6616	1.62
Currently using (exposed)	36.44	2.79	730	1.57	35.73	2.75	375	1.11	29.00	2.68	331	1.07	31.08	1.01	4621	1.48
Using effective (exposed)	32.88	2.59	730	1.49	34.40	2.69	375	1.10	27.19	2.69	331	1.10	29.41	.98	4621	1.47
Wants no more and using eff.(exp)	46.45	3.01	366	1.15	47.46	3.02	236	.93	45.40	4.01	163	1.03	45.59	1.34	2503	1.35
Never used contraception	57.73	2.99	1022	1.93	57.34	2.64	661	1.37	61.78	2.49	484	1.13	60.45	.96	6582	1.60
Used contraception in past	16.24	1.44	1022	1.25	22.09	1.97	661	1.22	18.39	1.81	484	1.03	17.65	.58	6582	1.24
Currently using contraception	26.03	2.15	1022	1.57	20.57	1.62	661	1.03	19.83	1.88	484	1.04	21.89	.77	6582	1.52

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Table I.11a – Sampling errors by husband's occupation

Variable name	Prof., Tech. & Admin.				Clerical				Sales				Farmers			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	20.97	.15	900	1.07	19.73	.22	454	1.10	17.48	.17	547	1.08	16.73	.11	1840	1.37
Age at first marriage (<25)	19.83	.13	538	.95	18.77	.19	315	1.04	17.06	.17	422	1.13	16.50	.10	1298	1.26
First marriage dissolved	10.33	1.03	900	1.01	12.25	1.57	457	1.02	20.48	1.94	547	1.13	16.52	1.20	1846	1.38
Time spent in union	94.86	.80	900	1.15	95.44	.82	457	1.02	92.98	.92	547	1.08	94.77	.50	1846	1.23
Currently married	92.22	.86	900	.97	93.00	1.27	457	1.06	89.40	1.42	547	1.08	91.33	.81	1846	1.23
Births in first 5 years	1.87	.04	600	1.14	1.95	.05	330	.94	1.96	.05	464	1.05	1.84	.03	1499	1.05
Births in past 5 years	1.02	.06	530	1.36	.99	.06	291	.93	1.14	.06	400	1.10	1.29	.03	1330	1.11
Currently pregnant	15.06	1.40	830	1.13	12.47	1.61	425	1.00	13.29	1.69	489	1.10	15.07	.93	1686	1.06
Children ever born	2.73	.08	900	1.06	3.33	.12	457	1.00	4.80	.15	547	1.06	4.76	.09	1846	1.12
Living children	2.30	.06	900	1.04	2.82	.10	457	.96	3.63	.12	547	1.11	3.55	.07	1846	1.19
Additional children wanted	.86	.06	771	1.01	.78	.07	383	.97	1.09	.12	423	.97	1.71	.10	1400	1.37
Breastfed last closed interval	86.71	1.39	617	1.01	90.18	1.77	326	1.07	93.81	1.25	452	1.10	95.19	.57	1436	1.00
Months breastfed closed interval	10.15	.37	617	1.05	13.58	.51	326	.97	16.55	.46	452	.89	19.37	.33	1436	1.07
Wants no more children	57.74	2.04	788	1.16	58.52	2.35	393	.94	62.79	2.32	438	1.00	48.44	1.44	1503	1.12
Desired family size	2.97	.06	826	1.04	3.09	.08	423	1.08	3.95	.15	485	1.20	4.96	.11	1634	1.52
Knows an effective method	98.00	.56	900	1.20	97.16	.80	457	1.03	90.68	1.41	547	1.13	86.02	1.48	1846	1.83
Ever used contraceptives	65.22	1.96	900	1.23	64.55	2.33	457	1.04	49.73	2.55	547	1.19	22.97	1.36	1846	1.39
Ever used any effective method	63.22	1.97	900	1.22	63.68	2.34	457	1.04	47.90	2.48	547	1.16	22.10	1.31	1846	1.36
Currently using (exposed)	55.96	2.16	663	1.12	55.29	3.04	340	1.13	41.55	2.68	373	1.05	16.89	1.05	1249	.99
Using effective (exposed)	50.08	2.24	663	1.15	52.06	2.85	340	1.05	37.80	2.78	373	1.10	16.25	1.00	1249	.96
Wants no more and using eff.(exp)	64.99	2.54	397	1.06	65.85	3.43	205	1.03	52.07	3.71	242	1.15	28.24	1.59	609	.87
Never used contraception	34.71	1.96	899	1.23	35.31	2.34	456	1.04	50.18	2.56	546	1.20	76.92	1.36	1837	1.39
Used contraception in past	23.92	1.40	899	.99	23.46	2.23	456	1.12	21.43	1.87	546	1.06	11.54	1.05	1837	1.41
Currently using contraception	41.38	2.04	899	1.24	41.23	2.47	456	1.07	28.39	1.98	546	1.02	11.54	.75	1837	1.00

