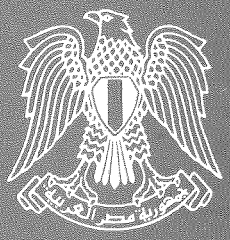

Central Agency for Public Mobilisation and Statistics

THE EGYPTIAN FERTILITY SURVEY

1980

Volume III

Socio-Economic Differentials and Comparative Data from Husbands and Wives

World Fertility Survey
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Volume III

Socio-Economic Differentials and Comparative Data from Husbands and Wives

Editors

CAPMAS	Awad M. Hallouda
	Saad Zaghloul Amin
The World Bank	Susan Hill Cochrane
WFS	Samir M. Farid

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CHAPTER 1

INTRODUCTION AND OVERVIEW

1.1 THE GENERAL OBJECTIVES

The primary purpose of the Egyptian Fertility Survey (EFS) was to document the levels of fertility and to understand their possible determinants. The first-phase survey carefully documents actual levels of fertility (past and present), and the attitudes of wives, their preferences and knowledge which directly and indirectly affect fertility. The first-phase survey also documented the sociological and background factors affecting the biological, attitudinal, and behavioral determinants of fertility. The second phase enriched the data by attitudinal and cognitive data collected from a subsample of husbands and by data on the economic characteristics of a subsample of households. The two major objectives of the second-phase survey were (1) to compare the attitudes, preferences, knowledge and reported behavior of husbands and wives and (2) to examine the effect of household income on the fertility attitudes, preferences and behavior of husbands and wives.

1.2 THE SAMPLE METHODOLOGY

To achieve the objectives described above, the second phase of the Egyptian Fertility Survey collected data from a subsample of one-third of the households in which a woman was interviewed in the first phase of the survey which had taken place two months previously. The details of sample design and questionnaire content are given in volume I of this report.

The first phase collected data in early 1980 on a random sample of 8878 ever-married women in 200 clusters. The second round was determined by randomly selecting 100 clusters and randomly selecting two-thirds of the households in each cluster in which a wife was successfully interviewed in the first phase. As a result, economic data on 2482 households and data from 2312 husbands were collected in May 1980.

The economic questionnaire was designed to collect data on household income in 1979. It was used to probe, in detail, income from: (1) employment (first and second jobs); (2) farming and other agricultural activities; (3) other household enterprises and activities; and (4) income from remittances, interests and dividends. In addition, to provide cross checks, data were collected on employment and earnings in the month prior to the survey and a question was asked on average household expenditures in the preceding year. Two other sections were added to the questionnaire. A section on ownership of consumer durables and household amenities (water supply, sanitation and electricity) was added to enrich the data on the physical quality of life of the household. A section was also added on the enrollment of children in school and expenditures on schooling to illuminate both the determinants of school participation and the effect of schooling on fertility.

In the identified subsample, there were 2783 women who had been successfully interviewed in the first phase, but because some husbands were residing elsewhere (10 per cent), and because of non-response, there were only 2312 husbands successfully interviewed. Of these, 133 were eliminated from the core sample to be used in this paper for the following reasons: either the wives' questionnaire was missing (27), or the husband was polygamous (101), or data were missing (5). For the 2179 husbands that remained, detailed data is available on marital history, family size preferences, perceived benefits of and educational aspirations for children, knowledge of and perceived access to contraceptives and contraceptive use. These data can be linked to identical data collected from their wives.

1.3 THE ANALYSIS OF DATA

Comparing the fertility attitudes, preferences, knowledge and behavior of husbands and wives is relatively simple in that it is purely descriptive. The report makes two types of comparison: first, it reports the responses of all men and all women and the differentials in the responses across social and economic groups. Secondly, husbands and wives are matched and their agreement and disagreement reported. The purpose of these comparisons is primarily descriptive, but in the final analysis the attitudes, preferences and knowledge of husbands and wives are of interest to the extent they may affect behavior. Therefore, at the end of the report, the relative importance of husband's and wife's family size preferences in determining contraceptive behavior is discussed. These comparisons and their implications for design-

ing family planning programs are discussed in the last chapter of the report.

It is conceptually much more difficult to examine the effect of household income on fertility than to compare responses across groups because causal analysis has innumerable difficulties that do not arise with respect to simple descriptive work. With these problems in mind it was felt that the first step in analyzing the effect of income on fertility was to simply describe the association between income and the various dimensions of actual fertility behavior (children ever born, child survival, recent fertility and contraceptive use) and fertility attitudes and preferences and contraceptive knowledge. These associations are described in various chapters.

Although a complete causal analysis is not possible in a report of this kind, it is essential to try to put the associations between income and fertility in a causal context. Therefore the next section describes a possible causal relationship between income and fertility. This will be followed by an outline of the remainder of the report. For those who wish to look only at associations and skip causal interpretations, the next section (1.4) may be omitted.

1.4 THE RELATIONSHIP BETWEEN INCOME AND FERTILITY

Income can both affect and be affected by fertility. Past fertility behavior and child survival can affect the number of household members and thus both the number of potential income earners and the number of people who must share in the use of the family's income. In addition, prior fertility may either encourage or discourage additional work by husbands and wives.

Prior levels of income may have affected past fertility and child survival just as current income may affect current and future fertility. While the effect of prior income levels on past fertility cannot be tested with the data in this survey, this possible effect should be kept in mind to the extent that current income is correlated with prior income, the association between current income and prior fertility may reflect to some degree the effect of unmeasured initial income on fertility as well as the effect of prior fertility on current income.

The association between recent and especially current fertility and current per capita income is much more likely to reflect the effect of income on fertility than the effect of fertility on income for several reasons: (1) recent births cannot affect income through child labor since the added children are too young to contribute economically; (2) while recent and current fertility may affect income by affecting the mother's labor participation, this participation is fairly low in Egypt, and in rural areas does not appear to be systematically related to fertility, as will be shown later; (3) while children ever born and surviving can be a major determinant of household income per capita because of its effect on the denominator, family size, the children born in the last five years have a proportionally smaller effect on total family size and thus on per capita measures. Therefore, the association between income and recent and current fertility will tend to be dominated by the effect of income on fertility more than the effect of fertility on income.

The associations between income and fertility attitudes and preferences and contraceptive knowledge and access, as opposed to actual fertility, are much more likely to reflect the effect of income on fertility than the converse effect. Only to the extent that current attitudes, preferences and knowledge are determined by prior fertility does any possibility for the effect of fertility on income arise. For example, while the association between income and desired family size may be expected very largely to reflect the effect of income on desired family size, this is not necessarily the case with respect to the association between income and the desire for additional children because the latter is very heavily dependent on the current number of living children — which affects income and especially income per capita. This point suggests another major problem which confounds causal interpretation of association — the effect of other variables on both income and fertility.

Before exploring these issues, however, it is useful to summarize the various associations between types of fertility variables and income and their causal relationships. This is done in figure 1.1.

The schematic framework in figure 1.1 is designed to explain both the relationship between past income and cumulative fertility and the relationship between current income and current fertility behavior, especially contraceptive use. Current fertility behavior is hypothesized to depend on the natural fertility of a couple (the number of surviving children they could have if they did not regulate fertility), their family size preferences and their knowledge and access to contraceptives. Each of these three major factors have many dimensions which will be explored in later chapters.

As illustrated in figure 1.1, current income can affect current fertility and contraceptive use through improved health and the ability to conceive and successfully deliver, through family size preferences, and through knowledge and access to contraception. The direction of

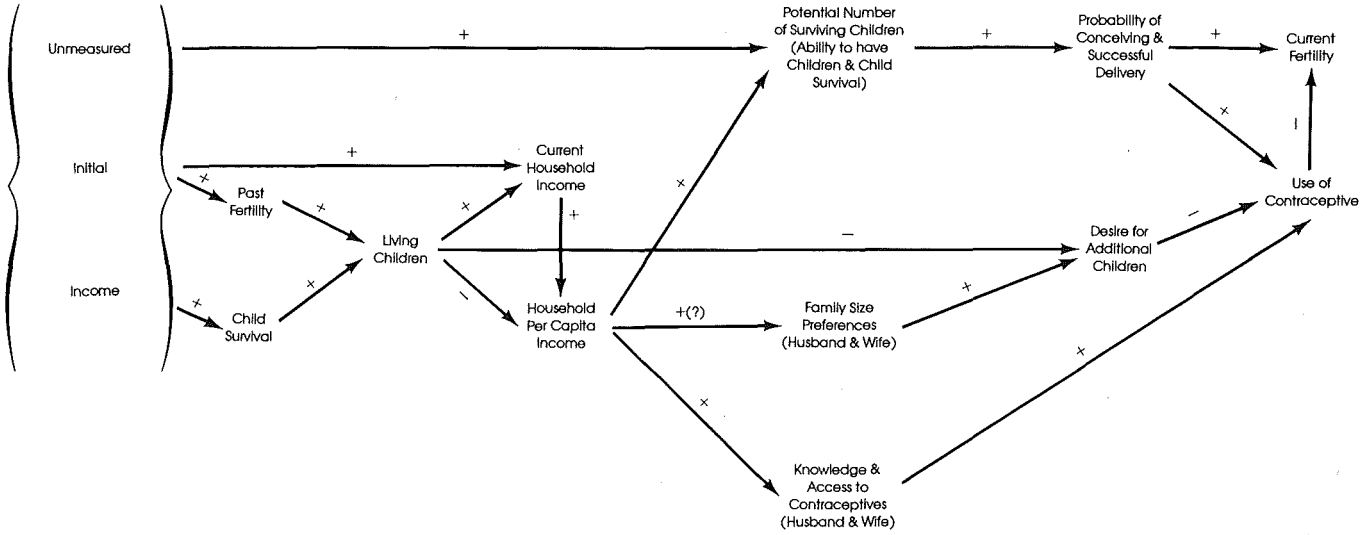

Figure 1.1 Relationship between income and fertility

causation is fairly clear with respect to these variables, but the sign of association is not. While current income probably has a positive effect on ability to conceive and on contraceptive knowledge and access, it is unclear whether it will necessarily have a positive effect on desired family size. While higher income would increase the ability to afford children, it may also lead to even greater increases in the educational aspirations for children and a reduced dependence on child labor and old-age security from children. The sign of the effect of income on current contraceptive use is even more ambiguous because of its probable positive effects through knowledge and access to contraception may be offset by positive effects of income on desired family size.

The associations in the following chapters give some insight into these relations. It must be kept in mind, however, that many other variables affect or are affected by both income and fertility and may therefore obscure the relationship between income and fertility. Figure 1.2 illustrates the most important of these other variables and their relationship to income. Background variables of education, residence, occupation and wife's work pattern affect both income and fertility while other socio-economic variables such as expenditures, type of water supply and use of electricity are affected by income and income probably affects fertility at least in part through these intermediate variables.

In later detailed studies of the effect of income on fertility these other factors will be used as controls or channels through which income operates. In this primarily descriptive analysis, the association of these correlates of current per capita income (whether determinants or consequences) and fertility will be presented along with the associations between income and fertility.

The associations of these other variables with fertility can help in the interpretation of the relationship of income to fertility, as well as provide insight into their own relationship to fertility. In general, the background variables are positively related to income and negatively related to actual fertility and fertility preferences. These variables are positively related to contraceptive knowledge and access, while income is expected to be positively related to the ability to have children and probably also the desire for children as well as contraceptive access and knowledge. Thus the background variables may well disguise positive effects of income on fertility and fertility preferences, but reinforce the observed associations between income and contraceptive knowledge and access. To control to some degree for this possibility, both the association between various dimensions of fertility and per capita income and the association adjusted for wife's education will be reported. Wife's education was selected as the variable of control because of all the background variables it has the strongest association with fertility.

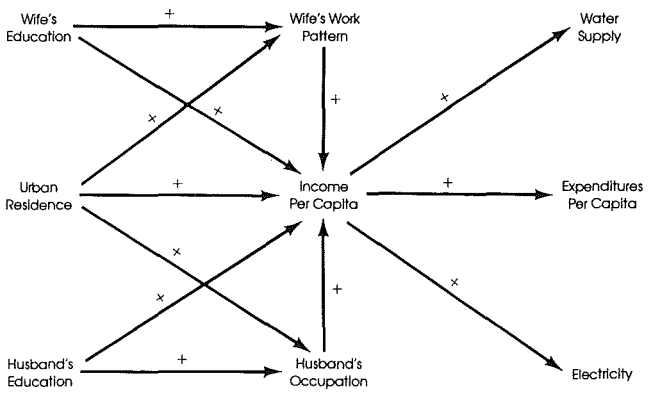

Figure 1.2 Determinants, consequences and correlates of per capita income

The differentials in fertility by current per capita income adjusted for wife's education will provide considerable insight into the effect of income independent of background. It must be remembered, however, that this is just the first step in a complete causal analysis, which, however, cannot be carried out in a study of this kind.

1.5 REPORT OUTLINE

Before proceeding to the substantive portion of the report it is necessary to assess the characteristics of the sample and the quality of the data. This is done in chapter 2. In general, the data seem convincingly good.

After examining the data, the determinants and correlates of income levels are examined in considerable detail. In addition to differences in income by background factors such as education and occupation, differences in income and its correlates by region are explored in considerable detail. These regional patterns, particularly the large urban–rural differentials, suggest, along with other considerations, that in most instances it is necessary to examine the associations between background and socio-economic variables and fertility separately for rural and urban areas.

Chapter 3 also explores in a tentative fashion the effects of fertility on income, in particular the role of child labor in income determination and the effect of fertility on female labor participation.

Chapters 4–6 explicitly examine the various dimensions of fertility in detail. Chapter 4 describes the relationship between background and socio-economic factors and cumulative and current fertility for the second-phase sample. Cumulative fertility is measured by children ever born, proportions surviving and indirect estimates of infant and child mortality. Current fertility is measured by children born in the last five years and total fertility rates. A large portion of this material duplicates relationships explored in volume II for the whole sample. The new contribution of this chapter is the association between fertility and income and its correlates, expenditures, water supply, electricity, etc.

The next two chapters are considerably richer. Chapter 5 examines fertility attitudes and preferences of husbands and wives and their relationship to background and economic factors. These preferences and attitudes differ in some systematic ways between husbands and wives. These attitudes and preferences give insight into the relationship between the perceived benefits of children, the educational aspirations for children and desired family size. The differentials in these dimensions of fertility attitudes and preferences also give insight into the effect of background and economic factors on fertility determination.

Chapter 6 is devoted to knowledge of, access to and use of contraceptives. Here again comparisons of husbands' and wives' answers to questions of this type provide insight into the determination of contraceptive use and thus fertility. Differentials in contraceptive knowledge, access and use provide insight into potential fertility differentials in actual fertility.

The last chapter of the report is a summary designed for drawing policy conclusions. It contains a set of recommendations for short-term policies for increasing contraceptive use through changing family planning knowledge and access and long-term strategies for reducing fertility through socio-economic development.

Finally, it should be mentioned that in terms of the framework sketched in figure 1.1 there is one chapter missing; that is, a chapter on natural fertility. Since variations in natural fertility are difficult to measure, especially in small samples, and are more closely associated with initial income than current income, it was not useful to examine this factor in this report. In later detailed analysis it will be explored.

What follows then is an evaluation of the data (chapter 2), an examination of the determinants and correlates of current income (chapter 3), an examination of actual fertility (chapter 4), fertility attitudes and preferences of husbands and wives (chapter 5), contraceptive knowledge, access and use as reported by husbands and wives (chapter 6), and a review of the findings and their implications for policy (chapter 7).

CHAPTER 2

SAMPLE CHARACTERISTICS AND EVALUATION OF DATA QUALITY

2.1 INTRODUCTION

The basic characteristics of the second-phase sample will be documented in this chapter. The quality of these data will be assessed by comparing these data with characteristics of currently married women in the first-phase sample, as well as making comparisons with the economic characteristics of individuals from other sources of data in Egypt.

2.2 SOCIAL AND DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

The 2482 households surveyed in the second round contained 15 312 individuals — implying an average household size slightly over six. These individuals are divided equally by sex. Twenty-two per cent of the sample reside in the metropolitan regions of Cairo and Alexandria, and 11 and 7 per cent reside in urban areas of Lower and Upper Egypt respectively, while 34 and 26 per cent reside in the rural areas of Lower and Upper Egypt.

Within these 2482 households, there are 2178 couples where husband and wife data can be successfully matched and where the husband has only one wife. This core sample will be used in all the analyses of fertility. Therefore, it is the characteristics of this sample that need to be reviewed and compared with those of the currently married women in the first phase.

Table 2.1 shows the percentage distribution of women in the second-phase survey by the characteristics of wife's age at marriage, residence, education, and occupation; as well as by education and occupation of her husband. These distributions can be compared with the distribution of 8012 currently married women from the first-phase survey.

The comparison of these distributions enables us to assess how representative the subsample is of the total

Table 2.1 Per cent distribution of women by social and demographic characteristics

I — Currently married women aged 15–49 from the first phase
II — Currently married women whose husbands responded in the second phase

Item	Age of wife							Age at first marriage				
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	Under 15	15–19	20–24	25–29	30+
I	8.1	19.1	20.0	17.8	14.8	11.3	8.9	22.3	54.8	17.9	4.2	0.8
II	7.6	18.1	17.6	19.7	15.6	12.2	9.2	23.9	53.2	18.1	4.1	0.8
	$x^2 = 7.23$							$x^2 = 3.49$				

Item	Residence		Wife's education					Husband's education				
	Urban	Rural	None	Incomplete primary	Primary	Secondary	University	None	Incomplete primary	Primary	Secondary	University
I	42.7	57.3	58.1	28.5	4.8	6.0	2.7	41.9	32.4	8.6	10.3	6.8
II	42.4	57.6	56.7	29.6	4.9	6.2	2.7	41.7	30.9	9.5	10.5	7.3
	$x^2 = 0.09$		$x^2 = 1.67$					$x^2 = 4.72$				

Item	Wife's occupation						Husband's occupation					
	Did not work	Prof. or clerical	Sales	Agric.	Services	Manual	Prof.	Clerical	Sales	Agric.	Services	Manual
I	81.4	4.2	0.5	9.8	0.8	3.3	10.5	5.3	6.1	37.5	11.7	27.9
II	81.8	4.9	1.2	8.5	1.1	2.5	11.1	5.6	6.6	38.6	11.9	26.6
	$x_2 = 41.39$						$x^2 = 7.94$					

sample. Given the very high quality of the first-phase survey documented elsewhere, this suggests that if the first and second phases are similar, the second-phase survey is representative of currently married women in Egypt.

Approximately 35 per cent of the women in the subsample are in their 20s, and another 35 per cent in their 30s, while 21 per cent are in their 40s and 8 per cent are under 20. The women in the subsample are slightly older on average than those in the whole sample, which has slightly larger proportions in each age group under 30 and slightly less in each group over 30. The differences are not statistically significant, however.

The distribution by age of marriage is nearly identical for the two phases. Both phases show a vast majority of women married prior to age 20 (77 per cent). The distribution by residence is almost identical as well, with about 57 per cent residing in rural areas.

The distributions by education for the second phase show that 57 per cent of the women and 42 per cent of their husbands have had no schooling, while only 14 per cent of the women and 27 per cent of their husbands have completed primary school or above. The proportion with incomplete primary is almost identical for husbands and wives. Comparisons between the first and second phase show that there is no significant difference in education in the two phases.

The occupations of husbands and wives as reported on the wives' questionnaires cannot be easily compared with each other, since the vast majority of women (more than 81 per cent) have not worked since marriage. For those who have worked since marriage, a larger proportion of the women were in agricultural and manual occupations in the second phase than the first. This difference is statistically significant. For husbands, the vast majority in both phases are in agricultural and manual occupations, and there are no statistically significant differences between the two phases.

Since the patterns of fertility differ so radically between urban and rural areas, it would be desirable to examine the associations between various dimensions of fertility and social and demographic characteristics separately for urban and rural areas. This presents certain problems of sample size, as illustrated in table 2.2.

In rural areas there are relatively few university graduates (male or female), and few in professional occupations. As would be expected, in urban areas there are very few agricultural workers. To correct for these problems, the educational categories of secondary and university will be combined in analyzing fertility. For occupation, the solution will be somewhat different. Since occupation is so closely linked to residence, it will only be related to fertility for the whole country and not for urban and rural areas separately.

Table 2.2 Sample sizes for urban and rural areas by social and demographic characteristics in the second phase of EFS

Area	Age of wife							Age at first marriage				
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	Under 15	15–19	20–24	25–29	30+
Urban	48	133	174	185	163	123	98	154	469	223	68	10
Rural	117	262	210	244	177	143	102	365	690	172	21	7
Total	165	395	384	429	340	266	200	519	1159	395	89	17

Area	Wife's education					Husband's education				
	None	Incomplete primary	Primary	Secondary	University	None	Inomplete primary	Primary	Secondary	University
Urban	376	207	77	112	52	235	291	112	153	133
Rural	860	337	30	22	6	674	383	95	76	27
Total	1236	544	107	134	58	909	674	207	229	160

Area	Wife's occupation						Husband's occupation					
	Did not work	Prof. or clerical	Sales	Agric.	Services	Manual	Prof.	Clerical	Sales	Agric.	Services	Manual
Urban	770	94	11	3	33	23	177	85	86	51	127	398
Rural	1012	12	16	171	1	32	65	36	47	791	133	182
Total	1782	106	27	174	34	55	242	121	133	842	260	580

2.3 FERTILITY CHARACTERISTICS

The preceding section shows that the samples in the two phases of the surveys are remarkably similar with respect to social and demographic characteristics. This would lead us to expect quite similar fertility behavior. Table 2.3 summarizes exposure status, cumulative fertility, recent fertility and contraceptive knowledge and use of the women.

In both phases of the survey approximately 75 per cent of the women are currently fecund and 15 per cent are currently pregnant, 1 per cent have been sterilized and 9 per cent are not fecund for other reasons. There are no statistically significant differences between these two phases on this dimension.

Recent fertility, as measured by children ever born in the last five years, is remarkably similar between the two phases. One-third of the women have had no children in that period, while one-tenth have had three or more.

Cumulative fertility, as measured by children ever born, differs somewhat between the two phases. The second phase has slightly higher fertility, with slightly less women being childless and more women having five or more children (44 versus 41 per cent). These differences are statistically significant. The differences may arise from the fact that the subsample is marginally older than the full sample.

Contraceptive knowledge is almost identical between the two phases, with less than 10 per cent having no knowledge of efficient contraceptives, and only a couple of women know of just inefficient methods. Contraceptive use, however, is higher in the second phase. In the first phase, 41 per cent of the women have ever used efficient contraceptives, compared with 43 per cent in the second. A higher value is also observed for current use in the second phase, with 25 per cent currently using contraceptives in the second, compared with 23 per cent in the first. These differences, while fairly small, are statistically significant, and may arise from the fact that the wives in the subsample have had slightly more children and may therefore be slightly more motivated to practice contraception.

Table 2.4 presents the sample sizes for the various categories of fertility variables by urban and rural areas. The only categories which show extremely small sample sizes are those for sterilization and ever use or current use of inefficient contraceptives.

2.4 THE ECONOMIC CHARACTERISTICS OF THE HOUSEHOLDS

The preceding sections focused on selected social, demographic and fertility variables collected from the wives'

Table 2.3 Per cent distribution of women surveyed in the two phases by fertility characteristics

I — The main sample
II — Subsample

Item	Exposure status				Children born in last 5 years			
	Pregnant	Self or her husband sterilized	Not fecund	Fecund	0	1	2	3+
I	15.4	.8	8.9	74.9	33.6	30.2	26.0	10.3
II	14.6	0.6	9.3	75.5	33.1	30.6	26.4	10.0
	$x^2 = 2.33$				$x^2 = 0.55$			

Item	Children ever born							
	0	1	2	3	4	5	6	7+
I	11.0	12.2	12.7	12.4	10.8	9.4	8.6	22.9
II	9.5	11.3	11.7	11.8	11.8	10.2	9.3	24.3
	$x^2 = 23.19$							

Item	Knowledge of contraception			Ever use			Current use		
	None	Inefficient	Efficient	None	Inefficient	Efficient	None	Inefficient	Efficient
I	9.6	—	90.4	58.4	.9	40.7	75.9	1.4	22.7
II	9.1	.1	90.8	56.1	.9	43.0	73.4	1.3	25.3
	$x^2 = 0.82$			$x^2 = 4.95$			$x^2 = 6.30$		

Table 2.4 Sample sizes for urban and rural areas by fertility characteristics in the second phase of EFS

Area	Exposure status				Children ever born							
	Pregnant	Sterilized	Not fecund	Fecund	0	1	2	3	4	5	6	7+
Urban	107	11	90	715	81	109	130	114	119	86	86	199
Rural	211	3	112	929	126	138	124	144	139	136	117	331
Total	318	14	202	1644	207	247	254	258	258	222	203	530

Area	Children born in the last 5 years				Knowledge of contraception			Ever use of contraceptives		
	0	1	2	3+	None	Inefficient	Efficient	None	Inefficient	Efficient
Urban	359	292	207	58	14	2	908	312	6	606
Rural	362	375	367	123	185	0	1070	911	13	331
Total	721	667	574	181	199	2	1978	1223	19	937

Area	Current use of contraceptives		
	None	Inefficient	Efficient
Urban	326	22	378
Rural	753	7	172
Total	1079	29	550

questionnaire. These answers were compared for the whole sample and the subsample of wives in monogamous marriages whose husbands were successfully interviewed in the second phase. In this section several selected economic characteristics of households will be briefly described, and the quality of the data on these variables will be assessed.

2.4.1 Household income and expenditure

To estimate household income, questions were asked on labor participation in 1979, earnings from that participation if individuals were employees, and net earnings from farming and household enterprises of those who were self-employed or own-account workers. The net earnings from all workers in the family, plus income from rental of agricultural land and real estate, as well as from financial assets, pensions and remittances, were combined to get total household income.

The last two columns of table 2.5 give the distribution of net annual household cash income. The average household income for 1979 was calculated to be 623 LE. About 45 per cent of the sample households had income less than 399 LE, and one-third had incomes between 400 and 799 LE. Fifteen per cent of the households had incomes in excess of 1000 LE in 1979.

It is difficult to assess the quality of these data, but two types of comparisons are possible. First, these cash incomes can be compared with reported expenditures. Second, the per capita income levels in this sample can be compared with national per capita income figures.

As described above, estimates of income for 1979 were obtained from detailed questions on all sources of cash and in-kind income (but only cash reported here). An estimate of expenditures, however, was obtained from one question on the average monthly cash expenditures in 1979. This question was designed to provide a rough check on data quality. In most surveys expenditure data are obtained from very detailed questions and income data are often obtained from a set of short questions. In these types of surveys, expenditures tend to exceed income. The degree to which this results from deliberate concealment of income or from the fact that people are forgetful and need detailed probing is unclear.

In the present survey the probing was on income and as table 2.6 shows, annual cash income tended to exceed annual expenditures in more than 47 per cent of the cases. The ratio of expenditure to income deviates from 1.0 by ± 0.05 or less in about 22 per cent of the cases, and is more than 1.05 in 29 per cent of the cases. While this may only prove that more probing provides higher figures, it does provide some reassurance that people were not grossly under-reporting their cash income.

The pattern of income and expenditures in table 2.5 provides further evidence on this point. In 56 per cent of the cases, cash income and expenditures fell within the

Table 2.5 Per cent distribution of households surveyed in the second phase of EFS, by annual expenditure and annual net cash income

Net annual income LE	Annual expenditure groups (LE)						Average	Total
	—L200	200—	400—	600—	800—	1000+		
<200	34.9	44.0	13.7	5.8	*	*	14.7	364
200—	5.0	74.9	15.7	3.7	*	*	29.8	738
400—	*	21.6	62.3	13.8	1.6	*	20.2	499
600—	*	6.2	34.7	53.9	3.4	1.9	13.1	323
800—	*	3.2	21.8	44.2	25.5	5.3	7.6	188
1000+	*	*	6.1	20.9	21.2	50.1	14.5	359
Average %	6.8	34.5	26.4	18.2	6.0	8.2	100.0	
Total	168	852	653	449	149	203		2473

*Less than five cases.

same broad group. More interesting, however, is the fact that the percentage of cases in which income exceeds expenditures increases as income rises, and the percentage with expenditures exceeding income falls. This is what one would expect from the relationship between income and savings.

The quality of income data can also be assessed by comparing per capita income figures derived from the survey with those estimated from national accounts. In this sample for 1979, the per capita income (cash and in kind) figure is 120 LE.[1] This is considerably below the 250 LE household income reported in a recent study of national accounts for 1979.[2] If taxes are deleted from that figure, as they are from the survey, the figure becomes 232 LE.

The ratio of these two estimates is 52 per cent. Sixty per cent to two-thirds is a rule of thumb of what proportion of income one can expect to capture in this kind of survey.

There are two reasons why the income per capita in this survey is below the figure obtained from national accounts. First and most obvious is that people under-reported their income. Second and far less obvious is the sample design.

It is difficult to assess whether people under-reported income except by examining the plausibility of income for various groups. In the next chapter the earnings and income of various groups are explored in considerable detail. The only hint of under-reporting that emerges from that analysis is that those in urban areas tend to be very unlikely to report second jobs. This is in contradiction to what is generally believed to be the case. Since the legality of government workers having second jobs is ambiguous, there was probably a tendency for these workers, who comprise a large part of the urban work force, to under-report their earnings. If this is in fact the case, it means that urban cash incomes may be under-reported to a larger extent than rural incomes and overall income also underestimated. There is also a tendency for rural income in kind to be under-reported in most surveys. Despite probes on agricultural income in this survey, this may in fact be the case here.

Sample design can affect the estimate of per capita income in a very important way. A perfectly representa-

Table 2.6 Per cent distribution of households surveyed in the second phase of EFS by the ratio of annual expenditure to annual net cash income

Ratio	Percentage	No. of cases
less than .15	0.3	7
.15—.24	0.3	7
.25—.34	0.4	10
.35—.44	1.8	44
.45—.54	3.0	75
.55—.64	4.9	121
.65—.74	7.4	183
.75—.84	12.5	309
.85—.94	16.3	402
.95—1.04	22.4	553
1.05—1.14	7.2	178
1.15—1.24	3.2	87
1.25—1.34	3.1	76
1.35—1.44	1.9	47
1.45—1.54	1.9	47
1.55—1.64	1.3	33
1.65—1.74	1.0	24
1.75—1.84	0.8	14
1.85—1.94	0.6	14
1.95—2.04	0.4	9
2.05—2.14	0.4	9
2.15 & above	6.1	151

[1] If households whose costs in own account work exceeded income are deleted, the per capita income figure is 134 LE.

[2] Amr Mohie El Din *et al An Aggregate Social Accounting Matrix for Egypt — 1979*. The figure of 250 LE *per capita* is the income for households. If one adds in income accruing to other institutions (not covered in the survey), the *per capita* figure for 1979 is 333 LE — slightly above the official estimate for 1979.

tive sample of Egyptian households would be needed to give a completely representative picture of Egyptian economic conditions. While the orginal sample of 10 000 households was representative, this sample was restricted at various stages to a subsample which is not representative. First, the 10 000 households contained 8788 ever-married women from 7858 households. Only one-third of these households were included in the subsample. While the subsample is representative of the sample of households in which there was a currently married woman, as shown above, it is not representative of all households. The magnitude and even the direction of the biases this introduces in estimating per capita income are unclear. It should be kept in mind, however, that the purpose of measuring income in this survey was not to get national estimates of income, but to study the relationship between income and fertility.

These factors must be kept in mind in interpreting the income figures from this survey. Income inequality and sample design issues do not invalidate the cross household or individual comparisons of income from this sample. Systematic under-reporting and systematic differences in prices do make such comparisons difficult. For this reason, urban–rural comparisons are less reliable than comparisons within urban and rural areas.

2.4.2 Employment patterns

The employment pattern of individuals is important for determining how representative the sample in this survey is of the average Egyptian household.

To estimate income for 1979, an attempt was made to determine of every household member over six whether he/she worked at all in 1979. If the answer was negative, there was a probe to be sure that they worked not at all in 1979, whether for the family, themselves or an employer. This probing was designed to include completely women and children whose work is often underestimated in most countries, particularly if it is only seasonal work in agriculture.

This survey also differed from most labor force surveys in that the reference period was the entire preceding year rather than the preceding month or week. This, like the probe, was to capture seasonal work as well as to get income estimates applicable to the entire preceding year.

The survey showed that 56 per cent of the males and 10 per cent of the females of all ages worked at some time in 1979. Table 2.7 illustrates how this differs by age, sex and employment status. Within the prime working ages of 15–60, 76 per cent of the males and 12.4 per cent of the females worked. These figures can be compared to those obtained from the 1980 Labor Force Sample Survey (LFSS).

The age distribution of employees for the two surveys can be compared as well as the overall proportion working. Table 2.8 shows that for males the EFS has a somewhat younger age structure, with 40 per cent under 30 and over 16 per cent under 20, while in the labor force survey the comparable proportions are 37 per cent and 14 per cent. While these differences are statistically significant, they are not larger and may reflect a somewhat greater capturing in the EFS of males who worked for only part of the year — since those are likely to be fairly young.

For females, the age distribution of employees differs greatly between the two surveys. While one-fifth of the women working in the second phase EFS were under 20, this group represents less than a tenth in the Labor Force Sample Survey. For women 20–24, the proportions are

Table 2.7 Distribution of individuals by age, sex, and employment in main job in 1979 (second phase of EFS)

Age group	Proportion not working in 1979		Proportion self-employed		Working for others		Total number	
	M	F	M	F	M	F	M	F
0–5	100.0	100.0	—	—	—	—	1659	153
6–9	96.7	96.9	2.2	1.7	0.9	1.4	771	723
10–14	80.4	93.9	9.3	2.9	10.3	3.3	1020	976
15–19	54.4	89.8	17.8	4.9	27.8	5.3	882	834
20–24	53.0	94.7	14.9	3.5	32.1	9.4	592	658
25–29	15.5	84.2	25.2	6.0	59.3	9.8	477	583
30–34	6.4	82.6	25.9	7.0	67.7	10.4	436	471
35–39	1.7	86.3	32.6	5.8	65.7	7.9	362	480
40–44	1.8	87.8	31.9	5.5	66.3	6.6	392	345
45–49	3.9	89.2	37.5	5.3	58.6	5.5	309	415
50–54	4.9	96.5	45.9	1.8	49.2	1.8	266	114
55–59	6.4	95.8	45.5	3.5	48.0	0.7	202	144
60+	56.5	98.8	31.0	0.9	12.4	0.3	306	344
Total	44.4	90.2	21.0	4.1	34.6	5.7	7674	7625

Table 2.8 Per cent distribution of employees in the subsample (second phase of EFS) and the Labor Force Sample Survey, by age and sex

Age groups	Males		Females	
	Second phase EFS 1980	Labour Force Sample Survey 1980	Second phase EFS 1980	Labour Force Sample Survey 1980
12–14	4.3	3.5	5.7	3.2
15–19	12.1	10.9	13.9	5.8
20–24	9.4	8.7	19.6	20.1
25–29	13.9	13.7	18.0	26.6
30–34	14.5		15.5	
35–39	11.7	25.5	12.0	28.8
40–44	12.8		7.3	
45–49	8.9	20.3	7.3	11.5
50–54	6.4		.6	
55–59	4.8	14.4	.3	3.5
60–64	1.2	2.7	—	.6
Total	100.0	100.0	100.0	100.0
	$x^2 = 40.6$		$x^2 = 74.6$	

nearly identical; while a third of the working women in the EFS were between 25–35, only a quarter were in the LFSS. These differences are both statistically significant and large. This perhaps reflects the greater tendency for women than men (especially young women) to work for only part of the year, and those women are missed with the conventional reference period.

The occupational distribution of the working individuals in the household in the second-phase EFS and the LFSS are shown in table 2.9. For males, the major difference between the two surveys is that almost 13 per cent in the EFS as opposed to 9 per cent in the LFSS

Table 2.9 Per cent distribution of workers (employees and self-employed) in the second phase of EFS and Labor Force Sample Survey, by sex and occupation

Occupation	Males		Females	
	Second phase (EFS) 1980	Labor Force Sample Survey 1980	Second phase (EFS) 1980	Labor Force Sample Survey 1980
Prof., managers, and administrators	12.8	9.1	19.0	43.1
Clericals	5.2	6.4	11.6	28.2
Sales	2.2	6.9	.7	4.6
Agriculture	43.7	44.3	52.9	8.8
Production workers	24.8	24.3	9.4	7.5
Services	9.4	8.9	6.2	7.9
Others	1.9	—	.2	—
Total	100.0	100.0	100.0	100.0
	$x^2 = 177.8$		$x^2 = 288.3$	

were in professional, managerial and administrative occupations, while a smaller proportion of the males in the EFS were in sales than was found in the LFSS. These differences are statistically significant. It is unlikely that they arise from definitional problems since the classification system used in the two surveys was identical.

The difference may arise from the fact that households were only included in the second-phase survey if a wife were successfully interviewed in the first phase and if professional men were more willing to be interviewed, a bit of sample bias may arise. Some insight can be gained by comparing these figures with those in table 2.1, where a somewhat different classification scheme was used. The proportion of husbands in professional occupations in both the first and second phase was above that in the LFSS, but below that in the household section of the EFS, while the proportion in sales was nearly identical for husbands in the first and second phases and the LFSS. This seems to imply that the households in the second-phase EFS have a larger proportion of unmarried professional men than the LFSS, as well as having a slightly higher proportion of husbands who are professionals than is true of the general population. These differences, however, are not extremely large, and probably do not distort the employment characteristics of men in the survey unduly — beyond overestimating professionals.

For women, however, the differences in occupation are extreme. While over 50 per cent of the working women in the EFS are in agriculture, less than 10 per cent are in the LFSS. Conversely, more than twice the proportion of women are professionals in the LFSS than in the EFS, and in the LFSS, the proportion of women who are professionals is four times that of men. These extremes arise from the tendency for labor force surveys which use only a brief reference period rather than an entire year to underestimate the proportion of women who work part of the year in agriculture. The under-representation of agriculture by sector of work for women is confirmed in table 2.10. The large and statistically significant differences in the occupation and the activity of women in the two surveys seem more likely to reflect methodology of the surveys than real differences between the households in the two surveys.

It should be noticed concerning occupation and activity that men are more similar between the two surveys than are women, and women appear to be more similar to men in the EFS. This seems to suggest that standard labor force survey methods underestimate the participation of women.

Table 2.10 Per cent distribution of workers (employees and self employed) in the subsample (second phase of EFS) and Labor Force Sample Survey, by sex and activity

Activity	Males		Females	
	Sub-sample EFS 1980	Labour Force Sample Survey 1980	Sub-sample EFS 1980	Labour Force Sample Survey 1980
Agriculture	43.79	44.87	53.08	9.48
Mining	.56	.20	.36	.30
Construction	4.81	4.61	.72	.88
Manufacturing and production	16.21	14.39	9.24	8.72
Trade	7.46	9.18	5.25	6.91
Public services and communications	6.09	5.22	2.17	4.00
Financial	1.06	1.16	2.17	2.93
Services	20.02	17.59	26.99	55.07
Others	—	2.78	—	11.71
Total	100.0	100.0	100.0	100.0
	$x^2 = 47.8$		$x^2 = 1256.1$	

2.5 SUMMARY

In summary, the analysis suggests that the second-phase survey is highly representative of the currently married women in the total sample. The only statistically significant differences are fairly small ones in the occupation of wives who have worked since marriage, the total number of children ever born, and the proportion who have ever used or are currently using contraceptives. The women in the subsample have had slightly more (4.3 versus 4.1) children and are slightly more likely (43 per cent versus 41 per cent) to have used or to be currently using contraceptives (25 per cent versus 23 per cent).

The data on income seem to be fairly good as compared with expenditures. The observed per capita income is below estimates of national income, but not all of this difference arises from under-reporting of income by household. The sample may not be representative of all households in Egypt since it was only designed to include households with a currently married woman under 50. There does seem to be a tendency for urban dwellers to under-report their income by being less likely to report incomes from second jobs than is true for rural workers. This and other considerations suggest that comparisons of incomes within urban and within rural areas are more meaningful than comparisons between urban and rural ones.

Evidence from the employment section of the economic question seems to provide a more complete picture of labor participation, particularly by women, than does the standard labor force survey. This results in part from the larger reference period used in the employment section of the EFS, and in part because of the probe on work.

Given this general description of the sample of households and of couples in the second-phase survey, it is now possible to explore the economic characteristics of these households in detail in chapter 3.

CHAPTER 3

HOUSEHOLD INCOME: ITS DETERMINANTS AND CORRELATES

3.1 INTRODUCTION

To understand the effect of economic factors on fertility, it is first necessary to have an understanding of the overall economic conditions of households in the environment being analyzed, to understand how households acquire their income, and the relationship between background factors such as region and education and economic conditions. In this chapter, the levels and variations in annual household income and household per capita income are reviewed and then the correlates of income are explored. The other measures of household well-being that are expected to be correlated with income are expenditures, ownership of consumer durables, and housing quality as indicated by water supply, sanitation, and electricity.

After examining income levels and their correlates, the sources of income will be described in general and the major source of income — employment (on own account and for others) — will be explored in detail. The remuneration from employment will then be discussed. This will be followed by a section on the implicit remuneration from own-account work. The final portion of this chapter will be devoted to a brief section on the importance, or lack thereof, of women and children in the labor force.

3.2 HOUSEHOLD WELL-BEING

3.2.1 Household and per capita income

Household income and per capita income are both needed to give an understanding of economic well-being. Household income alone is insufficient because it is necessary to understand how many people must share in that income. Per capita income is insufficient because there are in fact substantial economies of scale that arise from the sharing of individuals in certain household overheads, in particular housing and other large durables, and not all individuals in the household have equal consumption; eg children ideally should be given less than the fully equal consumption weight implied in per capita calculation. There will be, of course, somewhat different variations in the pattern of household and per capita income and in the association of these factors with fertility — to be discussed in later chapters.

The regional differentials in both household income and per capita income show that Cairo and Alexandria have the highest incomes and rural Upper Egypt the lowest, but the differences are much sharper with respect to per capita income because family sizes are correspondingly higher in the poorer areas. These relationships are shown in table 3.1.

The disadvantage of rural areas is particularly dramatic looking at per capita income, and rural Upper Egypt has about half the per capita income of Cairo and Alexandria, while rural Lower Egypt is marginally better off. Since price levels differ by region, these figures do not perfectly reflect welfare differences. There do not exist price indices which would permit adjustment for these differences. As mentioned earlier, this suggests that within-region comparisons may be more meaningful than comparisons between regions.

The two-to-one ratio of welfare as measured by per capita income between metropolitan regions and rural areas will be reconsidered when examining housing

Table 3.1 Total annual household income (LE), per capita income (LE) and household size by region

Region	Average household income	Average per capita income	Average household size	(N)
Cairo and Alexandria	909	192	5.4	(602)
Lower Egypt — urban	814	159	5.7	(304)
Upper Egypt — urban	756	142	6.1	(170)
Lower Egypt — rural	682	111	6.5	(790)
Upper Egypt — rural	518	92	6.1	(617)
Total	717	134	6.0	(2483)

quality and ownership of consumer durables as well as earnings from employment.

Another way of looking at regional differences in income is by examining, not income averages, but distributions. By examining quintiles of income or income per capita, one can see how far each region deviates from the expected pattern. Thus, while 11 per cent of households in Cairo and Alexandria are in the poorest 20 per cent of Egyptian households with respect to household income, 15 per cent are in urban Lower Egypt and 18 per cent are in urban Upper Egypt. In rural Egypt, the figures are 22 and 30 per cent, respectively. For per capita figures, the results are somewhat more dramatic, as shown in table 3.2. Thus, the proportion of households in the lowest 20 per cent of Egypt's income group is about three times larger for rural Upper Egypt than for Cairo and Alexandria, and for per capita income it is over four-and-a-half times greater. Rural Lower Egypt appears better off, but is still poorer than urban areas and has twice the per cent in the lowest group as does Cairo/Alexandria on total household income and almost four times more on per capita household income.

The relationship between household income and per capita income, of course, depends on the relationship of both to family size. Household income might increase with family size since larger families have more potential workers. In examining the data, however, a clear pattern does not emerge. While a slightly positive relationship is observed for the country as a whole, there is considerable irregularity when one examines the data by region, as shown in table 3.3.

The effect of family size on household per capita income is much clearer as shown in figure 3.1 — the larger the household, the lower the household per capita income. This pattern is strong and fairly regular for the whole nation and for metropolitan and rural areas, but more irregular for urban Upper and Lower Egypt.

The effect of household size on well-being can best be seen by looking at the relationship between household size and the distribution of households across per capita income groups. Figure 3.2 shows the proportion of households in the lowest 20 percentile increases almost uniformly with household size while the proportion in the highest 20 percentile decreases. No households of size 1 are in the lowest 20 percentile while 45 per cent of those with 11 or more members are found there.

One reason that total household income is so irregularly related to household size is that the number of working adults varies substantially around households of the same size. The numbers of working adults has a predictably positive relationship with total household income as shown in table 3.4. The effect of adding working adults is not proportional, however. Households with four working adults do not have four times the income but only about twice that of a household with one worker. This less-than-proportional effect may be due to the fact that when the head of household has low

Table 3.2 Percentage of households in quintiles of total household and per capita income by region

Region	Total household income					Per capita income				
	Quintile					Quintile				
	Lowest	2nd	3rd	4th	5th	Lowest	2nd	3rd	4th	5th
Cairo and Alexandria	10.6	15.3	23.4	21.3	29.4	7.3	15.3	18.3	24.2	34.9
Lower Egypt — urban	15.2	13.8	17.8	29.0	24.3	12.8	17.1	18.1	23.4	28.3
Upper Egypt — urban	17.6	20.6	16.5	22.9	22.4	20.0	15.9	14.1	16.5	28.5
Lower Egypt — rural	22.0	21.5	18.2	20.0	18.2	26.7	19.2	21.8	19.1	13.2
Upper Egypt — rural	30.3	25.9	20.2	14.6	9.1	31.7	23.3	21.0	15.9	8.1

NOTE: Cut-off for quintiles:

	Total household income	Per capita income
Lowest 20%:	Up to 312 LE	Up to 56 LE
Second:	312–460	56–80
Third:	461–641	81–109
Fourth:	642–960	110–170
Fifth:	961+	171+

Table 3.3 Average household income (LE) by household size and region

Household size	Region					Total	
	Cairo & Alexandria	Lower Egypt urban	Upper Egypt urban	Lower Egypt rural	Upper Egypt rural	Average income	N
1	[240.0]	—	—	[261.0]	[211]	229.4	(7)
2	590.9	589.8	[360.4]	443.0	317.8	480.9	(154)
3	830.9	611.6	528.8	420.7	361.3	555.7	(224)
4	1100.6	741.9	936.3	476.3	433.4	722.8	(342)
5	1026.7	769.5	1032.2	598.5	454.6	731.9	(379)
6	851.6	741.9	570.2	702.1	470.8	696.6	(379)
7	783.7	1008.8	620.6	655.1	497.9	684.6	(333)
8	941.7	767.6	649.4	660.5	642.5	719.9	(241)
9	810.1	1118.4	[1013.3]	780.6	654.0	818.7	(164)
10	1062.6	1057.0	[769.6]	689.2	726.6	803.4	(111)
11+	[1739.6]	1053.1	[742.1]	1269.2	855.1	1123.3	(149)
Average total income	908.6	814.0	756.2	681.9	517.6	717.3	
(N)	(602)	(304)	(170)	(790)	(617)	(2483)	

NOTE: Brackets denote sample size ≤ 20.