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Variable name	Agricultural workers				Services				Manual			
	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT	Mean or per cent	SE	n	DEFT
Age at first marriage	16.88	.11	1473	1.33	17.04	.12	1027	1.14	17.86	.09	2516	1.25
Age at first marriage (<25)	16.70	.13	989	1.38	16.66	.11	778	1.07	17.46	.09	1729	1.16
First marriage dissolved	18.32	1.04	1479	1.03	18.66	1.44	1029	1.18	16.14	.75	2522	1.03
Time spent in union	93.48	.62	1479	1.21	94.44	.61	1029	1.18	94.30	.39	2522	1.03
Currently married	89.32	.76	1479	.94	91.25	.97	1029	1.10	91.79	.58	2522	1.07
Births in first 5 years	1.73	.03	1178	1.20	1.75	.03	882	1.01	1.89	.03	1912	1.09
Births in past 5 years	1.42	.04	1010	1.07	1.14	.04	769	1.12	1.18	.03	1667	1.10
Currently pregnant	18.85	1.21	1321	1.12	11.18	.96	939	.93	16.29	.93	2315	1.21
Children ever born	4.16	.09	1479	1.11	4.61	.10	1029	1.04	3.97	.06	2522	1.01
Living children	2.99	.07	1479	1.15	3.46	.08	1029	1.07	3.04	.04	2522	1.00
Additional children wanted	2.37	.13	1150	1.32	1.04	.09	787	1.15	1.03	.07	2015	1.63
Breastfed last closed interval	94.94	.57	1147	.88	94.10	.69	848	.85	91.93	.61	1958	1.00
Months breastfed closed interval	20.52	.39	1147	1.05	17.16	.42	848	1.12	16.06	.29	1958	1.16
Wants no more children	39.74	1.63	1213	1.16	59.43	2.20	838	1.29	57.04	1.37	2109	1.27
Desired family size	5.08	.11	1306	1.29	3.90	.11	918	1.23	3.62	.07	2281	1.56
Knows an effective method	76.94	1.51	1479	1.38	94.17	.88	1029	1.20	93.34	.79	2522	1.59
Ever used contraceptives	14.20	.98	1479	1.08	44.90	2.38	1029	1.53	49.56	1.39	2522	1.39
Ever used any effective method	13.66	1.03	1479	1.16	44.22	2.37	1029	1.53	48.73	1.43	2522	1.44
Currently using (exposed)	9.44	.96	964	1.02	33.70	2.32	733	1.33	38.57	1.34	1732	1.15
Using effective (exposed)	9.02	.93	964	1.00	32.33	2.34	733	1.35	36.95	1.33	1732	1.14
Wants no more and using eff.(exp)	20.05	2.09	379	1.02	47.60	2.63	437	1.10	52.30	1.65	998	1.04
Never used contraception	85.72	.98	1471	1.08	54.84	2.34	1023	1.50	50.20	1.39	2510	1.40
Used contraception in past	8.09	.84	1471	1.18	20.82	1.37	1023	1.08	23.07	.93	2510	1.11
Currently using contraception	6.19	.64	1471	1.03	24.34	1.74	1023	1.30	26.73	1.03	2510	1.17