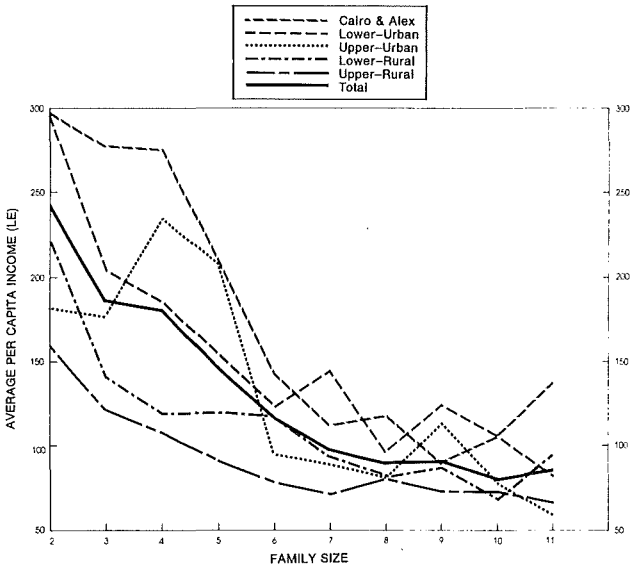

Figure 3.1 Average per capita income by household size and region

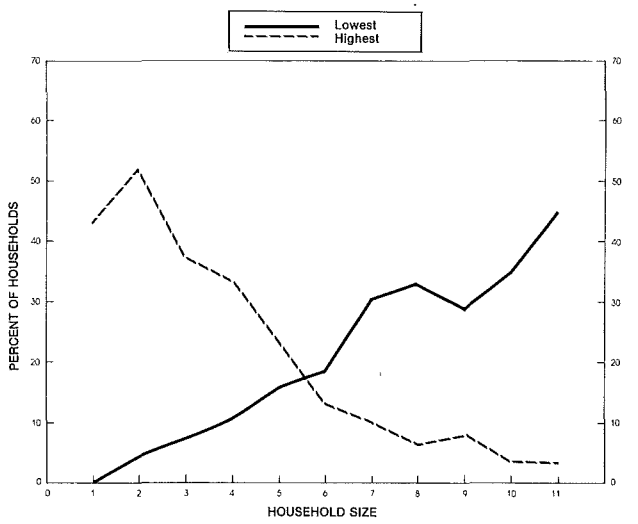

Figure 3.2 Proportion of households in lowest and highest quintiles of per capita income by household size

income, other household members have greater incentive to seek work. It may also be possible that workers other than the head tend to have lower earnings than the head.

The less-than-proportional effect on total household income of adding workers explains why there is very little relationship between household per capita income and the number of working adults as shown in figure 3.3.

The well-being of the family members depends on family size, number of adult workers and location, but it also depends very strongly on the characteristics of the head of household. Table 3.5 and figure 3.4 show that as household head's age increases, household income rises almost uniformly to age 60, but per capita income shows almost no uniform relationship across all regions since family sizes vary as does the age structure of household membership and the number of working-age adults. For rural areas there is almost no difference in per capita income for various ages of head, while in metropolitan areas, income per capita decreases then increases with age. Other urban areas show an even more erratic pattern, perhaps due to small sample sizes in age/regional group.

The education of household head shows an almost uniformly positive effect on both household income and per capita income. The only small exception is that those who are literate but have not obtained a primary certi-

Table 3.4 Average household income (LE) by number of working adults and region

Number of working adults	Region					Total	
	Cairo & Alexandria	Lower Egypt urban	Upper Egypt urban	Lower Egypt rural	Upper Egypt rural	Average income	N
0	816.8	541.8	[482.7]	524.4	432.1	571.5	(140)
1	763.0	707.7	655.1	536.0	451.4	606.9	(1453)
2	1196.7	979.5	933.7	668.6	577.2	816.5	(620)
3	1325.2	1216.0	[1315.4]	981.7	741.8	1021.5	(185)
4	[1982.6]	[1509.3]	[1286.0]	1216.6	[1130.1]	1294.8	(65)
5+	—	[2044.0]	—	[1986.4]	—	1995.0	(20)

NOTE: Brackets denote sample size ≤20.

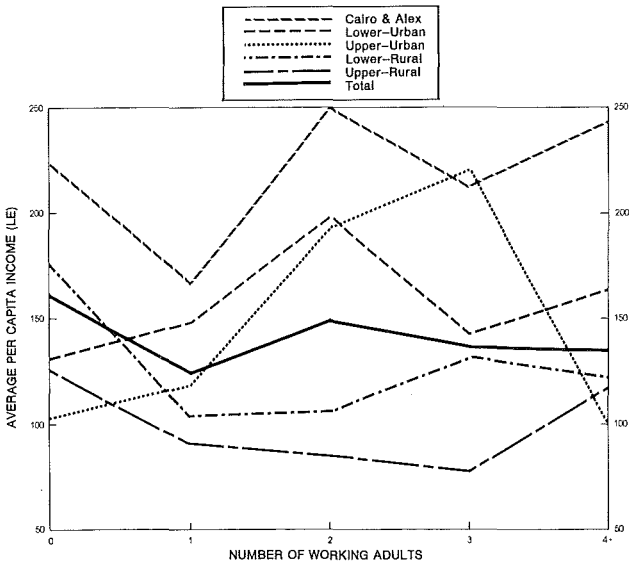

Figure 3.3 Average per capita income by number of working adults and region

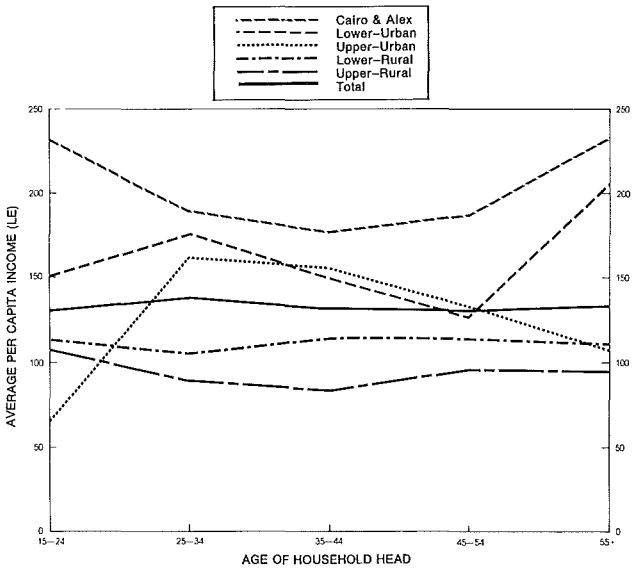

Figure 3.4 Average per capita income by age of household head and region

Table 3.5 Average household income (LE) by age of household head and region

Age groups	Region					Total	
	Cairo & Alexandria	Lower Egypt urban	Upper Egypt urban	Lower Egypt rural	Upper Egypt rural	Average income	N
15–24	[851.8]	[440.0]	[254.0][a]	364.8	362.0	441.8	(87)
25–34	671.6	664.4	510.3	508.7	376.1	560.6	(531)
35–44	893.3	777.8	807.5	681.6	467.0	714.9	(743)
45–54	938.4	859.7	858.5	743.5	577.1	776.3	(617)
55+	1230.5	1217.5	691.4	856.9	616.6	859.9	(501)

[a]Only Group 4 data.

NOTE: Brackets denote sample size ≤20.

ficate have higher household and per capita income than those who have completed primary school. When earnings are discussed, further attention will be paid to the comparisons between the primary-certificate holder and those with incomplete primary school.

The advantage of education of the household head is relatively minor for per capita income up through primary, but those with secondary certificates have almost twice the household per capita income as the unschooled, and those with university almost four times. The starkness of the contrast in per capita income by education of household head is illustrated in table 3.6 and figure 3.5.

Table 3.6 Average annual per capita income (LE) by education of household head and region

Education of head	Region					Total	
	Cairo & Alexandria	Lower Egypt urban	Upper Egypt urban	Lower Egypt rural	Upper Egypt rural	Average income	(N)
No school	129	112	89	99	89	101	(1417)
Incomplete primary	127	172	111	125	99	127	(530)
Primary certificate	151	127	[113]	111	[81]	124	(157)
Secondary certificate	246	198	[190]	130	[122]	197	(213)
University	472	312	[355]	[228]	[144]	388	(147)

NOTE: Brackets denote sample size ≤ 20.

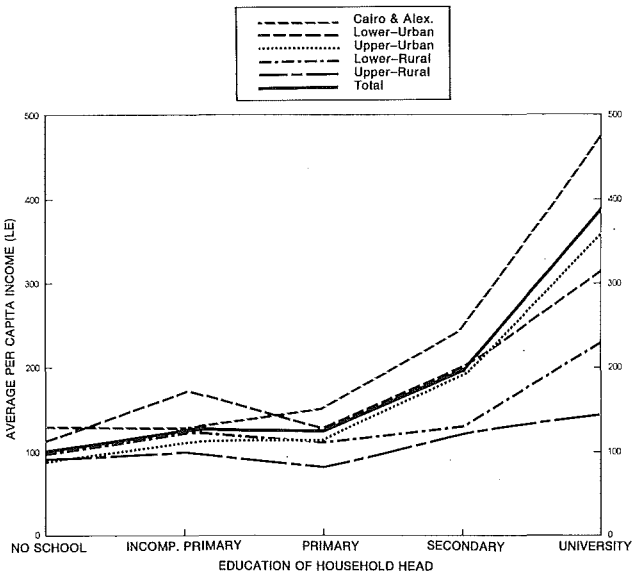

Figure 3.5 Average per capita income by education of household head and region

The occupation of household head is in part the result of education and in part the result of location as well as other factors. Both household and per capita income vary greatly across occupation groups as shown in table 3.7.

The highest per capita incomes are enjoyed by families of professionals and managers. Their per capita incomes are 45 per cent above the next highest groups — those in clerical occupations. Agricultural workers and those in services have the lowest incomes — only 35 per cent of those of the highest occupational groupings. Those households headed by farm owners and managers, sales and other service workers fare little better.

Thus household income, total or per capita, shows very strong, predictable differentials across regions, and by the education and occupation of household head. The effects of family size, number of working adults and age of head on income are positive only with respect to total household income, but with respect to household per capita income, they are weak or negative in the case of family size.

Table 3.7 Annual household and per capita income (LE) by occupation of household head (cash and in-kind combined)

Occupation	Average household income	Average per capita income	(N)
Professional	1133	252	(145)
Agricultural (owners & managers)	716	104	(416)
Managers	1244	252	(170)
Clerical	808	174	(117)
Sales	541	106	(46)
Production workers	728	139	(504)
Services	495	87	(237)
Agricultural workers	482	89	(379)
Other services	458	97	(45)

To understand the full implication of differentials in income, it is necessary to examine other measures of household well-being, their association with income and their differentials. This is done in the following section.

3.2.2 Other measures of economic well-being

The data on total household income and household per capita income are the most rigorously derived measures of economic conditions in this data set, but other measures such as household monthly expenditures, ownership of consumer durables, and housing quality give considerable insight as well.

The household's reported monthly expenditures in 1979 are closely correlated with calculated income. The regional differences in expenditures follow the pattern found for income, as shown in table 3.8. The 2-to-1 ratio between Cairo/Alexandria and rural Egypt with respect to per capita income persists for average per capita expenditures, and a 4-to-1 ratio persists for the proportion in the lowest 20 percentile.

The average household expenditures tend to increase with family size, but for family sizes of 4–10 the increases

Table 3.8 Average expenditures (LE) and the proportion of households in the lowest 20 percentile by region

Region	Average monthly expenditures			Proportion of households in lowest 20 percentile	
	Total	Per capita	(N)	Total	Per capita
Cairo and Alexandria	60.3	12.8	(598)	8.1	8.0
Lower Egypt — urban	50.8	10.0	(302)	11.8	13.5
Upper Egypt — urban	49.3	9.3	(170)	17.1	20.0
Lower Egypt — rural	39.3	6.4	(790)	19.4	26.8
Upper Egypt — rural	33.4	6.0	(617)	31.1	33.2
Total	45.0	8.5	(2477)	18.5	21.7

are small and irregular. Per capita expenditures decrease almost uniformly by family size.

Differentials in expenditures by family size are slightly larger than differentials for per capita income as evidenced by the proportion in the lowest 20th percentile in table 3.9 and figure 3.2. For per capita income, this ranged from 0 per cent to 45 per cent for those with family sizes of 1 and 11 respectively, while for per capita expenditures it ranges from 0 per cent to 49 per cent.

Household ownership of consumer durables is closely related to per capita income as shown by figure 3.6.[1] The ownership of gas stoves, televisions, and refrigerators move up in parallel as income rises. Radios, which are a much more widely owned item, show a less sharp increase with income.

Ownership of consumer durables also varies by region for the most part, as would be expected. The only exception to the expected pattern is for a few rarely owned items: cars, hot water heaters, motorcycles, and telephones. In each case, those in urban Upper Egypt are more likely to own the item than those in urban Lower Egypt, but the differences are too small to be significant, as shown in table 3.10. For the most commonly owned item, the radio, almost 87 per cent own one or more in metropolitan areas and 49 per cent in rural Upper Egypt.

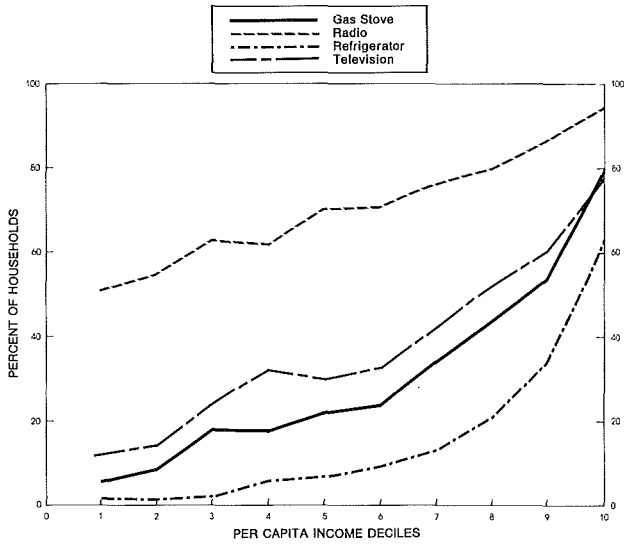

Figure 3.6 proportion of households owning durables by per capita income deciles

[1]One cannot assume that ownership of consumer durables is only a reflection of income. It also represents a choice of how people spend their income and in rural areas there may be a greater tendency to invest in productive assets than in consumer durables.

Table 3.9 Average expenditures (LE) and the proportion of households in the lowest 20 percentile by family size

Family size	Average monthly expenditures			Proportion of households in lowest 20 percentile	
	Total	Per capita	(N)	Total	Per capita
1	14.9	[14.9]	(7)	85.7	0
2	30.6	15.1	(154)	47.4	3.2
3	35.3	11.8	(225)	33.8	7.1
4	47.8	12.0	(342)	24.6	11.4
5	46.8	9.4	(379)	19.0	16.6
6	43.6	7.3	(379)	13.7	14.2
7	44.3	6.3	(333)	15.0	28.2
8	44.6	5.6	(241)	9.5	35.7
9	48.9	5.5	(164)	6.1	37.8
10	49.4	5.0	(111)	6.3	43.2
11+	63.5	4.9	(149)	4.0	49.0

NOTE: Brackets denote sample size ≤20.

Table 3.10 Proportion of households owning various durables by region

Durables	Region					
	Cairo & Alexandria	Lower Egypt urban	Upper Egypt urban	Lower Egypt rural	Upper Egypt rural	Average
Bicycle	7.7	12.6	12.4	7.9	[1.8]	7.2
Car	7.3	[2.6]	[3.6]	[0.3]	[0.0]	2.4
Gas stove	70.4	53.3	47.9	10.5	[2.1]	30.7
Heater	14.0	[4.6]	[4.7]	[0.9]	[0.0]	4.6
Motorcycle	[1.5]	[1.7]	[1.8]	[1.9]	[0.5]	1.4
Phone	9.2	[3.0]	[3.6]	[0.4]	[0.3]	3.0
Radio	86.9	90.0	77.5	66.8	49.1	70.8
Refrigerator	36.9	28.3	27.2	4.2	[1.3]	16.0
Sewing machine	25.5	22.7	17.8	8.0	[2.8]	13.4
Television	75.0	63.3	55.0	18.0	10.1	37.9

NOTE: Brackets denote sample size ≤ 20.

For televisions, the respective figures are 75 per cent and 10 per cent. Gas stoves have the highest absolute difference across regions, with about 70 per cent owning one in Cairo and Alexandria, and about 2 per cent in rural Upper Egypt. Thus, the ownership of consumer durables shows even greater relative differentials than the 2 to 1 difference in average per capita incomes and expenditures across regions.

Part of this difference might well be due to the lack of access to electricity in rural regions — since many, but not all, of the durables depend on electricity. This cannot account for very much difference, however, because the differential in access to electricity is not nearly as sharp as in ownership of durables. Overall, as shown in table 3.11, almost 65 per cent of the households in this sample have electricity; almost 93 per cent in Cairo and Alexandria and almost 44 per cent in rural Lower Egypt. Rural Upper Egypt has a higher percentage of the households with electricity, almost 68 per cent, than rural Lower Egypt. This is not surprising, given the geography of the two areas.

Water supply and sanitation are two other important dimensions of housing quality. These variables show very sharp urban–rural differentials as well as strong income differentials. For the most part, patterns are as expected, as shown in table 3.11. The only deviation exists for urban Upper Egypt, which has a higher proportion of inside faucets (approximately 66 per cent versus 63 per cent) and flush toilets (approximately 31 per cent versus 24 per cent) than urban Lower Egypt.

Table 3.11 Proportion of households owning various amenities by region

Amenities	Region					
	Cairo & Alexandria	Lower Egypt urban	Upper Egypt urban	Lower Egypt rural	Upper Egypt rural	Average
Water supply						
Faucet inside	69.2	63.3	65.7	14.2	3.4	34.4
Faucet outside	13.8	10.0	[4.7]	[1.0]	[0.2]	5.2
Faucet public	13.1	17.7	22.5	51.0	30.2	30.6
Pump inside	[0.0]	[1.3]	[1.2]	5.5	19.9	7.0
Pump outside	[0.8]	[1.3]	[2.4]	19.2	33.7	15.0
Well	[0.0]	[0.0]	[0.6]	[1.4]	[0.3]	0.6
Nile or canal	[0.0]	[0.0]	[0.0]	7.5	12.2	5.8
Other	[3.0]	[3.0]	[3.0]	[0.3]	[0.2]	1.4
Sanitation						
Flush, family	45.1	24.3	30.8	5.5	[0.2]	17.8
Flush, shared	[2.0]	[0.6]	[0.6]	[0.3]	[0.0]	0.7
No flush, family	30.0	59.3	22.7	60.0	41.0	46.5
No flush, common	20.8	11.3	[9.5]	4.7	3.7	9.5
Other	[2.2]	[4.3]	18.3	30.0	55.1	25.6
Electricity	92.9	91.0	75.1	43.7	67.8	64.7

NOTE: Brackets denote sample size ≤ 20.

This discussion sheds light on differences in income by region by family size and characteristics of household head. It also gives insight into the association between income and other measures of household well-being: expenditure, ownership of consumer durables, and housing quality. All these dimensions of well-being may be associated with fertility attitudes and behavior. These relationships will be explored in later chapters. In the remainder of this chapter, the sources of household income will be explored in general and the major source, employment (on own account and for others), will be explored in some detail.

3.3 SOURCES OF INCOME

Income sources vary by region and household characteristics as shown in table 3.12. Employment for wages and salaries accounts for over two-thirds of the income in the metropolitan areas and about half in other urban areas. In rural areas, earnings from employment for others are much less important than in urban areas, and earnings from agriculture are, not unexpectedly, much larger. In rural areas, earnings from employment (including agricultural employment) are almost equal to earnings from own-account agriculture. Own-account work from household enterprises and other own-account work vary substantially from 20 per cent in metropolitan areas to 12 per cent in rural Upper Egypt, but is highest in the urban areas in most regions, accounting overall for 7 per cent of income. These are both remittances from within Egypt and from abroad. These two sources were not separated in the survey. Income from interests, dividends, pensions and real estate constitutes a very small portion of reported income, only 1 per cent for the whole sample. This expectedly is higher for urban and metropolitan areas.

The sources of income vary substantially by family size. The one-person household is radically different from others and is, in fact, so highly dependent on remittance (43 per cent of income from this source) that it is not an entirely independent household. For this reason, details of these atypical households have not

Table 3.12 Sources of income — proportion of total income (cash and in-kind) — from various types of economic functions

	Proportion of income (cash plus in-kind) from				
	Employment for others[a]	Own-account agriculture[b]	Other work[c]	Remittances[d]	Other income[e]
Region					
Cairo and Alexandria	67	1	20	9	3
Lower Egypt — urban	50	6	34	7	3
Upper Egypt — urban	56	7	30	6	1
Lower Egypt — rural	40	42	14	4	0
Upper Egypt — rural	37	41	12	10	0
Family size					
2	53	10	20	11	6
3	63	11	17	9	0
4	60	9	20	10	1
5	55	15	20	8	2
6	58	16	19	6	1
7	49	19	20	9	3
8	49	25	21	4	1
9	38	38	19	5	0
10+	35	47	13	5	0
Education of head of household					
No school	41	34	18	7	0
Inomplete primary	46	18	30	6	0
Primary certificate	57	12	23	7	1
Secondary certificate	71	6	11	11	1
University	75	3	9	6	7
Total	48	25	19	7	1

[a]Includes all earnings (wages and salaries) from work for others in all sectors.
[b]Includes income from crops and other agricultural production (cattle, orchards, etc).
[c]Includes income from family enterprises and other own-account work outside agriculture.
[d]Includes cash remittances from inside and outside Egypt. (Does not include cash values of goods sent or brought.)
[e]Includes rent from agricultural land and other real estate, interests, dividends and pensions.

been included. For households of medium size (2–6), earnings from employment for others constitute the major source of income. For families of 7 or 8, earnings have intermediate importance. For larger families, earnings from own-account agriculture assume major importance.

The sources of income also vary greatly by education of household head. The importance of earnings from employment rises uniformly and sharply with the education of household head. The income from own-account agriculture is, as expected, most important among families of heads without schooling, where it constitutes almost one-third of all income. Those who have incomplete primary are most noticeable for the high proportion of their income coming from own-account work outside agriculture. Income from property, financial assets, and pension is also closely related to education — being highest among households where the head has a university degree.

It has been shown above that household well-being and income differ by region, family size and the characteristics of head of household. The sources of income vary as well by these factors. These differences arise from differences in patterns of labor participation and rates of remuneration by region and household characteristics. In the following sections, these determinants of income will be explored.

3.4 EMPLOYMENT

Involvement in the labor force and the extent to which that involvement is employment for self or others vary by region, age, education and, most dramatically, by sex. For those over six, only 10 per cent of the females in our sample worked at some time in 1979, while 56 per cent of males did so. For prime working ages (15–60), 76 per cent of the males and 12 per cent of the females worked in 1979. For males, the percentage working increases dramatically with age, after age 10 until the age of 60. For females, the percentage working increases slightly (except for 20–24 year olds) up to age 30–34 and then decreases. These patterns are shown in figure 3.7. At no age does female labor participation exceed 18 per cent. Female labor participation does not appear to vary systematically by fertility related factors of marital status, number of living children, or indicators of age of youngest child, as will be discussed later.

The proportion working varies only slightly by region for those 15–60. The metropolitan areas and urban Lower Egypt have the lowest rates for males at about 70

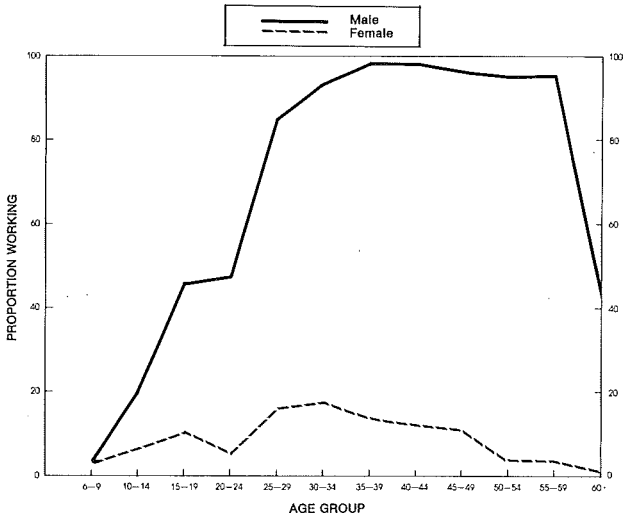

Figure 3.7 Proportion of individuals working by age and sex

per cent while the rural areas have 79 per cent. In urban and metropolitan areas about 12 per cent of women 15–60 work, but this percentage varies greatly in rural areas with 18 per cent working in Lower Egypt and only 6 per cent working in Upper Egypt.

Education appears to affect labor participation for males 15–60 in an unexpected way. Approximately 90 per cent of those without certificates and university graduates worked at some time in 1979. For those who were primary and secondary graduates, however, labor participation was very low, 54 per cent and 43 per cent respectively. This phenomena can be better understood by looking at proportion working by age and education in table 3.13. The higher the education level the later the entry to the labor force, but once entry occurs, males with higher education rapidly achieve rates of participation similar to less educated men.

For women, those with secondary and university education are much more likely to work than others, 22 per cent and 39 per cent respectively. A smaller proportion of those women with primary school work than is true of those without certificates, 4 per cent versus 10 per cent.

Whether people worked or not at some time in 1979 is only one aspect of labor supply. The amount of time worked is also a major determinant of income, and the time left over for other activities such as schooling, housework, and leisure is critical to determining the overall well-being of individuals and families. The amount of time worked can be measured by the proportion of individuals who have more than one job, and the months worked, days worked per month, hours worked per day on the main and second jobs.

Table 3.13 Proportion of males working by age and education

Age	Education					
	No school	Incomplete primary	Primary certificate	Secondary certificate	University	Total
6–9	[5]	[1]	—	—	—	3
10–14	65	8	7	—	—	20
15–19	89	86	22	10	—	46
20–24	67	59	[53]	21	[51]	47
25–29	88	83	93	76	85	85
30–34	94	93	94	97	94	94
35–39	99	100	100	96	100	98
40–44	99	100	97	93	100	98
45–49	99	93	[95]	[95]	[100]	96
50–54	96	99	[83]	[90]	[87]	95
55–59	91	98	[100]	[100]	[86]	94
60+	44	[38]	[63]	[83]	[25]	43
15–60	90	88	54	43	90	76

NOTE: Brackets denote sample size ≤20.

The proportion who have more than one job is probably underestimated in our sample due to the reluctance of those working for the government, mainly urban dwellers, to admit having a second job. Therefore, only brief attention will be given to this dimension of labor supply. Approximately 12 per cent of working males and 3 per cent of working females report a second job. In Cairo and Alexandria, these percentages are about 4 per cent and 1 per cent respectively. The proportion of males with second jobs varies across regions, with rural Upper Egypt having the highest percentage at almost 20 per cent, followed by rural Lower Egypt having 14 per cent. These differences are detailed in table 3.14.

The educational and activity differentials reflect this pattern. The unschooled are the most likely to report two jobs, as are those in agriculture. The age pattern for second jobs for males shows an increase to age 45–49 and then it drops off. The number of women with second jobs is so small (19 in all) that no patterns can be discerned.

Given the relatively low percentage of males and especially females with second jobs, this dimension of work effort will be ignored for the most part in the rest of this section. Instead, the discussion will focus on various dimensions of time devoted to main job. Variations in months worked, days worked per month, and hours worked per day with respect to age, sex, region, education, occupation and activity will be detailed in later work. This section will highlight the most significant variations only.

The number of months worked last year vary relatively little; therefore tables are not shown. It does tend to be somewhat less for women than for men; to increase, but not uniformly, with age for men; and to be less for

Table 3.14 Proportion with second job by region and sex, by age and sex, by education and sex, and by activity and sex

	Proportion with second job	
	Males	Females
Region		
Cairo and Alexandria	4.1	[0.8]
Lower Egypt — urban	[4.5]	—
Upper Egypt — urban	[6.9]	[3.6]
Lower Egypt — rural	14.0	[3.3]
Upper Egypt — rural	19.6	[8.2]
Age		
6–14	[0.0]	[0.0]
15–19	7.2	[3.5]
20–24	11.5	[3.5]
25–29	11.2	[2.2]
30–34	12.8	[4.9]
35–39	16.0	[4.5]
40–44	16.4	—
45–49	18.2	[2.2]
50–54	15.0	—
55+	7.5	—
Education		
No school	13.6	[4.2]
Incomplete primary	[10.5]	—
Primary certificate	11.5	—
Secondary certificate	[7.0]	—
University	7.7	[1.8]
Activity of main job		
Agriculture	19.8	[4.2]
Mining	[5.6]	—
Manufacturing	[3.6]	—
Public utilities	—	—
Construction	[4.5]	—
Trade	9.7	[6.7]
Transport	[4.9]	—
Finance	[11.4]	[8.3]
Services	3.5	[0.7]
Total	11.9	3.0

NOTE: Brackets denote sample size ≤20.

second jobs than main jobs. Other variations are indeed minor and in most cases are less than two weeks above or below the mean.

Days worked per month shows somewhat greater variation. While 76 per cent of males work 21 days or more a month on average, only 59 per cent of women do. Work on the second job is much lower than first job as expected. The average days worked on first job for males is about 24 and for second 17.

For women, there are substantial variations in days worked by occupation, education and region. Women with secondary or university education, in urban areas and in non-agricultural activities, work more than other women. Similar but less pronounced variations exist for men.

Hours worked per day vary substantially by sex. Men work an average of 7.9 hours while women work 6.4. Hours on second jobs are substantially less as expected — 5.5 hours for men.

But time input is best represented by hours per month, which combines days worked per month and hours worked per day. Table 3.15 shows how hours worked per month differ by age and sex, and by age for males in second jobs. Males in their main jobs show uniform increases in hours worked up to age 40–44, and then a gradual decline. The pattern is much more erratic for males on the second job and for females. This probably arises from small sample sizes in these groups. Regional differences are large, with men working 210 hours on main jobs in metropolitan areas, 201 in urban Lower Egypt, 187 in urban Upper Egypt and rural Lower Egypt, and only 173 in rural Upper Egypt. Among women, those in metropolitan areas work the most hours

Table 3.15 Average hours worked per month by those employed in 1979 by region, age, education, activity and sex

	Males		Females	
	Main job	Second job	Main job	Second job
Region				
Cairo and Alexandria	210	85	173	[24]
Lower Egypt — urban	201	[97]	157	—
Upper Egypt — urban	187	[82]	159	[75]
Lower Egypt — rural	187	97	127	[85]
Upper Egypt — rural	173	91	130	[74]
Age				
6–14	175	[100]	147	[125]
15–19	183	117	142	[83]
20–24	189	97	150	[69]
25–29	191	90	140	[110]
30–34	193	96	139	[59]
35–39	196	80	126	[71]
40–44	198	107	129	—
45–49	196	77	159	[45]
50–54	196	100	[170]	—
55+	179	240	[82]	[100]
Education				
No school	187	101	135	[78]
Incomplete primary	180	[61]	126	—
Primary certificate	202	82	[144]	—
Secondary certificate	197	[88]	166	—
University	183	79	150	[75]
Activity in main job				
Agriculture	176	94	127	[81]
Mining	[197]	[250]	[250]	—
Manufacturing	202	[95]	130	—
Public utilities	[195]	—	[179]	—
Construction	185	[34]	[182]	—
Trade	218	107	193	[62]
Transport	206	[133]	[169]	—
Finance	183	[89]	[182]	—
Services	198	64	160	[75]
All Egypt	190	93	142	[78]

NOTE: Brackets denote sample size ≤ 20.

(173) while in rural Lower Egypt they work the least (127), similar to 130 hours in rural Upper Egypt. Other urban areas show almost identical, but intermediate, amounts of time worked; 157 and 159 hours per month in urban Lower and urban upper Egypt, respectively. While there are educational differences in hours worked, the pattern is not regular, as shown in table 3.15.

The amount of time worked is a major determinant of income and, both directly and indirectly, of well-being. The more productive that time is, the higher will be income for a given amount of work, and the less time needed to achieve a given level of income. In the next section, the remuneration from employment for others, total and per hour worked, will be discussed. In the following section of this chapter, an attempt will be made to estimate the remuneration from self-employment.

3.5 EARNINGS FROM EMPLOYMENT

In this section, several dimensions of earnings from employment will be explored. First, variations in total earnings for 1979 will be discussed. This will be followed by a comparison of average monthly earnings in 1979 and earnings in the month prior to the survey. Finally, variations in average earnings per hour for 1979 and for the month prior to the survey will be discussed.

3.5.1 Annual earnings

Average annual cash earnings over all ages for both sexes equal 369 LE, while combined cash and in kind earnings are only slightly more, 374 LE. Therefore, in the discussion which follows, the focus will be on total earnings. On average, women earn only 64 per cent of what males earn. While the difference in earnings and male/female differences vary across age groups, only for children (6–14 year olds) do females earn more than males. Table 3.16 and figure 3.8 illustrate the age profile of earnings for males and females.

Regional differences in earnings are also shown in table 3.16. For males, the differences between Cairo and Alexandria and rural Upper Egypt are 2.3 to 1. For females, they are much larger, 3.7 to 1.

Educational differentials are large, as shown in table 3.16. Males with university education earn three-and-a-half times what unschooled males earn. This is almost identical to the ratio for females. For both the unschooled and university graduates, males make twice as much as females. At intermediate levels of education, the male-female differences are smaller.

Table 3.16 Average annual earnings (LE) by region, age, education, occupation and sex

	Male	Female
Region		
Cairo and Alexandria	591	391
Lower Egypt — urban	455	267
Upper Egypt — urban	437	388
Lower Egypt — rural	294	153
Upper Egypt — rural	254	107
Age		
6–14	96	100
15–19	219	146
20–24	289	228
25–29	346	287
30–34	411	323
35–39	464	321
40–44	537	384
45–49	461	331
50–54	525	[170]
55+	552	[178]
Education		
No school	277	133
Incomplete primary	370	[231]
Primary certificate	376	[205]
Secondary certificate	463	349
University	971	475
Occupation		
Professional	679	431
Agriculture	224	112
Manager	1081	[691]
Clerical	487	294
Sales	326	[40]
Production worker	416	299
Services	298	278
Other	345	210
All Egypt	394	252

NOTE: Brackets denote sample size ≤ 20.

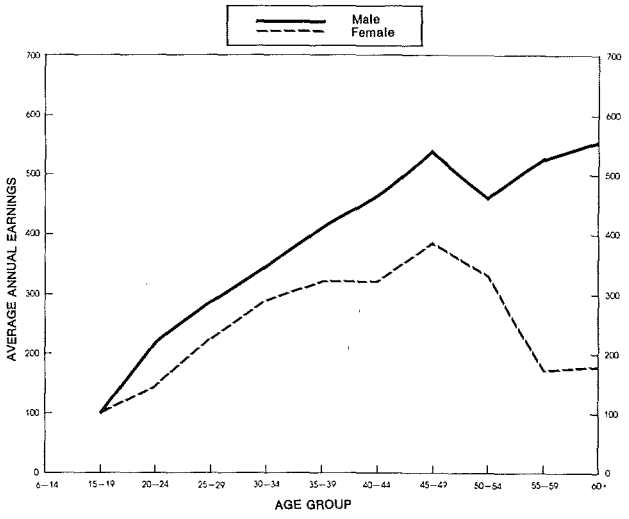

Figure 3.8 Average annual earnings (in LE) by age and sex

As shown in table 3.16, occupational differences in earnings are similar but not identical to those for education. For males and females, managers have the highest earnings followed by professionals. For both groups, the male/female ratios are 1.6. Agriculture is the occupation with the lowest earnings for males, but for women a very small group of women in sales have the lowest income. The ratio of earnings of male managers to male agricultural workers is 4.8. This is much larger than the differential between university graduates and those with no schooling.

Comparisons of average monthly earnings for 1979 and for the month prior to the survey provide some insights. On average, last month's earnings exceed those in 1979 by 22 per cent for males and only 5 per cent for females. This would be expected as prices and wages increased. In addition to male/female differences in the rate of increase of earnings, there are also educational and regional differentials for males. While the unschooled and those with primary school had increases in the range of 26–28 per cent, university graduates had increases of only 14 per cent. The increases in metropolitan areas and urban Upper Egypt were 11–13 per cent, while for rural areas the figures were 26 per cent and 29 per cent in Lower and Upper Egypt respectively.

3.5.2 Earnings per hour

To understand the basic differences in annual earnings described above, it is useful to adjust them for the time inputs. Table 3.17 shows earnings per hour on average for 1979 and for the month prior to the survey.

The differences in earnings per hour between men and women can be represented as a ratio of female earnings per hour to male earnings per hour. For 1979 this ratio is 0.82. This is substantially above the ratio of total female earnings in 1979 to total male earnings which was 0.64. This reflects the fact that a large part of the difference in male-female earnings in 1979 was due to the fact that females work fewer hours. Female earnings per hour relative to those of males deteriorated between the average month in 1979 and the month prior to the survey; by May 1980, the ratio of female earnings per hour relative to male earnings per hour was reduced to 0.70.

Earnings per hour in 1979 vary by age as well as sex as shown in table 3.17. For males, earnings per hour increase to age 40–44, decrease and then increase again. For females, earnings per hour increase until the early forties and then decrease.

As shown in table 3.17, regional differences in earnings per hour have the expected pattern, except that those in urban Upper Egypt are marginally above those in urban Lower Egypt for females and nearly identical for males. The earnings per hour in rural Upper Egypt are one-half those in Cairo and Alexandria. This mirrors exactly the 2-to-1 ratio of income per capita between Cairo and Alexandria and rural Upper Egypt. Educational differentials in earnings per hour are quite substantial. Male university graduates' earnings per hour were about 3.3 times those of the uneducated last month and about 3.5 times in the last year, while for females the ratios are less: 3.0 last month and 3.1 last year.

The above pattern of more rapid increases in male than female earnings per hour between last year and last month holds true at the regional level, as shown in table 3.17. In all regions, the increase in male earnings per hour was greater than for females. Increases in male

Table 3.17 Earnings per hour (piasters) in 1979 and in month before the survey by region, age, education, occupation and sex

	Male		Female	
	Last year	Last month	Last year	Last month
Region				
Cairo and Alexandria	26	32	21	21
Lower Egypt — urban	22	25	16	19
Upper Egypt — urban	21	26	24	24
Lower Egypt — rural	14	19	11	12
Upper Egypt — rural	12	16	8	9
Age				
6–14	6	7	8	8
15–19	11	13	10	11
20–24	15	18	14	13
25–29	16	22	16	17
30–34	18	25	18	20
35–39	20	29	18	19
40–44	24	28	24	30
45–49	20	24	20	20
50–54	26	27	[7]	[7]
55+	27	30	[8]	[9]
Education				
No school	13	16	9	10
Incomplete primary	17	21	[11]	[13]
Primary certificate	17	21	[12]	[12]
Secondary certificate	23	31	19	20
University	45	52	28	30
Occupation				
Professional	34	41	26	27
Agriculture	11	15	9	9
Manager	46	50	38	[39]
Clerical	24	33	16	18
Sales	13	16	10	[10]
Production worker	19	23	13	15
Services	12	15	15	11
Other	16	26	7	[7]
All Egypt	18	23	15	16

NOTE: Brackets denote sample size ≤ 20.

earnings per hour were greatest in rural areas, 33–36 per cent, and least in urban Lower Egypt followed by Cairo/Alexandria and then urban Upper Egypt. For females, the increases were extremely small in all regions.

In later studies to be executed, the relative importance of the various factors (region, education, age, etc.) determining earnings per hour, total earnings and household income will be explored in more detail. Before concluding this section, however, it is important to attempt to understand the remuneration of those who are employed not for others but on own account in agriculture or in other family businesses since, as was shown earlier, such earnings account for between almost a quarter of all earnings in metropolitan areas and over half in rural areas.

3.5.3 Implicit earnings from own-account work

A large portion of the households has at least one family member working in a family business or farm or is otherwise self-employed. It is difficult to get a detailed picture of this work, but it is possible to get a general picture of the magnitude of this work and the implicit rate of remuneration in it.

The annual hours worked by family members in own-account work by region are shown in table 3.18. As a standard of comparison, one can figure that 12 months of 180 hours of work a month would be about 2160 hours of work a year. Thus in each region the households with own-account workers in non-agricultural activity have between one and two full-time equivalents of household labor. In agriculture, the amount of own-account work is much larger than own-account work in rural areas. Agricultural work in urban areas is too small to make useful generalizations. (The very high agricultural work in urban Lower Egypt applies to 19 very large households — 14 of which exceed 8 people.)

The amount of own-account work varies with family size, as shown in table 3.18. While the pattern is not completely uniform, there is a generally positive association, particularly in agriculture. Even here, however, the increase in hours worked does not increase proportionally with family size, and households with 10 members have only 2.8 times as much family labor as those of size 2. For all types of own-account work, the increment is even smaller, 1.7 times.

Since the family's earnings from household business represent earnings from labor and capital, the economic returns to labor in own-account work can only be precisely estimated if one knows, not only the labor input to a family business, but the capital (including land) input as well.[2] This data set was not designed to get such precise estimation of economic returns to labor. A very imperfect picture of the reward to labor in family business can be obtained by dividing the earnings from family business by the time input. This represents the upper limit of the value of the contribution of labor to earnings in own-account work.

Regional differences in these figures are shown in table 3.19. These differences do not reflect previous patterns.

[2]The World Bank estimates for the rural sector in general and agriculture in particular show that the returns to capital exceed those to labor, and this should be considered in interpreting these data.

Table 3.18 Annual hours worked by family in own-account work by type of activity, region, and household size

	Non-agriculture		Agriculture		Total	
Region		(N)		(N)		(N)
Cairo and Alexandria	3260	(130)	[576]	(1)	3265	(130)
Lower Egypt — urban	3030	(100)	[6129]	(19)	3616	(116)
Upper Egypt — urban	2773	(55)	[2051]	(14)	2746	(66)
Lower Egypt — rural	2315	(141)	3612	(412)	3711	(489)
Upper Egypt — rural	2100	(119)	2950	(344)	3235	(391)
Household size						
2	2679	(24)	1747	(25)	2249	(48)
3	2065	(39)	2009	(40)	2235	(72)
4	2359	(69)	2584	(65)	2803	(118)
5	2862	(70)	2739	(85)	2988	(145)
6	2443	(82)	3062	(111)	3052	(177)
7	2709	(77)	2689	(116)	3056	(172)
8	2920	(65)	3168	(95)	3505	(140)
9	3457	(44)	3970	(80)	4085	(115)
10+	2623	(73)	4934	(173)	5097	(205)
All Egypt	2671	(545)	3353	(790)	3443	(1192)

NOTE: Brackets denote sample size ≤ 20.

Table 3.19 Earnings per hour in piasters in own-account work and employment by region and activity

Region	Own-account		Work for others
	Non-agriculture	Agriculture	
Cairo and Alexandria	28.7		25.0
Lower Egypt — urban	28.3	[13.5]	21.5
Upper Egypt — urban	35.9	[17.2]	21.2
Lower Egypt — rural	28.9	25.7	13.5
Upper Egypt — rural	30.0	16.6	11.8
Total	29.7	21.3	17.8

NOTE: Brackets denote sample size ≤ 20.

Urban Upper Egypt has the highest implicit earnings per hour in non-agriculture followed by rural Upper Egypt. The other three areas have almost identical implicit earnings per hour in own-account work outside of agriculture. In agriculture, rural Lower Egypt has substantially higher earnings per hour than anywhere else except for the one atypical farmer in Cairo/Alexandria (data not shown). Rural Upper Egypt has only 65 per cent of the implicit earnings per hour of rural Lower Egypt, a very sharp differential.

Comparisons between sectors show that outside Cairo/Alexandria own-account work in agriculture appears to be far less rewarding than in non-agricultural activities in all areas except rural Lower Egypt, where the non-agricultural advantage is relatively small.

Comparisons between earnings per hour from own-account work and work for others in 1979 indicate that non-agricultural own-account work might be more remunerative in urban areas than employment, but the difference is small in Cairo/Alexandria, and could well reflect the return on capital in own-account work that is being artificially attributed to labor with this simple calculation. In rural areas and in urban Upper Egypt, the differences in implicit earnings per hour in non-agricultural own-account work and employment are substantial.

In rural areas, own-account farming appears substantially more remunerative than employment, particularly in Lower Egypt. It is possible that the large differences could reflect the economic return to land, and that land in Lower Egypt is more productive than in Upper Egypt.

Other variations in implicit earnings per hour of own-account work can be explored, such as the relationship between family size, farm size, etc. It seems advisable, however, to delay detailed analysis until more sophisticated techniques can be used in later studies to adjust at a minimum for the contribution of land in agriculture.

3.6 THE LABOR OF WOMEN AND CHILDREN

One of the most frequently mentioned reasons for continued high fertility, particularly in rural Upper Egypt, is child labor. Therefore, no review of the economic conditions of households would be complete without examining the participation of children in work — own-account and for others. The relationship between female labor and fertility is important as well, and will be discussed in the second part of this section.

3.6.1 Child labor

Table 3.20 shows the labor participation rates by region and sex for young children and early adolescents. The proportions working in all regions are very small for children 6–9. Only in rural Lower Egypt did it exceed 5 per cent at any time in 1979. For children 10–14, the figures are much higher, especially for boys. Here again, labor participation of children is much higher in rural Lower Egypt than elsewhere, followed by rural Upper Egypt, then urban Lower Egypt. On this basis, employment of boys 10–14 is significant in rural areas, and for girls it is significant in Lower Egypt.

The proportion working is not the only measure of the value of children's current economic contribution. The

Table 3.20 Proportion of children working by region, sex and age group

Region	Males		Females	
	6–9	10–14	6–9	10–14
Cairo and Alexandria	1.4	8.1	0.7	0.0
Lower Egypt — urban	3.3	18.1	2.6	3.7
Upper Egypt — urban	2.1	4.2	0.0	0.0
Lower Egypt — rural	5.9	28.9	6.1	13.0
Upper Egypt — rural	1.4	22.2	1.7	4.6
Total	3.3	19.6	4.1	6.1

Table 3.21 Proportion of family work (annual hours) contributed by children under 15, by region and type of work

Region	Own-account		Work for others	Total
	Agriculture	Non-agriculture		
Cairo and Alexandria	—	2.9	1.3	1.5
Lower Egypt — urban	[20.0]	2.0	4.3	3.4
Upper Egypt — urban	[8.1]	—	0.8	0.9
Lower Egypt — rural	5.8	1.9	6.8	6.2
Upper Egypt — rural	3.5	0.7	3.8	3.8
Total	5.2	1.8	3.9	4.0

NOTE: Brackets denote sample size ≤20.

proportion of total family labor contributed by children is perhaps a better measure. Table 3.21 documents regional differences in this proportion. Over all regions and types of work, children under 15 contribute only 4 per cent of the total hours worked annually. Only in rural Lower Egypt does this proportion exceed 5 per cent.

The economic contribution of children is probably poorly measured in surveys such as this because the sporadic nature of their contribution may well lead to memory lapses on the part of parents. Nevertheless, the lapses would have to be quite substantial (more than 50 per cent) for children to contribute as much as 10 per cent to the family labor supply.[3] Children, particularly girls, make important domestic contributions which are, of course, not included in a study such as this. To try to capture these other elements of the contribution of children, parents were asked about the general contribution of children. These questions will be analyzed in a later chapter.

[3]The value of the direct economic contribution of children would be even less since children do not make as much of a per-hour contribution as an adult in most cases.

Table 3.22 Female labor participation and days worked per month by participants last year by marital status, living children and months since last birth (sample sizes in parenthesis)

	Proportion working			Average days per month last year		
	Urban	Rural	Total	Urban	Rural	Total
Marital status						
Currently married	12.0 (1116)	10.4 (1680)	11.0 (2796)	24.8 (133)	20.2 (173)	22.2 (306)
Not currently married	10.3 (682)	15.1 (880)	13.0 (1562)	24.2 (72)	20.6 (133)	21.9 (205)
Total	11.4 (1798)	12.0 (2560)	11.7 (4358)	24.6 (205)	20.4 (306)	22.1 (511)
Number of living children[a]						
0	22.1	8.4	12.9	25.5	18.9	22.6
1	18.3	12.6	14.8	24.9	21.0	22.8
2	17.2	15.0	15.9	24.3	19.7	21.8
3	17.2	14.9	15.9	23.9	19.5	21.6
4	7.0	18.4	13.4	24.2	21.4	22.1
5	7.2	11.2	9.6	23.5	20.7	21.6
Months since last birth[a] (for those with children)						
Less than 12	13.0	12.4	12.6	24.4	19.9	21.7
12–23	12.2	12.0	12.1	25.1	17.7	20.6
24–35	15.0	15.6	15.4	24.5	18.5	20.9
36–47	17.7	15.9	16.6	23.9	22.3	22.8
48+	13.5	12.6	13.0	24.1	21.5	23.0

[a]For 238 currently married and 1188 not currently married women, there are no data on fertility because they did not complete the fertility questionnaire.

3.6.2 The labor contribution of women

The relationship between female labor participation and fertility is complex. The labor participation of women in Egypt is relatively low as was documented in earlier parts of this chapter — a much smaller proportion of women than men work outside the home; they work fewer hours on the main job and are less likely to have second jobs. The details of female labor participation, marital status, and fertility are given in table 3.22.

For all Egypt married women are somewhat less likely to be working than those who are not currently married. This is also true in rural Egypt but not urban Egypt. There is not, however, a uniform relationship between number of living children and labor participation. In urban areas the proportion working decreases up to four children. Those with no children are three times more likely to work than those with four children. In rural areas, there is no uniform relation between number of children and female labor force participation.

The time since last birth is very close to a measure of the age of youngest child which has been found to have a significant effect on female work in developed countries, but does not seem to have a uniform effect here. This may be because child care is more easily available in Egypt, and because the effect of children on female labor participation varies by type of work.

In terms of amount of time worked as measured by days worked last month, one finds that there is very little difference between those currently married and others. Likewise, days worked are not systematically related to number of living children or the length of time since last birth. In urban areas, days worked decrease up to the third child, but are irregular thereafter. In rural areas, days worked are not related to family size. In both urban and rural areas, days worked are unrelated to time since last birth.

These data tend to suggest that fertility per se may not be a major factor determining female labor supply, but the definitive analysis of the relationship will have to await more sophisticated techniques used in later papers.

3.7 SUMMARY AND CONCLUSION

In this section, variations in income, employment, and earnings have been explored in detail. This provides a background for understanding the economic context of the Egyptian family. This context is expected to affect both fertility attitudes, contraceptive knowledge, and behavior. These relationships will be described in the next chapters. The economic context will be briefly summarized in the remainder of this chapter.

Strong regional differences exist in economic well-being. By almost all measures, the people in Cairo/-Alexandria are richest, and those in rural Upper Egypt are poorest; rural Lower Egypt is second poorest. In most, but not all respects, urban Lower Egypt is better off than urban Upper Egypt.

By a number of measures, income per capita and expenditure per capita, those in Cairo and Alexandria have about twice the levels of well-being of those of rural Upper Egypt. In terms of ownership of durables of household amenities, the differences in well-being are even greater, and the proportion of households in the poorest quintile is four times greater in rural Upper Egypt than in the metropolitan areas. Thus there are substantial regional differentials in welfare which might be expected to play a role in explaining frequently observed differences in fertility.

In terms of sources of income and levels of remuneration, there are substantial differences as well between regions. Overall, 48 per cent of household income comes from employment for others. In metropolitan areas, the proportion is much higher and in rural areas somewhat lower. Remittances constitute only slightly over 7 per cent of income and this figure is highest in rural Upper Egypt and lowest in rural Lower Egypt, but nowhere exceeds 10 per cent. Crops and other agricultural production contribute 25 per cent of household income, 41–42 per cent in rural areas. Other sources of income contribute about 20 per cent, 12–14 per cent in rural areas, and higher but quite variable proportions elsewhere.

The remuneration from work varies greatly by region as well. For employment for others and implicit earnings per hour in agriculture, rural Upper Egypt is the most disadvantaged, while for non-agricultural self-employment the implicit earnings per hour are similar to those for the country as a whole. Cairo/Alexandria's advantage lies in the returns per hour of those working for others.

CHAPTER 4

FERTILITY AND CHILD SURVIVAL

4.1 INTRODUCTION

The relationships between fertility and child survival and the background factors of education, wife's work pattern, husband's occupation and region of residence were described in detail for the full sample in volume II.

The major contribution of this volume to the analysis of cumulative and current fertility and child survival is the examination of differentials in these variables by selected economic characteristics of the household, income and expenditure per capita, wife's current work status, and housing quality as measured by water source and electricity. In order to understand the relative importance of the economic factors, it is necessary to compare differentials across economic groups with differentials across social groups. Therefore, differentials in fertility and child survival by social background characteristics, as well as economic characteristics, will be presented in this chapter for the second-phase subsample. In addition, differentials across income groups will be adjusted for wife's education, one of the most significant social background factors.

In this chapter, differentials in cumulative fertility (as measured by children ever born) and current fertility (as measured by the children born in the last five years) will be examined in detail. In addition, total fertility rates for economic groups — but not social background groups — will be presented. Child survival will be measured by the proportion of children surviving and indirect estimates of child mortality. Most of these dimensions of fertility and mortality show strong social, economic and regional differentials.

4.2 CUMULATIVE FERTILITY: CHILDREN EVER BORN

The number of children ever born, or current parity, represents the summation of the live births that a woman has had up to the date of the interview. Differentials in this measure of fertility are shown in tables 4.1 and 4.2. Since children ever born is closely related to the woman's age, it is necessary to adjust the fertility of each group for differences in age composition as was explained in volume I.

4.2.1 Differentials in children ever born by background

Table 4.1 shows that wife's education has the sharpest differentials in the number of children ever born, and these differentials persist when age adjustment is made. In urban areas, every increment in education is associated with substantially lower fertility, and women with secondary or higher education have 2.9 fewer children than the uneducated; only a very small portion of this difference (a fifth of a child) is attributed to the fact that more educated women tend to be younger.

In rural areas there are substantial differences in fertility (2.2–2.3 children) between the most educated and the least educated women, but not every increment is associated with lower fertility. The highest level of fertility is not among the unschooled, but among those who are illiterate who have had only some schooling.

Husband's education shows a general inverse relationship with fertility, but the differences between the most educated and the least educated are less than for wife's education. As for wives, in urban areas each increase in education tends to be associated with lower fertility (looking at age-adjusted figures), but the differences are small in several cases. In rural areas, the highest fertility is not observed for the unschooled, but for those who are literate but have not obtained a primary certificate.

Wives who have worked since marriage have lower fertility than other women in urban areas, but not necessarily in rural areas. In considering husband's occupation, one finds the lowest fertility among women married to professional men, and the highest fertility among the agricultural self-employed.

Regional patterns differ depending on whether age adjustment is used. With age adjustment, Cairo and Alexandria have the lowest fertility, followed by urban Lower Egypt, then urban Upper Egypt, then rural Lower Egypt, and women in rural Upper Egypt have the highest number of children ever born on average.

4.2.2 Differentials in children ever born by economic group

Table 4.2 shows differentials in children ever born by economic factors and the correlates of those factors,

Table 4.1 Average children ever born by background variables

	Urban		Rural		Total	
	Unadj.	Adjusted for age	Unadj.	Adjusted for age	Unadj.	Adjusted for age
A Wife's education						
Illiterate, no school	5.0	4.9	4.5	4.5	4.6	4.7
Illiterate, some school	4.6	4.6	4.8	4.8	4.7	4.7
Read and write	4.0	3.9	4.5	4.4	4.2	4.0
Primary	3.2	3.2	3.9	3.3	3.4	3.3
Secondary/university	2.1	2.2	2.2	2.3	2.1	2.1
Total	4.1		4.5		4.3	
B Husband's education						
Illiterate, no school	5.2	5.0	4.7	4.5	4.8	4.7
Illiterate, some school	4.5	4.6	4.0	4.5	4.2	4.6
Read and write	4.5	4.5	4.8	4.8	4.6	4.6
Primary	4.2	4.1	4.0	4.6	4.1	4.2
Secondary/university	2.8	2.9	3.1	3.4	2.9	3.0
C Wife's work pattern						
Never worked	4.4	4.4	4.5	4.6	4.5	4.5
Before only	3.7	4.5	3.8	4.3	3.8	4.4
Since and before	3.0	2.9	4.5	4.3	3.9	3.8
D Husband's occupation						
Professional					3.1	3.1
Clerical					3.3	3.5
Sales					4.7	4.5
Agriculture — self-employed					4.9	4.9
Agriculture — employees					4.2	4.5
Services					4.8	4.5
Manual labor					4.4	4.3

E Region

Wife's age	Cairo & Alexandria	Urban		Rural	
		Lower	Upper	Lower	Upper
15–19	0.6	0.8	0.6	0.8	0.7
20–24	1.8	1.6	1.9	1.9	2.2
25–29	2.8	2.8	3.6	3.6	3.3
30–34	4.0	4.1	4.8	5.1	5.8
35–39	4.8	5.3	6.4	6.1	6.7
40–44	5.8	6.6	6.5	7.4	7.6
45–49	6.3	7.3	7.4	7.6	7.3
15–49 (Unadj.)	4.0	4.0	4.6	4.5	4.5
(Adj.)	3.7	4.0	4.4	4.6	4.8

water source and electricity. There are sharp differentials across income per capita and expenditure per capita groups. The richest in urban areas have 2.7 fewer children than the poorest when age-adjusted figures are examined. In rural areas, the differences across income and expenditure groups are about half as great, 1.2–1.3. In rural areas, one finds a pattern similar to that observed for education: the lowest group does not have the highest fertility. For both income per capita and expenditure per capita, the second quintile has marginally higher fertility than the poorest group. When one adjusts income per capita for wife's education, one gets some insight into how much of the economic differentials arise from background differentials. Substantial differentials persist across income groups after adjustment, and the pattern remains the same with fertility being marginally higher in the second than the first quintile.

The correlates of income, wife's work status in 1979 and household amenities of water and electricity, show substantial differentials in urban areas, but little or no difference in rural areas.

Thus children ever born differ between regions, education, occupation, and income and expenditure groups. The richer and better educated in the more developed regions have lower lifetime fertility than others, but the

Table 4.2 Average children ever born by socio-economic variables

	Urban		Rural		Total	
	Unadj.	Adjusted for age	Unadj.	Adjusted for age	Unadj.	Adjusted for age
A Per capita income quintiles						
Lowest 20	5.6	5.3	4.9	4.7	5.1	4.9
21–40	4.8	4.9	4.8	4.8	4.8	4.9
41–60	4.9	4.9	4.5	4.6	4.6	4.8
61–80	4.3	4.3	3.7	4.0	4.0	4.1
81+	2.5	2.6	3.5	3.4	2.8	2.7
B Per capita expenditure quintiles						
Lowest 20	5.3	5.2	4.9	4.7	5.0	4.9
21–40	5.2	5.1	4.9	4.8	5.0	4.9
41–60	4.9	4.9	4.6	4.7	4.7	4.8
61–80	4.6	4.5	3.4	3.6	4.0	4.0
81+	2.5	2.5	3.2	3.5	2.6	2.6
C Per capita income adjusted for wife's education[a]						
Lowest 20	4.8	4.5	4.4	4.5	4.4	4.4
21–40	4.1	4.1	4.2	4.6	4.1	4.3
41–60	4.3	4.1	3.9	4.4	4.0	4.2
61–80	3.8	3.6	3.2	3.8	3.5	3.6
81+	2.7	2.5	3.2	3.1	2.8	2.6
D Wife's work status, 1979						
Not working	4.3	4.4	4.5	4.5	4.4	4.5
Working for self/family	5.3	4.7	4.6	4.5	4.7	4.7
Working for others	2.5	2.4	4.1	3.7	3.0	2.6
E Source of water						
Faucet — in residence	4.0	3.9	4.4	4.3	4.1	3.8
Faucet — other	4.2	4.5	4.4	4.4	4.4	4.5
Pumps/other	4.7	4.7	4.6	4.6	4.6	4.8
F Electricity						
Yes	4.1	4.0	4.5	4.4	4.3	4.1
No	4.4	4.8	4.5	4.5	4.5	4.7

[a] These figures are adjusted for wife's education and wife's age by use of multiple classification rather than age standardized procedures used elsewhere.

patterns of differentials across socio-economic groups are far less uniform in rural areas.

4.3 CURRENT FERTILITY

Patterns of current fertility may well deviate from those in cumulative fertility. It is therefore necessary to document these differentials. Current fertility can be measured by the number of children born in the last five years to women continuously married during that period. Since fertility, both cumulative and current, is closely related to a woman's age, it is necessary to adjust for age when comparing the fertility of different groups. In this section, age adjustments similar to those in the preceding section will be used. In addition, the fertility of different groups depends not only on the fertility of married women, but also on the proportion of the women of each age group who are married. To examine the importance of this factor, total fertility rates over the previous five years will be examined for economic groups.

4.3.1 Differentials in children born in the last five years by background

Table 4.3 shows differences by background in children born in the last five years, both unadjusted and adjusted for wife's age. In urban areas, age-adjusted figures show that for both husband's and wife's education, the number of births in the last five years is inversely related to current fertility, but not every increment in education brings a reduction in current fertility. The difference between the least educated and the most educated group is four-tenths of a child.

In rural areas, the most educated women have had more children than any other group in the last five years — even with age controlled. This pattern differs from that for cumulative fertility. This may well be due to a

Table 4.3 Average children born in last five years by background variables

	Urban		Rural		Total	
	Unadj.	Adjusted for age	Unadj.	Adjusted for age	Unadj.	Adjusted for age
A Wife's education						
Illiterate, no school	1.0	1.1	1.3	1.3	1.2	1.2
Illiterate, some school	1.1	1.0	1.1	1.2	1.1	1.1
Read and write	0.9	0.9	1.2	1.3	1.0	1.1
Primary	0.9	0.9	1.2	1.1	1.0	1.0
Secondary/university	0.9	0.7	1.5	1.5	1.0	0.8
Total	1.0		1.4		1.2	
B Husband's education						
Illiterate, no school	1.1	1.2	1.2	1.3	1.2	1.3
Illiterate, some school	1.2	1.2	1.3	1.3	1.2	1.2
Read and write	1.0	1.0	1.3	1.4	1.2	1.2
Primary	0.9	0.9	1.2	1.2	1.0	1.0
Secondary/university	0.9	0.8	1.3	1.1	1.0	0.9
C Wife's work pattern						
Never worked	1.0	1.0	1.3	1.3	1.2	1.2
Before marriage only	1.1	1.0	1.2	1.2	1.2	1.1
Worked since marriage	0.9	0.8	1.3	1.2	1.2	1.1
D Husband's occupation						
Professional					1.1	1.0
Clerical					1.0	1.0
Sales					1.2	1.2
Agriculture — self-employed					1.2	1.2
Agriculture — employees					1.3	1.3
Services					1.2	1.2
Manual labor					1.1	1.1

E Region

Marital duration	Cairo & Alexandria	Urban		Rural	
		Lower	Upper	Lower	Upper
0–5	1.0	1.0	1.0	1.0	0.9
6–9	1.7	1.8	2.0	2.0	1.9
10–14	1.2	1.3	1.6	1.8	1.6
15–19	0.9	1.0	1.2	1.2	1.4
20–24	0.6	0.5	0.9	1.0	1.2
25–29	0.2	0.0	0.2	0.4	0.6
30+	0.1	0.1	0.3	0.3	0.0
Total (Unadj.)	0.9	1.0	1.2	1.2	1.3
(Adj.)	1.0	1.0	1.2	1.2	1.3

catching up of those women who married later. This factor would not be controlled by age adjustment. For husband's education, the most educated have had fewer children than the least educated; however, the group with the highest recent fertility is not the least educated, but those who can read and write but have not completed primary school. This is precisely the group with the largest cumulative fertility.

Women who have worked since marriage have the lowest recent fertility in urban areas, but not necessarily in rural areas. Wives of men in professional and clerical occupations have had the lowest recent fertility, and those of men who are agricultural employees have the highest recent fertility.

Regional patterns of recent fertility differ from patterns of cumulative fertility. There are three regional groupings: metropolitan areas and urban Lower Egypt have the lowest recent fertility, urban Upper Egypt and rural Lower Egypt have recent fertility that is 20 per cent higher, and rural Upper Egypt has marginally higher fertility. These three regional groupings persist with respect to many attitudinal variables examined in the next chapter.

4.3.2 Differences in children born in the last five years by economic group

The relationship between recent fertility and per capita income and expenditures is quite similar to that observed for husband's education. In urban areas, children born in the last five years decreases almost uniformly with increases in income or expenditure group. In rural areas, this uniform decrease is observed with respect to per capita income; but per capita expenditure has a less regular pattern, and the recent fertility of those in the second expenditure quintile is marginally above that of the lowest quintile. In general, the differences in current fertility across income and expenditure groups are somewhat larger than across education groups. When income per capita is adjusted for wife's education, the differentials between the highest and lowest income groups increase as shown in table 4.4.

In terms of correlates of income, one finds that women who worked for others had lower recent fertility than other women. As with cumulative fertility, however, household amenities of piped water and electricity are only associated with lower recent fertility in urban areas.

4.3.3 Differences in total fertility rates by selected economic factors

While children born in the last five years measure marital fertility, a substantial portion of group differences in current fertility arises from differences in the proportion of those women in the group who are married. It is possible to calculate total fertility for selected groups if one can identify the women who are unmarried in selected groups, as well as estimating the fertility of those who are married. It is possible to identify the unmarried women from the household survey, and calculate total fertility rates by household characteristics. It is much more difficult to calculate total fertility rates by individual characteristics, since there is very little information on individual characteristics on the household survey.

Table 4.4 Average children born in last five years by socio-economic variables

	Urban		Rural		Total	
	Unadj.	Adjusted for age	Unadj.	Adjusted for age	Unadj.	Adjusted for age
A Per capita income quintiles						
Lowest 20	1.4	1.3	1.4	1.4	1.4	1.4
21–40	1.2	1.2	1.3	1.3	1.3	1.3
41–60	1.0	1.1	1.4	1.3	1.2	1.2
61–80	1.0	1.0	1.0	1.0	1.0	1.0
81+	0.7	0.7	0.9	1.0	0.7	0.8
B Per capita expenditure quintiles						
Lowest 20	1.3	1.3	1.4	1.3	1.3	1.3
21–40	1.2	1.2	1.4	1.4	1.4	1.4
41–60	1.1	1.1	1.3	1.2	1.2	1.2
61–80	1.0	1.1	1.0	1.0	1.0	1.0
81+	0.7	0.7	0.9	0.9	0.7	0.7
C Per capita income adjusted for wife's education						
Lowest 20	1.5	1.6	1.8	1.6	1.5	1.3
21–40	1.3	1.4	1.7	1.5	1.4	1.1
41–60	1.1	1.2	1.7	1.5	1.3	1.1
61–80	1.0	1.2	1.4	1.2	1.1	0.9
81+	0.6	0.9	1.0	1.1	0.7	0.7
D Wife's employment status 1979						
Not working	1.0	1.0	1.3	1.4	1.2	1.2
Working for self/family	1.1	1.1	1.4	1.5	1.3	1.4
Working for others	0.8	0.8	1.3	1.3	1.0	1.0
E Source of water						
Faucet — in residence	0.9	0.9	1.4	1.3	1.0	1.0
Faucet — other	1.2	1.1	1.2	1.2	1.2	1.2
Pumps and other	1.4	1.4	1.3	1.3	1.3	1.3
E Electricity						
Yes	0.9	0.9	1.3	1.4	1.1	1.1
No	1.4	1.3	1.4	1.4	1.4	1.3

Table 4.5 Total fertility rates five years before survey by selected household characteristics

	Total
A Per capita income quintiles	
Lowest 20	6.13
21–40	6.00
41–60	5.39
61–80	4.91
81+	3.82
B Source of water	
Faucet — in residence	4.48
Faucet — other	5.72
Pumps and other	6.38
C Electricity	
Yes	4.76
No	6.44

The total fertility rates by selected household characteristics are shown in table 4.5. Unfortunately, the sample sizes are somewhat small for calculating TFRs separated by group in urban and rural areas.

The differences in total fertility across per capita income groups are substantial: the difference between the TFRs of the highest and lowest income groups is 2.3. These differences are very close to those observed in children ever born across income groups.

Total fertility rates also differ greatly between households depending on their access to piped water and electricity. If current fertility rates persist, those with faucets in their residence would have 1.4 fewer children over their lifetime than those with faucets outside, who in turn will have about one-third of a child less than others. A substantial portion of this difference, however, can be attributed to urban–rural differences. Those with electricity would have 1.68 fewer children.

Thus current fertility has somewhat different patterns than cumulative fertility, and differentials in current fertility of married women differ from those for measures of fertility which cover all women in the group — married and unmarried.

4.4 CHILD SURVIVAL

Social and economic factors affect the number of children a couple has and the proportion of those children who survive. The difference in child survival across groups in turn affects whether couples wish to continue childbearing and thus affects future fertility. In a survey such as this, measuring child survival in a meaningful way is not easy. The proportion of children surviving is not meaningful unless some control for the period over which the child has been exposed to the risk of dying is introduced. The simplest way to control for this is to use a proxy such as maternal age. More sophisticated indirect techniques make much finer adjustments. In this section, the proportion of children surviving adjusted for maternal age will be examined.

A major limitation of the analyses in this section is that infant and child deaths are much rarer events than births. Therefore, given the smaller sample size in the second phase, there are much fewer events to study in the second phase than the first phase, and our degree of confidence in the estimated differentials must be correspondingly reduced.

Tables 4.6 and 4.7 summarize the differentials in child survival by background and economic groups. In general, the higher the education, the higher the child survival. This pattern is sharpest and most uniform for wife's education in rural areas. The proportion of children dying among rural women with secondary education or above is only 38 per cent that of unschooled rural women. In urban areas, the most educated women have a proportion of children dying which is 61 per cent that of the uneducated. For husband's education, the comparable figures for rural and urban areas are 71 per cent and 68 per cent, respectively.

Wife's work pattern shows small differences, but in both urban and rural areas, women who have worked since marriage have slightly higher survival rates for their children. Wives of clerical workers show the highest child survival rates, and those of men in agriculture have the lowest.

Regional data show that all areas except rural Upper Egypt have fairly similar survival rates, but the children of women in rural Upper Egypt are twice as likely to have died as those in Cairo/Alexandria or urban Lower Egypt.

As shown in table 4.7, the relationship between income and expenditure per capita and the proportion of children surviving is not as expected. In urban areas, survival rates are somewhat higher for those in the higher income groups than for others, but in rural areas the converse is true. This perverse finding probably arises from the fact that child mortality raises per capita income by reducing the number of household members. This effect is most likely to predominate in rural areas, since fertility levels themselves differ less between income groups in rural than urban areas, so mortality is relatively more important in explaining household size and thus per capita income than in urban areas.

Household amenities do show expected relationships

Table 4.6 Proportion of children surviving by background variables

	Urban		Rural		Total	
	Unadj.	Adjusted for age	Unadj.	Adjusted for age	Unadj.	Adjusted for age
A Wife's education						
Illiterate, no school	82	82	76	77	78	78
Illiterate, some school	81	82	79	79	80	82
Literate, no certificate	83	81	82	82	83	80
Primary	89	90	85	86	88	89
Secondary/university	91	89	91	91	91	87
Total	84		78		80	
B Husband's education						
Illiterate, no school	81	81	76	76	77	77
Illiterate, some school	82	83	74	73	77	77
Literate, no certificate	82	83	80	81	81	82
Primary	84	85	80	79	82	83
Secondary/university	89	87	90	83	89	87
C Wife's work pattern						
Never worked	83	84	77	78	80	80
Before only	85	84	78	77	81	80
Since and before	86	86	80	82	82	82
D Husband's occupation						
Professional					88	85
Clerical					89	89
Sales					81	80
Agriculture — self-employed					77	77
Agriculture — employees					77	77
Services					80	80
Manual labor					82	82
E Region						
Cairo and Alexandria					84	85
Urban Lower					86	86
Rural Lower					83	83
Urban Upper					80	81
Rural Upper					71	70
All Egypt					80	

in urban and rural areas. Households with inside faucets have substantially higher child survival, particularly in rural areas. This is not unexpected given the very high incidence of water-borne diseases in Egypt. Electricity has a stronger association with survival in urban than rural areas. Finally, women who work for others have substantially higher rates of child survival than other women in urban and rural areas. These differences probably arise in part from the fact that these women tend to have higher levels of education.

Thus, economic characteristics of households seem to have some impact on child survival, but per capita income and expenditure are probably inappropriate measures for detecting this effect, given that mortality affects per capita income as well as the converse. This is also true with respect to fertility measures to some degree. In later analysis, measures of economic welfare less dependent of family size will be used to study these interactions.

4.5 SUMMARY AND CONCLUSION

There are strong regional and socio-economic differences in fertility and child survival. Cairo/Alexandria and urban Lower Egypt show very similar current fertility (as measured by births in the last five years) and total fertility rates over the last five years. The metropolitan areas, however, have somewhat lower cumulative fertility. The other regions vary somewhat in their clustering, but rural Upper Egypt has the highest fertility by all measures. On some measures, urban Upper Egypt and rural Lower Egypt have identical fertility, but for children ever born and total fertility rates rural Lower Egypt has higher fertility.

For child survival, the largest differences are between rural Upper Egypt and the rest of the country. Cairo/Alexandria and urban Lower Egypt have the lowest proportion dying and the other two regions have slightly higher proportions.

Table 4.7 Proportion of children surviving by socio-economic variables

	Urban		Rural		Total	
	Unadj.	Adjusted for age	Unadj.	Adjusted for age	Unadj.	Adjusted for age
A Per capita income quintiles						
Lowest 20	85	85	80	80	81	81
21–40	81	81	75	75	77	77
41–60	83	84	79	78	81	81
61–80	83	83	78	78	80	81
81+	87	88	74	74	84	84
B Per capita expenditure quintiles						
Lowest 20	85	81	80	80	81	81
21–40	79	80	78	78	78	79
41–60	82	82	77	77	79	79
61–80	84	84	74	74	80	80
81+	87	88	77	77	85	86
C Per capita income adjusted for wife's education						
Lowest 20	89	89	90	88	88	87
21–40	85	84	85	83	84	83
41–60	87	87	88	86	87	86
61–80	86	86	86	85	86	85
81+	87	88	80	80	84	85
D Wife's employment status 1979						
Not working	83	84	77	77	80	80
Working for self/family	79	81	77	78	77	78
Working for others	90	88	88	89	89	89
E Source of water						
Faucet — in residence	86	86	88	87	86	87
Faucet — other	80	80	78	78	78	78
Pumps/other	79	74	76	76	76	76
F Electricity						
Yes	85	85	80	80	83	83
No	77	76	76	76	76	76

Socio-economic patterns in fertility and child survival differ by urban and rural areas. Husband's and wife's education are associated with lower cumulative and current fertility in urban areas, but in rural areas wife's education is associated with a larger number of children born in the last five years — even after age is controlled. In rural areas, women whose husbands have a small amount of education have higher fertility (current and cumulative) than those with no schooling, but those whose husbands have primary school and above, have much lower fertility than other groups. This pattern of increasing fertility prior to a decrease with increasing education is observed also for wife's education in rural areas.

Differences in current and cumulative fertility across per capita income groups are fairly uniform in urban areas, and higher income is associated with lower fertility. These differences exceed those in husband's education in urban areas, and persist when wife's education is controlled. Differences in TFRs are uniform and substantial across income groups as well, but comparison cannot be directly made to TFRs by educational groups.

The proportion of children surviving shows expected differences across region, education and occupation groups, but the relationship between per capita income and expenditure and child survival is perverse in rural areas. In addition, source of water supply in rural areas — which was not associated with fertility — is an important determinant of child survival.

These regional patterns and socio-economic differentials in fertility arise in part from differences in contraceptive use. These differences result from differences in the motivation to use contraception and differences in knowledge and access to contraception. In the next chapter, fertility attitudes and preferences of husbands will be examined in an effort to understand regional socio-economic differences in motivation to use contraception. In chapter 6, differentials in contraceptive knowledge, access and use will be discussed.

CHAPTER 5

THE DEMAND FOR CHILDREN

5.1 INTRODUCTION

The attitudes that husbands and wives express about the number of children they want and their expectations for these children provide some insights into why they behave as they do. Couples who say they want large families are more likely than others to eventually have large families and less likely than others to use contraceptives. The effect of family size attitudes on contraceptive use will be explored in the next chapter. In this chapter, the perceived economic benefits of children, the educational aspirations for children and family size desires of husbands and wives will be studied in detail. The purpose of this chapter is to establish the degree to which men and women, husbands and wives, agree about the benefits of, and aspirations for, children and the degree to which these attitudes are affected by their background and current economic circumstances. In turn, the degree to which perceived benefits and aspirations and background and current circumstances affect preferences of husbands and wives need to be studied. All of these associations may affect the degree of contraceptive use — a point that will be addressed in the next chapter.

In the following sections the potential economic benefits of children will first be examined relative to background factors, such as education, wife's work pattern, husband's occupation and region of residence. The association of perceived benefits with current economic circumstances will then be reviewed. A similar examination of the educational aspirations of husbands and wives for their sons and daughters will follow this section.

It is expected that perceived benefits of and aspirations for children will affect the family size preferences of husbands and wives. The association between perceived benefits and aspirations for children and family size preferences will be reviewed to determine if this is in fact the case.

The association of other factors with family size desires and the preferences of husbands and wives will then be reviewed. Family size preferences can be measured in many ways — desires for a given number of children or of sons or daughters, or desire to have or not to have additional children. People may or may not be perfectly consistent in the preferences they express and husbands and wives may or may not agree on their preferences. The agreement between spouses and the association between preferences of husbands and wives and their own background and current socio-economic circumstances will be explored in some detail in this chapter since one of the major contributions of the Egyptian Fertility Survey is the availability of data on both spouses.

5.2 THE BENEFITS OF CHILDREN

The benefits of children are many and varied. 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 husbands and wives felt sons and daughters became useful. The long-term benefits were measured by the parents' expectation to live with their children in their old age, and the sources of old age financial support expected by husbands and wives.

5.2.1 Short-term benefits

The perceived age at which children become useful reflects both parents' perceptions about the ability of children to take on a task, which varies by the child and the kind of task, but it also probably reflects the desirability of either having children work and take on responsibilities or devote their time to leisure or schooling. Therefore, the perceived age at which children become useful should vary both by the kinds of tasks to be performed and the parents' desire to impose or protect children from work and responsibility at early ages. It is impossible to separate out the various factors that together lead to the perceived age at which children are useful. It is expected, however, that the younger the age at which children are useful, the less costly the child, the greater the net benefits of children and thus the more children parents might want.

The data in tables 5.1 and 5.2 show differentials in the age at which sons and daughters are perceived to be useful by background and current socio-economic circumstances. There is one universal observation that emerges: husband and wife perceive girls to become

useful at an earlier age than boys. Overall, husbands perceive sons to be useful at 13.6 and daughters at 10.5, while for wives the ages are 11.4 and 9.8 respectively. For all possible comparisons shown in table 5.1, there is no deviation from this pattern.

For both husbands and wives the differences in ages at which sons and daughters are useful are large: 3.1 years for husbands and 1.6 for wives. These differences clearly reflect perceptions that girls mature at earlier ages, but may also reflect the tendency to indulge daughters to a lesser degree or to send them to school for shorter periods.

A second highly general observation which shows only a few minor deviations is that women perceive sons and daughters to be useful at earlier ages than men. Women perceive sons to be useful at 2.2 years earlier than men while for daughters the difference is much less: 0.7. This may well reflect the fact that children can be of use to the wife in the household at much earlier ages than in economic activity for the household's farm, business or employment. The smaller differences between husbands and wives in reporting the age of the usefulness of daughters may reflect that to men and women in Egypt the usefulness of daughters is perceived to be within the home, not in economic work.

Table 5.1 The age at which children are useful by individual background variables

	Urban		Rural		Total	
	Sons	Daughters	Sons	Daughters	Sons	Daughters
A Education						
Wife						
Illiterate, no school	11.5	10.2	11.3	9.3	11.4	9.5
Illiterate, some school	11.9	10.4	10.8	9.5	11.2	9.9
Read and write	11.0	10.5	12.2	9.8	11.5	10.2
Primary	11.8	11.2	9.8	8.6	11.3	10.5
Secondary/university	12.3	11.3	10.2	9.3	11.9	11.0
Total	11.7	10.5	11.2	9.3	11.4	9.8
Husband						
Illiterate, no school	13.9	10.5	12.8	10.2	13.1	10.2
Illiterate, some school	15.2	10.9	12.9	10.0	13.8	10.2
Read and write	14.1	10.4	13.1	10.2	13.5	10.3
Primary	14.5	10.5	13.5	10.3	14.1	10.4
Secondary/university	15.1	11.7	13.7	10.6	14.7	11.5
Total	14.4	10.8	13.0	10.2	13.6	10.5
B Wife's work pattern						
Wife's response						
Never worked	11.6	10.5	11.2	9.3	11.4	9.8
Before only	11.1	10.2	10.4	9.1	10.7	9.4
Since marriage	12.0	11.0	11.3	9.4	11.6	10.0
Husband's response						
Never worked	14.4	10.8	13.2	10.3	13.7	10.5
Before only	14.2	9.8	12.5	10.1	13.2	10.0
Since marriage	14.8	11.4	12.5	9.9	13.4	10.5
	Wives		Husbands			
C Husband's occupation	Sons	Daughters	Sons	Daughters		
Professional	11.8	10.8	15.0	11.5		
Clerical	12.5	10.6	14.7	11.8		
Sales	11.6	9.9	13.7	10.2		
Agriculture – self-employed	10.8	9.2	12.8	10.0		
Agriculture – employees	11.4	9.4	13.0	10.2		
Services	11.4	9.8	14.0	10.5		
Manual	11.5	10.1	13.7	10.4		
	Wives		Husbands			
D Residence	Sons	Daughters	Sons	Daughters		
Cairo and Alexandria	11.6	10.8	15.5	11.1		
Urban: Lower	11.3	10.1	10.9	9.0		
Upper	12.4	10.4	16.6	12.8		
Rural: Lower	10.9	9.1	11.3	9.4		
Upper	11.5	9.8	15.4	11.3		
All Egypt	11.4	9.8	13.6	10.5		

The third generalization which is fairly persistent across all groups is that children are perceived to be useful earlier in rural than urban areas. The differences between rural and urban areas for women and men for daughters was 0.8 and 0.4 years while for sons it was 0.5 and 1.4. As might be expected the largest differences are for sons as perceived by men. Husbands generally consider boys to be useful at age 13 in rural areas, and at age 14.5 in urban areas.

Other patterns are less pervasive. For urban and rural areas the more educated the father, the older the age at which he perceives boys and girls to be useful. The same general but a less uniform pattern is observed with respect to the education of wives.

Figures 5.1 and 5.2 show the relationship between parents' age and the age at which children are useful. While one might expect older individuals to have more old-fashioned views of the age at which children are useful, one does not perceive that age at which children are useful decreases with the respondent's age. If anything, older males appear to perceive children as being useful somewhat later, although the pattern is irregular.

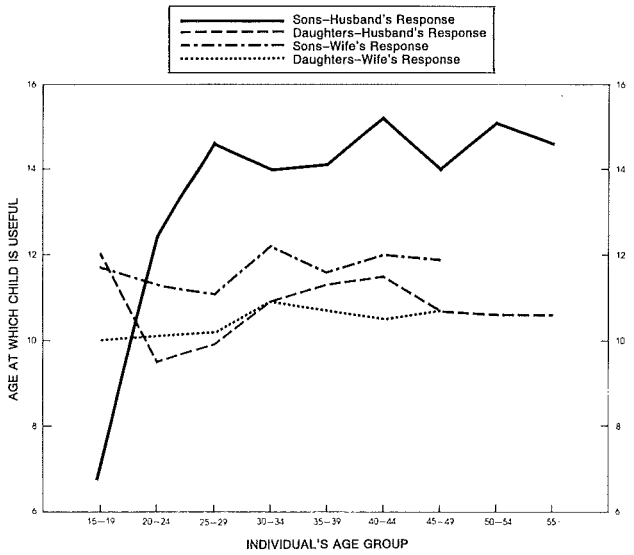

Figure 5.1 Age at which child is useful by individual's age group urban

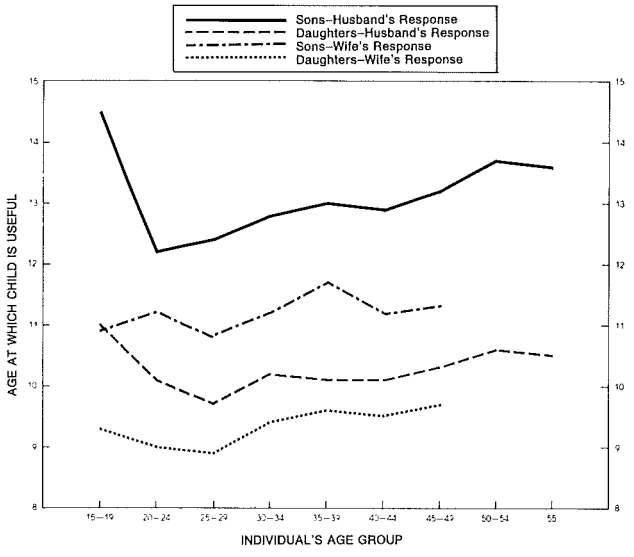

Figure 5.2 Age at which child is useful by individual's age group rural

The age at which children are perceived to be useful shows little systematic variation with the work pattern of wives. Husband's occupation shows only a few regularities. Couples in which the husband is self-employed in agriculture give the earliest age at which children (sons and daughters) are useful, but the occupation reporting the oldest age at which children are seen as useful varies by sex of the respondent and of the child. In some cases professionals and in other cases respondents in clerical occupations give the oldest age.

There are substantial regional differences in the ages at which children are useful. Husbands in urban Upper Egypt report the highest age at which children become useful. For wives the highest perceived age for sons was observed in urban Upper Egypt, and for daughters in metropolitan areas. The lowest ages for sons and daughters reported by wives are in rural Lower Egypt (where child labor participation is highest). For husbands the youngest ages are in urban Lower Egypt.

Economic differences in the age at which children are perceived to be useful are presented in table 5.2. For per capita income and per capita expenditures the age at which children are perceived to be useful tends to increase as income/expenditure increase, in urban areas, but even then the patterns are not completely uniform. In rural areas, consistent patterns do not emerge. The pattern for wife's work status is also inconsistent. When per capita income is adjusted for wife's education, one finds no uniform pattern for useful age in urban areas or for daughters in rural areas. In rural areas one finds that for husbands, the richer the household, the younger the age at which sons are perceived to be useful. The differences between highest and lowest income groups is substantial — 1.3 years.

For urban areas one finds that without pumped water or without electricity, husbands and wives perceive children to be useful at younger ages. In rural areas, however, there is no uniform pattern.

Thus, the short-term benefits of children as measured by the age at which children are useful show few systematic variations except by sex and, to a lesser degree, urban–rural residence as described above.

Table 5.2 The age at which children are useful by economic conditions

	Urban		Rural		Total	
	Sons	Daughters	Sons	Daughters	Sons	Daughters
A Per capita income						
Wife's response						
Lowest 20	11.3	9.7	11.3	9.4	11.3	9.5
21–40	11.8	10.5	11.4	9.6	11.5	9.9
41–60	11.2	10.2	11.2	9.2	11.2	9.6
61–80	12.0	10.7	11.0	9.1	11.5	9.9
81+	11.8	11.0	10.7	9.3	11.5	10.5
Husband's response						
Lowest 20	14.0	10.6	13.5	10.4	13.6	10.4
21–40	14.0	10.8	13.4	10.3	13.6	10.5
41–60	14.3	10.6	12.6	9.9	13.3	10.2
61–80	14.8	10.9	12.4	10.2	13.7	10.5
81+	14.7	11.1	12.4	10.4	14.1	10.9
B Per capita expenditures						
Wife's response						
Lowest 20	11.9	9.9	11.3	9.4	11.5	9.5
21–40	11.7	10.2	11.3	9.5	11.4	9.7
41–60	11.3	10.3	11.0	9.2	11.1	9.7
61–80	11.6	10.5	11.2	9.1	11.4	9.9
81+	11.9	11.1	10.8	9.6	11.7	10.8
Husband's response						
Lowest 20	13.6	10.2	13.2	10.2	13.3	10.2
20–40	14.1	10.8	13.3	10.3	13.5	10.5
40–60	14.6	10.9	12.6	9.9	13.4	10.3
60–80	14.1	10.6	13.0	10.4	13.6	10.5
81+	15.1	11.3	12.6	10.6	14.7	11.1
C Per capita income adjusted for wife's education						
Wife's response						
Lowest 20	11.5	10.1	11.1	9.5	11.6	10.1
21–40	12.0	10.9	11.2	9.7	11.8	10.5
41–60	11.4	10.6	14.0	9.2	11.4	10.1
61–80	12.1	11.0	10.9	9.1	11.7	10.3
81+	11.7	10.9	10.6	9.3	11.5	10.5
Husband's response						
Lowest 20	14.4	11.0	13.6	10.4	14.4	10.9
21–40	14.4	11.2	13.5	10.3	14.4	10.9
41–60	14.9	11.0	12.7	9.9	14.1	10.6
61–80	15.1	11.2	12.4	10.0	14.2	10.9
81+	14.5	11.0	12.3	10.3	14.0	10.8
D Wife's employment status						
Wife's response						
Family/Self	12.7	11.0	11.4	9.3	11.6	9.6
Other	11.8	11.0	11.1	9.5	11.6	10.4
Not working	11.6	10.4	11.2	9.3	11.4	9.8
Husband's response						
Family/Self	13.6	10.7	12.9	10.1	13.0	10.2
Other	15.1	11.5	11.3	9.3	13.8	10.8
Not working	14.4	10.7	13.1	12.3	13.7	10.5
E Water facilities						
Wife's response						
Piped inside	11.9	10.8	10.5	9.4	11.6	10.6
Piped outside	11.5	10.1	11.0	9.3	11.2	9.5
Pump/Other	10.4	9.5	11.5	9.3	11.3	9.4
Husband's response						
Piped inside	14.6	11.1	12.5	10.4	14.3	11.0
Piped outside	14.2	10.4	12.4	10.1	13.0	10.2
Pump/other	13.5	9.9	13.8	10.4	13.7	10.3
F Usage of electricity						
Wife's response						
Yes	11.7	10.6	11.1	9.3	11.5	10.1
No	11.1	9.6	11.3	9.4	11.3	9.4
Husband's response						
Yes	14.5	10.9	12.9	10.2	13.9	10.6
No	13.7	10.5	13.1	10.3	13.2	10.3

5.2.2 Long-term benefits

The long-term benefits of children are best described in terms of sources of old age support. Two types of questions were asked about old age support: whether parents expect to live with their children in old age and what sources of financial support they expected in old age. These questions were not asked separately for male and female children, however, so there is a missing degree of information here.

Tables 5.3 and 5.4 summarize the variation in the long-term benefits of children by background, and socio-economic factors. The first observation is that sharp urban–rural differences exist with respect to the proportion of parents who expect to live with children when they are old. Education is inversely related to the proportion who expect to live with children and receive financial support from children when they are old. These differences are sharp for husband's and wife's education in urban and rural areas. The other major observation is the increasing dependence on pensions for old age support with increasing education. The dependence on

Table 5.3 Expectations for old-age support by background variables

	Proportion who expect to live with children		Proportion who expect financial support from					
			Income from business etc		Pension		Children	
	U	R	U	R	U	R	U	R
A Education								
Wife								
Illiterate, no school	31	71	13	40	58	40	53	62
Illiterate, some school	23	64	14	44	66	47	52	57
Read and write	13	42	13	65	74	54	48	55
Primary	7	46	22	38	84	54	31	42
Secondary/university	4	12	28	29	99	91	17	13
Total	20	66	16	42	70	44	44	59
Husband								
Illiterate, no school	45	55	29	44	60	48	67	66
Illiterate, some school	23	63	20	52	62	46	56	73
Read and write	22	46	24	49	80	56	44	59
Primary	23	39	25	54	84	73	36	49
Secondary/university	11	25	25	41	96	94	23	33
Total	25	50	26	46	80	55	43	61
B Wife's work pattern								
Wife's response								
Never worked	23	68	16	42	68	42	48	57
Before only	17	68	16	35	63	57	49	70
Since marriage	11	60	20	45	87	46	25	63
Husband's response								
Never worked	27	50	27	47	78	54	45	64
Before only	25	55	27	35	71	60	55	53
Since marriage	15	49	20	49	91	60	31	53
C Husband's occupation	W	H	W	H	W	H	W	H
Professional	17	15	31	31	96	96	29	21
Clerical	20	20	20	20	100	98	40	36
Sales	44	49	36	47	26	52	65	58
Agriculture, self-employed	55	74	46	78	25	23	63	69
Agriculture, employees	73	58	12	33	33	52	64	92
Services	40	31	14	25	79	81	54	50
Manual	29	32	14	22	66	78	48	46
D Residence								
Cairo and Alexandria	12	13	15	22	75	82	40	34
Urban: Lower	28	34	19	31	61	77	46	48
Upper	37	47	18	29	72	76	56	65
Rural: Lower	59	46	44	46	45	52	62	52
Upper	76	56	40	47	43	60	55	73
All Egypt	46	39	31	37	55	66	53	53

Table 5.4 Expectations for old-age support by economic conditions

	Proportion who expect to live with children		Proportion who expect financial support from					
			Income from business etc		Pension		Children	
	U	R	U	R	U	R	U	R
A Per capita income								
Wife's response								
Lowest 20	42	72	17	42	60	40	56	62
21–40	30	66	9	37	68	51	50	61
41–60	19	64	15	45	68	44	55	56
61–80	19	64	14	42	69	41	44	57
81+	8	52	24	51	80	49	28	54
Husband's response								
Lowest 20	46	55	22	47	68	54	62	60
21–40	34	53	19	39	78	55	52	71
41–60	26	48	23	48	80	56	48	59
61–80	20	46	26	46	80	57	48	61
81+	14	37	33	62	86	54	24	44
B Per capita expenditures								
Wife's responses								
Lowest 20	38	74	17	42	57	40	56	64
21–40	32	68	11	44	64	44	53	59
41–60	25	65	11	44	69	45	54	59
61–80	19	59	15	36	70	46	47	52
81+	7	35	23	45	81	57	28	41
Husband's response								
Lowest 20	52	57	21	48	66	54	68	61
21–40	34	53	21	43	77	52	53	70
41–60	23	45	25	46	79	55	50	63
61–80	23	44	26	42	79	64	45	54
81+	13	33	30	61	88	54	24	39
C Per capita income adjusted for wife's education								
Wife's response								
Lowest 20	33	47	21	33	78	64	43	40
21–40	21	41	14	29	86	75	38	39
41–60	12	40	19	35	83	67	45	34
61–80	14	44	18	34	81	62	35	38
81+	9	38	23	47	77	62	31	41
Husband's response								
Lowest 20	37	35	17	37	82	77	47	38
21–40	26	33	15	30	90	79	38	49
41–60	18	28	19	38	91	79	35	37
61–80	14	29	23	37	88	78	38	42
81+	16	25	24	57	83	79	27	30
D Wife's employment status								
Wife's response								
Family/self	27	64	27	56	58	44	50	68
Others	7	50	18	13	94	54	19	46
Not working	22	68	16	42	67	43	48	58
Husband's response								
Family/self	56	47	18	55	71	59	64	52
Others	6	53	21	30	95	64	23	57
Not working	27	50	27	45	78	54	46	63
E Water facilities								
Wife's response								
Piped inside	16	34	19	34	77	62	39	52
Piped outside	28	68	7	39	60	43	55	58
Pump/other	44	72	20	48	44	40	63	62

Table 5.4 (*cont*)

	Proportion who expect to live with children		Proportion who expect financial support from					
			Income from business etc		Pension		Children	
	U	R	U	R	U	R	U	R
Husband's response								
Piped inside	20	31	26	46	84	76	37	39
Piped outside	34	49	21	42	75	56	54	62
Pump/other	43	56	36	50	57	50	69	65
F Usage of electricity								
Wife's response								
Yes	17	54	17	43	74	54	42	56
No	57	76	9	42	42	36	67	62
Husband's response								
Yes	21	43	25	47	83	64	39	50
No	63	56	33	46	54	48	75	70

income from land and business is erratic; although generally higher in rural areas, it is not systematically related to education.

The regional pattern of dependence on children for a place to live as well as for financial support in old age is, as might be expected, increasing from Cairo/Alexandria to rural Upper Egypt. This pattern is especially strong for the percentage of parents expecting to live with children: about six times the proportion of wives and about four times the proportion of husbands in rural Upper Egypt than in Cairo and Alexandria expect to live with their children.

Wives who have worked since marriage are less likely to expect to live with their children or receive financial support from their children than other women, but this is not true of their husbands. Occupational patterns are as might be expected. Professional and clerical workers are the least likely to expect to rely on their children in old age and agricultural workers and self-employed are the most likely.

Per capita income and expenditures have strong associations with the proportion who expect to live with children for both men and women in urban and rural areas. The wealthier the household, the less likely are husband and wife to expect to live with their children, but these differentials across per capita income or expenditure quintiles are not as sharp as across education categories.

Financial support is less closely associated with per capita income than with per capita expenditure. For per capita income, increasing dependence on pension with rising income only exists in urban areas, while for per capita expenditure it exists in urban and rural areas. Decreasing financial dependence on children is also more uniform for per capita expenditure than for per capita income group.

The association of per capita income with expectations for old age support changes when the relationship is adjusted for wife's education. While income continues to be inversely related with the expectation to live with children, the differences across income groups becomes much smaller, especially in rural areas. Reliance on pension ceases to be associated with income per capita once education is controlled. Reliance on financial support from children also is less closely related to income when adjustments are made for education.

The employment status of the wife shows that those who work for others, rather than those not working or working for themselves or the family, are more likely to depend on pensions and less likely to depend on children either for financial support or for a place to live. But this pattern only shows up for the husbands of those women who live in urban areas.

Finally, those without electricity or pumped water in both urban and rural areas are more likely to depend on children in old age for both a place to live and financial assistance.

In reviewing the evidence on the perceived economic benefits of children, it is clear that the long-term benefits from children in terms of old age support show much stronger variations across groups and are more closely related to economic as well as background variables than are the short-term benefits measured by the age at which children are useful. This suggests that long-term benefits

and old age security might be more important in explaining differences in desired family size than short-term benefits. This possibility will be examined later.

5.3 EDUCATIONAL ASPIRATIONS AND EXPENDITURES

Educational costs are the one most frequently cited reason for wanting small families in Egypt as in many other countries and educational attainment of parents, particularly women, is one of the most frequently cited factors determining fertility. Therefore, the educational aspirations that parents have for their children may affect the fertility of the present generation of parents as well as that of the next generation. The data in the Egyptian Fertility Survey provides a rich source of information on the attitudes of husbands and wives towards the education of their sons and daughters and the expenditures of parents on schooling.

5.3.1 Education aspirations

Several very general conclusions emerge and will be discussed before discussing differentials across economic and background variables (see table 5.5).

1 Parents were asked whether they wanted their son or daughter to get no schooling, a primary certificate, secondary certificate or university training. Not surprisingly the answers were concentrated at university level. Over 50 per cent of husbands and wives wanted university education for sons in urban and rural areas and for daughters in urban areas. In rural areas, 49 per cent of mothers and only 42 per cent of fathers wanted university education for daughters. What is surprising, however, was the fact that a larger proportion of parents responded that they wanted no school for their children than the proportion that wanted primary school. Therefore, instead of a continuum of preferences for education one finds polarity: at one extreme those who want no schooling, which is admittedly a minority overall but not in every group, and a majority who want secondary schooling or above. Thus, primary school is not seen as a desirable level of schooling in itself. This might reflect the low economic returns to primary school that was shown in chapter 3.

2 Not surprisingly, as suggested above, less education for sons and daughters is desired in rural areas than in urban areas by husbands and wives. The percentage of husbands and wives wanting university education for sons or daughters is highest in urban areas where the percentage wanting no school is lowest. For example, in urban areas 79 per cent of mothers and 72 per cent of fathers want their daughters to finish college — in rural areas the corresponding figures are 49 per cent and 42 per cent respectively.

3 Again, not surprisingly, more schooling is desired for sons than daughters. In urban areas 85 per cent of the husbands want their sons to go to college and only 72 per cent want the same education for daughters. For mothers the figures are 88 per cent versus 79 per cent. In rural areas the differences are sharper — 67 per cent of fathers want their sons to go to college and only 42 per cent their daughters. For mothers the corresponding figures are 71 per cent versus 49 per cent.

4 A somewhat weaker relationship, which is, however, more surprising, is that mothers want more schooling for their children — sons and daughters — than fathers. There are between 3 per cent and 7 per cent more wives than husbands who want university education for their sons or daughters in both urban and rural areas.

Given these generalizations one can discuss the variations across background variables which conform to these overall patterns as shown in table 5.5. Not surprisingly, the more educated the parent, the higher the level of education desired for their children. Parents generally want at least as much schooling as they have had themselves. However, even among literates, particularly literate husbands, there are those who want no schooling for their offspring. But this is a significant phenomenum only for daughters in rural areas.

Wives' work pattern has a consistent effect in that those who have worked since marriage and their husbands are more likely than others to want college education for sons and daughters in urban and rural areas. Husbands' occupation has predictable patterns with highest aspirations among professionals and lowest among agricultural workers.

Regional patterns are also as might be expected. Cairo/Alexandria and urban Lower Egypt are quite similar with the highest aspirations. Urban Upper Egypt and Rural Lower Egypt are almost identical with somewhat lower aspirations. Rural Upper Egypt is quite exceptional with much higher proportions of parents, fathers and mothers, wanting no school for their daughters (and to a lesser extent for their sons) and a much lower proportion wanting university education especially for daughters. Fifty-one per cent of husbands in rural Upper Egypt want no schooling for their daughters and only 22 per cent want college education compared with 5 per cent and 78 per cent respectively for husbands in Cairo/Alexandria.

Table 5.5 Per cent wanting various levels of education for sons and daughters by background variables

	Urban				Rural			
	None	Prim.	Second.	Univ.	None	Prim.	Second.	Univ.
A Education								
Wife	Sons							
Illiterate, no school	[4]	[2]	15	80	9	[3]	21	67
Illiterate, some school	[1]	[1]	[10]	89	[4]	[3]	15	79
Read and write	–	–	[5]	95	[2]	–	[16]	83
Primary	–	–	[2]	99	–	–	[4]	96
Secondary/university	–	–	[2]	99	–	–	[5]	96
Total	[2]	[1]	9	88	7	3	19	71
	Daughters							
Illiterate, no school	[7]	[5]	21	67	29	4	26	42
Illiterate, some school	[1]	[1]	23	75	15	[4]	23	59
Read and write	[1]	–	[8]	91	[13]	[2]	[26]	59
Primary	–	[2]	[9]	90	–	–	[4]	96
Secondary/university	–	–	[2]	99	–	–	[11]	92
Total	3	3	15	79	24	4	24	49
Husband	Sons							
Illiterate, no school	[7]	[1]	22	70	11	3	30	56
Illiterate, some school	–	[2]	[22]	76	[4]	[1]	[22]	74
Read and write	[1]	–	15	84	[2]	[2]	21	76
Primary	[2]	–	6	92	[3]	–	[14]	84
Secondary/university	–	–	[2]	98	–	–	[4]	97
Total	[3]	[0]	12	85	7	2	24	67
	Daughters							
Illiterate, no school	21	[7]	25	46	47	5	20	28
Illiterate, some school	[6]	[2]	[32]	61	36	[4]	[18]	42
Read and write	[6]	[3]	20	71	18	[6]	23	53
Primary	[4]	[4]	[13]	79	[15]	[5]	[21]	59
Secondary/university	–	[2]	[8]	93	[3]	[5]	[9]	88
Total	8	4	17	72	33	5	20	42
B Wife's work pattern								
Wife's response	Sons							
Never worked	[2]	[1]	10	88	9	3	21	67
Before only	[6]	[2]	12	80	–	[1]	[18]	81
Since marriage	–	–	[7]	93	[3]	[2]	11	84
	Daughters							
Never worked	4	3	16	78	25	4	24	47
Before only	6	4	[22]	69	[21]	[3]	26	51
Since marriage	[2]	[2]	[11]	86	21	[2]	23	54
Husband's response	Sons							
Never worked	[2]	[0]	13	85	7	[2]	25	66
Before only	[2]	–	25	74	[5]	[1]	29	65
Since marriage	[3]	[1]	[4]	92	[8]	[3]	16	73
	Daughters							
Never worked	9	4	18	70	35	5	19	41
Before only	[6]	6	25	64	32	[1]	29	37
Since marriage	[4]	[3]	11	83	29	[6]	19	45

Table continues

Table 5.5 (*cont*)

	Urban				Rural			
	None	Prim.	Second.	Univ.	None	Prim.	Second.	Univ.
C Husband's occupation								
Wife's response	Sons							
Professional	–	–	[4]	96	–	–	[6]	94
Clerical	[4]	–	[10]	86	[5]	[1]	[17]	77
Sales	[6]	[2]	[11]	81	[12]	[3]	22	64
Agriculture – self-employed	6	[2]	17	75	23	[4]	20	52
Agriculture – employees	11	[5]	24	60	34	[4]	27	35
Services	[3]	[4]	14	79	11	[6]	24	58
Manual	[1]	[1]	14	86	7	[2]	21	70
Husband's response	Daughters							
Professional	–	–	[3]	97	[2]	[1]	[4]	93
Clerical	[2]	–	[5]	93	[3]	[4]	[12]	81
Sales	[6]	–	[14]	80	26	[6]	18	50
Agriculture – self-employed	6	[2]	25	66	33	[4]	22	41
Agriculture – employees	10	[3]	35	52	48	[6]	20	26
Services	[3]	[1]	17	79	15	[8]	20	57
Manual	4	[1]	15	80	13	[4]	22	62
	Sons				Daughters			
	None	Prim.	Second.	Univ.	None	Prim.	Second.	Univ.
D Residence								
Wife								
Cairo and Alexandria	[0]	[1]	9	90	[2]	[4]	13	82
Urban: Lower	[3]	[0]	8	89	[4]	[1]	14	81
Upper	[3]	[1]	14	82	[8]	[1]	25	66
Rural: Lower	[2]	[1]	15	82	9	[2]	24	65
Upper	14	5	24	56	45	5	25	25
All Egypt	5	2	15	79	15	3	20	62
Husband								
Cairo and Alexandria	[1]	[0]	9	89	5	4	14	78
Urban: Lower	[3]	[0]	14	82	[7]	[5]	17	71
Upper	[3]	–	20	77	17	[3]	27	53
Rural: Lower	6	[2]	19	74	21	4	20	56
Upper	8	[3]	31	57	51	7	19	22
All Egypt	5	1	19	75	33	5	18	55

NOTE: Brackets denote sample size <20.

These differentials reflect substantial differences in attitudes across regions which probably explain differences not only in fertility but also in school participation.

Household economic circumstances could well be expected to affect educational aspirations for children. Higher income groups can certainly better afford the loss of the time of children working in the home or in economic activity as well as the costs of tuition and the associated costs of education. The actual costs will be discussed later.

Parental aspirations for university education for their sons and daughters in urban and rural areas are positively related to income per capita and expenditure per capita quintiles, as shown in table 5.6. In urban areas the relationship is uniform and the higher the income or expenditure per capita quintile, the higher the proportion wanting university education for sons and daughters. The only deviation from the pattern is for urban women in the 21–40 per cent expenditure per capita group who have slightly lower educational aspirations for sons and daughters than women in the lowest quintile.

In rural areas, aspirations for university education do not increase with per capita income or expenditure group until the middle group is reached. Only at or above the 41–60 per cent group does the proportion wanting university education for their sons or daughters increase uniformly.

The aspirations for university education increase more sharply for daughters than for sons and more in urban

Table 5.6 Per cent wanting various levels of education for sons and daughters

	Sons				Daughters			
	Urban		Rural		Urban		Rural	
	Primary or less	Univ.	Primary or less	Univ.	Primary or less	Univ.	Primary or less	Univ.
A Per capita income								
Wife's response								
Lowest 20	[5]	76	10	71	[9]	61	32	43
21–40	[4]	81	10	70	[9]	67	31	44
41–60	[3]	86	9	69	[7]	76	21	51
61–80	[2]	91	10	76	[5]	83	25	59
81+	[1]	98	[8]	76	[3]	94	22	58
Husband's response								
Lowest 20	[3]	72	11	65	[19]	50	43	37
21–40	[5]	79	11	66	18	64	39	37
41–60	[3]	83	[7]	65	14	68	36	44
61–80	[2]	88	[6]	73	7	74	39	49
81+	[1]	94	[8]	75	5	87	25	55
B Per capita expenditures								
Wife's response								
Lowest 20	[6]	82	10	71	[11]	64	31	44
21–40	[7]	70	11	70	[10]	58	26	49
41–60	[2]	86	8	70	[6]	74	26	47
61–80	[1]	92	[11]	74	[6]	84	26	52
81+	[0]	98	[5]	82	[2]	93	[14]	75
Husband's response								
Lowest 20	[6]	71	10	67	24	47	43	36
21–40	[4]	75	10	64	[17]	63	41	41
41–60	[3]	82	9	63	14	65	39	38
61–80	[2]	88	[6]	74	[9]	72	33	53
81+	[0]	95	[4]	84	[5]	90	[18]	65
Per capita income adjusted for wife's education								
Wife's response								
Lowest 20	[3]	83	[4]	86	[4]	71	15	69
21–40	[2]	87	[2]	87	[4]	76	13	70
41–60	[2]	90	[2]	84	[3]	84	[4]	76
61–80	[1]	95	[4]	89	[2]	89	11	80
81+	[0]	98	[3]	85	[3]	93	11	74
Husband's response								
Lowest 20	[0]	82	[6]	83	11	65	24	66
21–40	[3]	87	[7]	84	11	78	19	67
41–60	[1]	91	[2]	82	[8]	80	16	72
61–80	[1]	94	[2]	88	[2]	84	23	73
81+	[1]	93	[5]	86	[6]	85	13	73

NOTE: Brackets denote sample size <20.

than rural areas and except for fathers of rural girls more strongly for husbands' educational aspirations than for wives'. This is illustrated in table 5.7.

The relationship between per capita income and aspirations for colleges for sons and daughters in urban areas persists even after adjustments are made for wife's education. In rural areas, the relationship becomes weak or non-existent.

The proportion wanting primary school or less for their children is fairly small in urban areas and therefore patterns observed there have little validity. In rural areas one does observe a decrease in the proportion with low aspirations as income per capita increases. For sons the low proportions contribute to irregular patterns, but for daughters the decrease in low aspirations with increasing income is observable, but it is not completely uniform. Adjustment for wife's education weakens the relationship further. Thus, low aspirations for schooling are less associated with income and probably more strongly associated with other factors such as modern outlook than aspirations for higher education.

Table 5.7 Increases in proportion wanting university across economic groups

	Sons		Daughters	
	Urban	Rural	Urban	Rural
Per capita income				
Wife's response	20	5	33	14
Husband's response	23	10	37	18
Per capita expenditure				
Wife's response	15	12	30	30
Husband's response	24	17	40	28
Per capita income adjusted for wife's education				
Wife's response	15	−1	22	5
Husband's response	11	3	20	7

5.3.2 Educational expenditure

Questions on desired education for children are not, of course, realistic predictions of the level of education that children will achieve but they are indicative of what people would want if they could afford it; eg if schooling were sufficiently available at the relevant levels; if parents could afford the work time lost by children in school, school fees and incidental costs; and if the children were able enough to achieve the desired levels.

While education is in principle freely available in Egypt, there are costs associated with participation in school. Data collected for the households in the second-round survey indicate that on average parents of children in school pay slightly over 20 LE a year per child for schooling — including tuition and other costs.

Table 5.8 shows how these costs differ by urban and rural area and for boys and girls. Tuition costs are lower in rural than urban areas and slightly lower for boys. This is probably due to a greater reliance on private schools in urban areas and for girls, but there are no separate data available on whether enrolment was in private or in public school.

The non-tuition costs are higher than tuition costs except for urban children 5–9. These non-tuition costs rise rapidly after the age of 9 and are somewhat higher for boys than for girls and slightly higher in urban areas than in rural areas.

While no specific questions were asked on whether education was private or public, it is possible to estimate this roughly by splitting the sample into those children for which tuition costs were 5 LE or less and others. Fifteen per cent of urban boys and 18 per cent of urban girls were in high-cost schools. In rural areas the proportions were much lower, 7 and 3 per cent respectively. For children in high-tuition schools (private), the educational costs per child were approximately 60 LE a year compared with 15 LE a year for those in low-tuition schools.

These data on expenditures indicate that educational costs are non-trivial even though Egypt is committed to educational equity. Although these data cannot capture the entire importance of education and its costs in the decisions of parents on how many children to have, it is suggestive of the high burden of educational cost — especially for those who choose private school for their children.

5.4 THE RELATIONSHIP BETWEEN EDUCATIONAL ASPIRATIONS FOR CHILDREN AND PERCEIVED BENEFITS OF CHILDREN AND FAMILY SIZE PREFERENCES

The educational aspirations that parents have for their children reflect to some degree the traditionalism or modernism of their outlook. They may also reflect their ability to afford schooling for their children. As shown above, there was a strong relationship both between parents' education (and thus presumed modernism); per capita income and expenditures (and thus ability to afford) and educational aspirations for children. Both outlook (modern or traditional) and economic circumstances can affect both the aspirations for children and the number of children a couple wants.

More modern couples of any income level would want more education for their children and smaller families. Thus, one would expect desires for small families to be associated with high educational aspirations for children because couples could only afford higher education for small numbers of children. For whatever reason or combination of reasons, one does observe a relationship between educational aspirations and desired family size of husbands and wives. Table 5.9 shows, however, that this relationship is uniform only with respect to parents' aspirations for the education of their daughters. Desired education of sons is not uniformly related either to desired number of children or desired number of sons.

The perceived benefits of children may also be related to the family size preferences of parents. As stated above, the age at which parents perceive sons and daughters to be useful does not show strong patterns and it was suggested that these short-term benefits of child labor may be fairly unimportant in determining family size preferences. This does turn out to be the case. Comparisons of individuals' desired family size and the age at which parents believe sons and daughters became useful show no correlation whatsoever. (Data not shown.)

Table 5.8 Annual expenditures on education for those enrolled in school by age, sex and residence (LE)

	All children in school					
	Urban		Rural		Total	
	Tuition	Other	Tuition	Other	Tuition	Other
Girls						
5–9	8	8	1	5	5	6
10–14	6	16	2	12	4	15
14+	9	30	5	28	8	30
Total	7	18	2	12	5	16
(N)	(781)		(462)		(1243)	
Boys						
5–9	6	6	1	5	3	5
10–14	4	13	2	12	3	13
14+	9	36	7	28	8	32
Total	6	19	3	14	4	16
(N)	(871)		(1034)		(1905)	
	Children in schools with tuition less than or equal to 5 LE					
Girls						
5–9	1	5	1	5	1	5
10–14	2	14	2	11	2	13
14+	4	27	3	28	3	28
Total	2	16	2	11	2	13
(N)	(640)		(448)		(1088)	
Boys						
5–9	1	5	1	5	1	5
10–14	2	13	2	12	2	12
14+	4	30	3	23	3	26
Total	2	15	2	12	2	13
(N)	(737)		(958)		(1695)	
	Children in schools with tuition more than 5 LE					
Girls						
5–9	46	20	—	—	46	20
10–14	39	36	[17]	[47]	37	37
14+	21	36	[13]	[27]	20	35
Total	31	32	14	31	29	32
(N)	(141)		(14)		(155)	
Boys						
5–9	46	12	[8]	[0]	43	11
10–14	32	22	[9]	[24]	24	23
14+	21	52	19	46	20	49
Total	27	40	17	41	24	40
(N)	(134)		(76)		(210)	

NOTE: Brackets denote sample size <20.

The perceived long-term benefits of parents in terms of whether they expect to live with children or expect financial support from children are related to family size preferences. Wives who expect to live with their children want 1.6 more children than those who do not. For husbands the difference is smaller, but substantial at 0.8 of a child. The differences are larger in rural areas and in urban areas for women than for men. There are also substantial differences in the desired number of sons depending on expectations about living with children in old age. And in fact the differences by expectations are almost as large for desired number of sons as for desired number of children. For urban women, they are even larger. Expectations of financial support from children are associated with larger desired family size and desired number of sons except among rural women. Thus, the data indicate that educational aspirations, especially for daughters, are associated with family size preferences, as are long-term, but not short-term perceived benefits of children.

Table 5.9 Family size preferences and aspirations for and benefits from children

	Urban		Rural		Total	
	Wife	Husband	Wife	Husband	Wife	Husband
	Mean desired family size					
Desired education of daughters						
None	5.2	4.8	6.5	5.3	6.4	5.2
Primary	4.3	4.9	5.3	4.5	5.0	4.6
Secondary	3.9	4.2	5.3	4.7	4.9	4.5
University	3.2	3.4	4.3	4.1	3.7	3.7
Desired education of sons						
None	[4.8]	4.9	7.4	5.7	7.0	5.5
Primary	[6.6]	3.5	5.3	4.4	5.5	4.3
Secondary	4.2	4.1	5.7	4.8	5.3	4.6
University	3.2	3.6	4.7	4.5	4.0	4.1
	Mean desired number of sons					
Desired education of daughters						
None	3.5	3.5	4.1	[2.7]	4.1	3.3
Primary	3.1	2.8	3.6	[1.5]	3.5	2.7
Secondary	2.5	3.1	3.0	2.5	2.8	2.9
University	1.8	2.8	2.5	2.1	2.1	2.4
Desired education of sons						
None	[2.8]	[2.7]	4.4	3.5	4.2	3.3
Primary	[4.7]	[1.5]	4.1	2.8	4.2	2.7
Secondary	2.7	2.5	3.4	3.1	3.2	2.9
University	1.9	2.1	2.7	2.9	2.6	2.4
	Mean desired family size					
Expect to live with children						
Yes	4.1	4.3	5.4	4.9	5.2	4.7
No	3.2	3.5	4.3	4.4	3.6	3.9
	Mean desired number of sons					
Expect to live with children						
Yes	2.6	2.5	3.3	3.1	3.2	2.9
No	1.9	2.0	2.4	2.7	2.1	2.4
	Mean desired family size					
Expect financial support						
Yes	3.6	4.0	5.1	4.7	4.6	4.5
No	3.1	3.3	5.1	4.3	4.1	3.8
	Mean desired number of sons					
Expect financial support						
Yes	2.2	2.4	3.0	3.0	2.7	2.8
No	1.9	1.9	3.1	2.7	2.5	2.3

NOTE: Brackets denote sample size <20.

5.5 DESIRED FAMILY SIZE

The perceived short and long-term benefits and aspirations for children are of interest in themselves and because they may well explain differences in the family sizes desired by husbands and wives, which in turn may well affect fertility behavior.

The desired family size expressed by individuals is often believed to be a poor indicator of fertility preferences for several reasons. First, it is felt that people will tend to rationalize their actual behavior and therefore they will not report family sizes smaller than what they actually have. Secondly, many people are believed to find the concept of desired family size either difficult to grasp or irrelevant and therefore give answers such as 'up to God' or refuse to respond. Thirdly, people are believed to have strong preferences for male children, thus number of sons, not number of children, is believed to be relevant. Fourth, it is believed that fertility preferences are not predictive of behavior. This point will be explored in the next chapter.

The first point can be addressed by looking at the relationship between desired family size and number of

Table 5.10 Average number of children desired by husbands and wives by number of living children

	Urban		Rural		Total	
Number of living children	Wife	Husband	Wife	Husband	Wife	Husband
0	2.8	2.8	4.5	4.1	3.8	3.6
1	2.8	2.8	4.5	4.0	3.8	3.5
2	2.7	2.9	4.8	4.1	3.9	3.6
3	3.3	3.5	4.7	4.1	4.0	3.8
4	3.4	3.8	5.3	4.8	4.4	4.3
5	3.6	4.1	5.1	4.8	4.6	4.6
6	3.9	5.0	5.5	5.3	4.8	5.1
7	4.3	4.7	6.0	5.8	5.2	5.3
8	[5.6]	[6.2]	6.2	6.6	6.0	6.5
9+	[5.4]	[6.4]	6.8	6.4	6.3	6.4
Total	3.3	3.6	5.0	4.6	4.3	4.2

NOTE: Brackets denote sample size <20.

living children in table 5.10. For men and women in urban and rural areas, desired family size increases with actual number of living children. While this may reflect some degree of *ex post facto* rationalization, this is clearly true only to a limited degree since one finds that after three children in urban areas and four for males in rural areas and five for females in rural areas, desired family size is less than achieved size and the amount of reported excess fertility exceeds one child in many cases. This gives some justification for examining the determinants of desired family size carefully and not dismissing them as rationalizations. As to the second objection, in the second round of the Egyptian Fertility Survey, individuals did not have problems giving numerical responses. Overall, 98 per cent of the women and 96 per cent of the men gave numerical answers. The issue of son preference will be directly examined in this chapter.

5.5.1 General observations

Before examining the economic and background differentials in desired family size, it is useful to make several generalizations about desired family size from table 5.10. First, urban desired family size is less than that in rural areas. The difference is one child for men and 1.7 for women. Second, overall Egyptian men and women want about the same desired family size, 4.2 and 4.3 respectively. This does not hold true for urban and rural areas treated separately. In urban areas men want 0.3 more children than women, but in rural areas women want 0.4 more children than men. These sex differences are uniform when current number of living children is controlled. In urban areas, men and women want nearly the same number of children until parity 3; then men desire more than women at every higher parity. In rural areas women want more children than men at every parity except 8.

Another way of looking at family size preferences is not to look at overall averages, but at specific preferences of husbands compared with the preferences of their wives (and vice versa). In urban areas husbands and wives agree on desired family size in 36 per cent of the cases. In rural areas couples agree in only 23 per cent of the cases and wives want more children than their husbands in 40 per cent of the cases as compared with 27 per cent in urban areas. The percentage of husbands wanting more children than their wives is almost identical in urban and rural areas at 37 per cent. Thus, the lower consensus in rural areas arises because women want more children than husbands in many cases.

5.5.2 Differentials in desired family size

Figure 5.3 shows the differences in desired family size by age. In general the older the individual, the larger the desired family size. Table 5.11 summarizes the differences

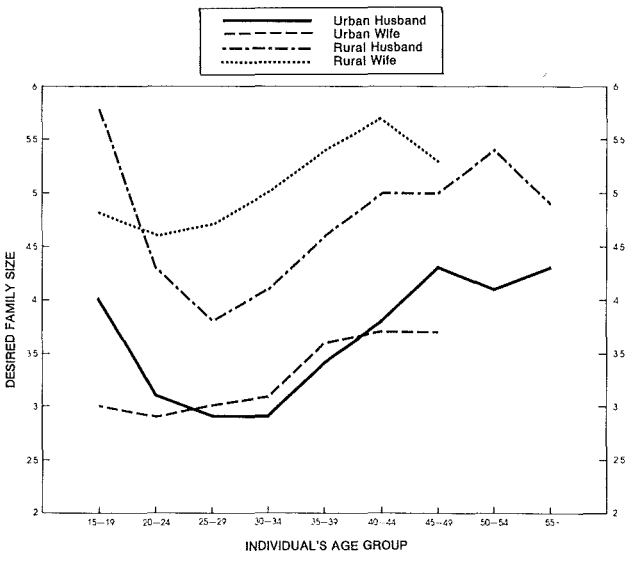

Figure 5.3 Desired family size by individual's age group

Table 5.11 Desired family size by background variables

	Urban		Rural		Total	
	Wife	Husband	Wife	Husband	Wife	Husband
A Education						
Illiterate, no school	3.7	4.4	5.3	5.0	4.8	4.8
Illiterate, some school	3.4	3.5	4.6	4.1	4.1	3.9
Read and write	3.2	3.6	4.5	4.4	3.7	4.1
Primary	2.8	3.5	3.2	4.0	2.9	3.7
Secondary/university	2.6	3.1	2.7	3.4	2.6	3.2
Total	3.3	3.6	5.0	4.6	4.3	4.2
B Wife's work pattern						
Never worked	3.4	3.8	5.3	4.6	4.5	4.2
Before only	3.3	3.2	4.2	4.5	3.9	4.0
Since marriage	3.0	3.1	4.1	4.6	3.6	4.0
C Husband's occupation						
Professional					3.2	3.3
Clerical					3.3	3.1
Sales					4.0	4.2
Agriculture – self-employed					5.3	4.8
Agriculture – employees					5.2	4.8
Services					4.2	4.3
Manual					3.7	3.9

	Desired number		Children ever born	Children surviving
D Residence	Wife	Husband		
Cairo and Alexandria	3.1	3.6	4.1	3.3
Urban: Lower	3.3	3.4	4.0	3.3
Upper	4.0	4.1	4.6	3.5
Rural: Lower	4.0	4.3	4.5	3.5
Upper	6.4	5.0	4.5	3.1
All Egypt	4.3	4.2	4.3	3.3

in desired family size by background variables. As expected desired family size decreases with education for men and women in urban and rural areas. In urban areas those men and women who are illiterate without schooling want more than one child more than those with secondary education and above. In rural areas the differences are greater especially for women, and women with secondary or higher education want about 2.6 children less than the unschooled illiterates. For husbands in rural areas the difference is only about 1.6 children, about the same differences as in urban areas. In rural areas, the desired number of children by wives is much lower for women who have had any schooling, even if it didn't convey literacy than it is for illiterate women who never attended school. Completion of primary school also seems to have a major impact. Achievement of literacy *per se* has little effect. Urban–rural differences in the desired family size become much smaller after primary school and converge at secondary and university levels.

With respect to actual fertility, one observed in chapter 4 an initial increase in fertility with education in rural areas, then a decrease with both husband's and wives' education. For desired fertility, however, the relationship is uniformly inverse.

Wife's work pattern shows that women who have worked since marriage want the smallest families, but their responses are fairly close to those couples where the wife worked before marriage in rural areas. In urban areas husbands whose wives have never worked have the largest desired family size. In rural areas the wife's work pattern has no uniform relation to family size desires.

The patterns of desired fertility by husband's occupation are unsurprising. Desired family sizes are lowest for couples in which the husband has a clerical or professional occupation, and highest for those in agriculture.

The regional differences in desired family size follow a pattern as one would expect except that husbands in urban Lower Egypt want fewer children than those in Cairo and Alexandria. When one observes the regional breakdown, it becomes clear that the tendency for rural women to want more children than their husbands is a reflection of the fact that women in rural Upper Egypt want 1.4 more children than their husbands while in rural lower Egypt husbands want 0.3 more children than their wives. It is also useful to compare average desired family size by region with children ever born and

children surviving. In all regions except rural Upper Egypt, the average desired family size is less than average children ever born. If one examines the number of living children, however, one finds that only for women in metropolitan areas does the number of surviving children equal or exceed the desired number on average. The deficit of children is about a half a child in rural Lower and urban Upper Egypt and two children for husbands and three children for wives in rural Upper Egypt. Clearly the force of mortality is a significant factor in determining the desire to cease childbearing. The implication of this for the desire to cease childbearing will be discussed in a later section of this chapter.

The relationship between desired family size and per capita income or per capita expenditures is strongly inverse for husbands and wives in urban and rural areas. (See table 5.12.) This inverse pattern was observed for actual fertility as well, but in that case the causal interpretation was unclear since large numbers of births would reduce per capita income as well as the possible converse causation in which income per capita affects fertility. This problem is much less likely to arise with respect to fertility desires (it exists only to the extent that fertility desires are rationalizations). It should be noted that differences in actual fertility across income and expenditure per capita groups are greater than differences in desired fertility. This may reflect (1) the fact that lower income groups are less able to avoid unwanted fertility or (2) that per capita income and expenditure are affected by fertility, which they affect in turn. The first possibility will be explored later in this chapter. After adjusting for wives' education, the relationship between desired number of children and per capita income continues to be uniformly inverse except for rural women. The relationship is weaker, however, after adjustment.

Household amenities were related to actual fertility and are also shown to be related to desired fertility. As with actual fertility those with water piped into the house have the lowest desired fertility. Those with piped water outside have second lowest for both desired and actual. While those with other water sources had the highest actual fertility, this pattern is not uniform across urban and rural areas with respect to desired fertility. House-

Table 5.12 Desired family size by economic conditions

	Urban		Rural		Total	
	Wife	Husband	Wife	Husband	Wife	Husband
A Per capita income						
Lowest 20	4.3	4.3	5.3	4.8	5.1	4.7
21–40	3.5	4.0	5.1	4.8	4.6	4.5
41–60	3.4	3.9	4.9	4.5	4.3	4.3
61–80	3.2	3.6	4.8	4.3	4.0	4.0
81+	2.9	3.1	4.7	4.0	3.3	3.3
B Per capita expenditures						
Lowest 20	4.2	4.3	5.3	4.9	5.1	4.7
21–40	3.7	4.1	5.0	4.8	4.6	4.6
41–60	3.5	3.9	5.1	4.5	4.5	4.3
61–80	3.2	3.7	4.6	4.2	3.8	4.0
81+	2.8	3.0	4.1	3.7	3.1	3.1
C Per capita income adjusted for wife's education						
Lowest 20	3.9	3.9	4.1	4.1	4.2	4.1
21–40	3.2	3.6	3.8	4.1	3.6	3.9
41–60	3.1	3.6	3.7	3.7	3.5	3.7
61–80	2.9	3.4	3.7	3.7	3.3	3.5
81+	2.9	3.2	3.8	3.6	3.2	3.3
D Wife's employment status						
Family and self	3.4	3.7	4.2	4.6	4.1	4.5
Others	2.7	2.9	3.9	4.6	3.1	3.5
Not working	3.4	3.7	5.2	4.6	4.4	4.2
E Water facilities						
Piped inside	3.1	3.6	3.9	4.2	3.2	3.7
Piped outside	3.5	3.6	5.0	4.5	4.5	4.2
Pump/other	4.9	4.6	5.2	4.8	5.2	4.8
F Usage of electricity						
Yes	3.2	3.5	4.3	4.3	3.6	3.9
No	4.5	4.4	5.6	4.8	5.5	4.8

hold use of electricity, another measure of living standards, is associated with lower desired fertility.

5.6 DESIRED NUMBER OF SONS

A strong preference for sons would imply that responses to questions on desired family size would not be very meaningful nor predictive of couples' desires to have additional children. To determine if son preference was very strong in Egypt, husbands and wives were asked desired number of sons as well as desired number of children.

5.6.1 General observations

Figure 5.4 shows the desired number of sons by age. There is relatively little systematic pattern. Unlike desired family size, the desired number of sons does not increase uniformly with age, perhaps because it is a pure preference and is not as subject to rationalization as desired family size might be. Examining table 5.13 one notices several general facts. First, for the country as a whole husbands and wives want exactly the same number of sons on average, ie 2.6. If one compares this with desired family size it indicates that couples want approximately 60 per cent of their children to be sons. This is not extremely high compared with some other parts of the world, but it is above what would occur naturally.

Secondly, more sons are desired by husbands and wives in rural than urban areas. Women in urban areas wants one son less than in rural areas and the difference is almost as large for husbands.

Thirdly, in urban areas husbands want slightly more sons than wives while the converse is true in rural areas.

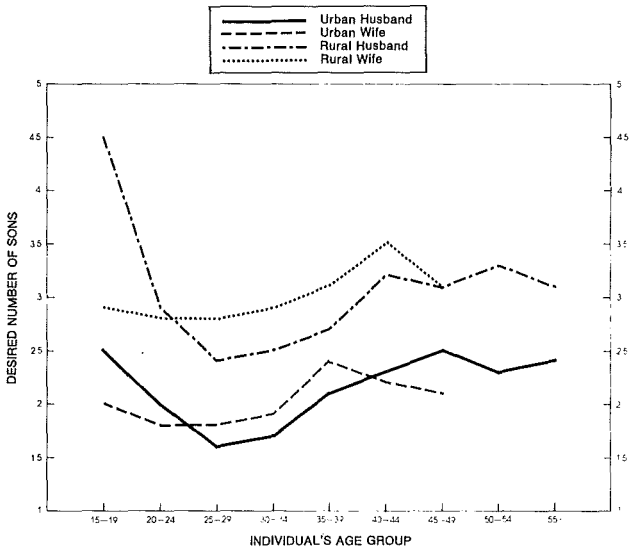

Figure 5.4 Desired number of sons by individual's age group

Comparisons of matched husbands and wives (not shown) indicate that in urban areas couples agree on the number of sons in 45 per cent of the cases while in rural areas, there is less agreement; 32 per cent agree. In urban areas wives want more sons than their husbands in 1 per cent of the cases while wives want more sons in 31 per cent of the cases in rural areas. This lower agreement between spouses and stronger female desire for offspring in rural areas was also found with respect to desired family size.

5.6.2 Differentials in desired number of sons

As shown in table 5.13, education affects desired number of sons as might be expected — the more educated want fewer sons. Comparing desired family size and desired number of sons, there is also a tendency for education to decrease the proportion of children that a wife wants to be sons, but this does not tend to occur for husbands.

In addition to educational differences one finds that women who have never worked (and to a lesser degree their husbands) want more sons than women who have worked before or since marriage. Husband's occupation has patterns similar to those observed for desired family size.

Regional differences in desired number of sons are as expected with metropolitan areas and urban Lower Egypt almost identical as are urban Upper Egypt and rural Lower Egypt at a higher level. Rural Upper Egypt has much larger desired number of sons; women there desire about twice as many sons as in metropolitan areas, just as they wanted about twice as many children. For husbands the regional differentials are less extreme, but the ratio of desired sons to desired children is higher for rural Upper Egypt than elsewhere.

Comparing desired number of sons with number of living sons one observes that on average in no region does the number of living sons equal or exceed the desired number for men and women. The implications of this fact for whether people want additional children will be explored later.

In examining the relationship between desired number of sons and economic factors, one finds that the desired number of sons decreases with per capita income and expenditures for husbands and wives in urban or rural areas in a very uniform fashion (see table 5.14). For urban husbands and wives the decrease in sons desired across per capita income groups is as great as across educational groups. This was also the case for desired family size. In rural areas, the decrease across per capita income groups is much smaller than across education

Table 5.13 Desired number of sons by background variables

	Urban		Rural		Total	
	Wife	Husband	Wife	Husband	Wife	Husband
A Education						
Illiterate, no school	2.4	2.6	3.2	3.2	2.9	3.0
Illiterate, some school	2.1	2.2	2.7	2.6	2.4	2.5
Read and write	1.8	2.1	2.6	2.8	2.1	2.5
Primary	1.6	2.0	1.7	2.5	1.7	2.2
Secondary/university	1.4	1.8	1.5	2.0	1.4	1.9
Total	2.0	2.1	3.0	2.9	2.6	2.6
B Wife's work pattern						
Never worked	2.1	2.2	3.2	2.9	2.7	2.6
Before only	1.9	2.0	2.4	2.8	2.2	2.5
Since marriage	1.7	1.8	2.4	2.8	2.1	2.4
C Husband's occupation						
Professional					1.8	1.8
Clerical					2.0	1.8
Sales					2.4	2.6
Agriculture – self-employed					3.2	3.1
Agriculture – employees					3.1	3.0
Services					2.7	2.5
Manual					2.2	2.3

D Region	Wife	Husband	Number of Living sons
Cairo and Alexandria	1.9	2.1	1.6
Urban: Lower	1.9	2.0	1.8
Upper	2.4	2.5	1.8
Rural: Lower	2.3	2.6	1.8
Upper	3.9	3.3	1.6
All Egypt	2.6	2.6	1.7

groups. This was also true with respect to desired family size. Per capita expenditure groups show somewhat sharper differentials than per capita income groups for all groups except urban wives.

When one controls for wife's education, one finds that the relationship between income per capita and desired number of sons disappears for rural wives, and is weakened slightly for other groups. Other economic factors show expected relationships: (1) women who work for others and their husbands want fewer sons than those who are self-employed or in a family business; (2) there is little systematic difference between women who don't work and those who are in own-account work; (3) those with electricity and water piped inside want fewer sons than others; (4) those with pumps and other sources of water have substantially higher desired number of sons than those with piped water.

5.7 DESIRE FOR ADDITIONAL CHILDREN

The desired number of sons as well as the desired number of children are of interest in that they are indicators of the desire to continue or cease childbearing. Direct questions were also asked on whether additional children were wanted.

5.7.1 General observations

Figures 5.5 and 5.6 show that the proportion wanting additional children decreases with the number of living children and the number of living sons. In urban areas a minority of men and women, about 40 per cent want additional children after the second child. In rural areas about 50 per cent of men and women wish to cease childbearing at three children. At all numbers of living children up to nine, a smaller proportion of urban than rural couples wish to continue childbearing.

The number of living sons is also closely related to whether people wish to continue childbearing. In urban areas the majority wish to cease childbearing after they have one living son. In rural areas only about a third of the men and women with two living sons wish to continue childbearing. Overall in urban areas, only 35 per cent of the women and 29 per cent of the men wish to have additional children. In rural areas the figures are 54 per cent and 47 per cent respectively.

5.7.2 Differential in proportion wanting additional children

Table 5.15 shows that educational differences in the proportion who wish to have additional children follows

Table 5.14 Desired number of sons by economic conditions

	Urban		Rural		Total	
	Wife	Husband	Wife	Husband	Wife	Husband
A Per capita income						
Lowest 20	2.8	2.5	3.1	3.0	3.0	2.9
21–40	2.2	2.2	3.1	3.1	2.8	2.8
41–60	2.1	2.2	2.9	2.8	2.6	2.6
61–80	1.8	2.2	2.9	2.8	2.4	2.5
81+	1.7	1.8	2.7	2.5	1.9	2.0
B Per capita expenditures						
Lowest 20	2.5	2.6	3.1	3.0	3.0	2.9
21–40	2.8	2.3	2.9	3.0	2.9	2.8
41–60	2.1	2.2	3.1	2.9	2.7	2.6
61–80	1.8	2.3	2.8	2.6	2.3	2.4
81+	1.6	1.7	2.3	2.3	1.8	1.9
C Per capita income adjusted for wife's education						
Lowest 20	2.5	2.3	2.2	2.5	2.4	2.5
21–40	1.9	2.0	2.3	2.6	2.1	2.3
41–60	1.9	2.0	2.1	2.3	2.0	2.2
61–80	1.6	2.0	2.2	2.3	1.9	2.1
81+	1.7	1.9	2.1	2.1	1.8	2.0
D Wife's employment status						
Family and self	2.3	2.2	2.5	2.8	2.5	2.7
Others	1.5	1.7	1.8	2.6	1.6	2.0
Not working	2.1	2.2	3.1	2.9	2.7	2.6
E Water facilities						
Piped inside	1.8	2.1	2.3	2.5	1.9	2.2
Piped outside	2.3	2.1	2.8	2.8	2.6	2.6
Pump/other	3.2	2.7	3.3	3.1	3.3	3.1
F Usage of electricity						
Yes	1.9	2.1	2.5	2.7	2.1	2.3
No	3.1	2.5	3.4	3.1	3.3	3.0

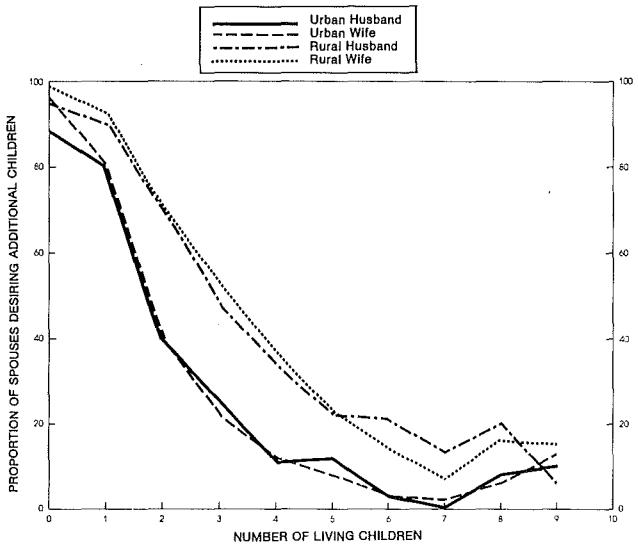

Figure 5.5 Proportion of spouses desiring additional children by number of living children

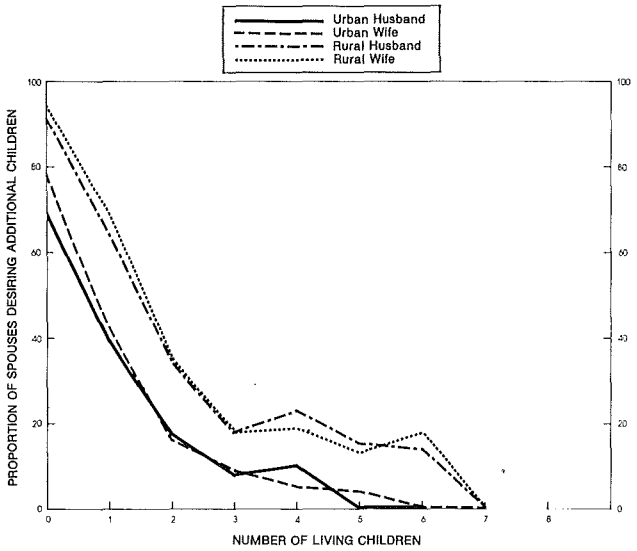

Figure 5.6 Proportion of spouses desiring additional children by number of living sons

a somewhat unexpected pattern. For urban areas the proportion increases with the wife's education. This probably reflects the fact that more educated women are younger and have had fewer children and are still trying to achieve their desired family size. Adjusting for parity either eliminates any relationship between education and desire for additional children or reverses it. In all cases except for urban women, one finds that with parity adjusted, the more educated are less likely to want to continue childbearing.

Table 5.15 Desire for additional children by background variables

	Percent wanting more children					
	Urban		Rural		Total	
	Unadj.	Adj. for Pairty	Unadj.	Adj. for Parity	Unadj.	Adj. for Parity
A Education						
Wife's response						
Illiterate, no school	30	37	57	57	49	51
Illiterate, some school	34	36	53	53	45	46
Read and write	33	33	46	45	37	38
Primary	37	34	36	40	37	36
Secondary/university	47	37	47	32	47	36
Total	35		71		56	
Husband's response						
Illiterate, no school	33	34	50	51	45	47
Illiterate, some school	33	34	48	48	42	41
Read and write	22	25	44	47	33	36
Primary	19	21	37	34	27	27
Secondary/university	34	27	52	41	38	31
Total	29		47		39	
B Wife's work pattern						
Wife's response						
Never worked	33	36	56	57	46	47
Before only	33	28	64	56	52	46
Since marriage	45	36	43	45	44	41
Husband's response						
Never worked	28	31	48	48	39	40
Before only	29	20	53	49	42	37
Since marriage	31	25	43	43	38	36

	Total			
	Wife		Husband	
C Husband's occupation	Unadj.	Adj. for Parity	Unadj.	Adj. for Parity
Professional	42	35	36	29
Clerical	46	35	38	33
Sales	37	40	32	35
Agriculture – self-employed	50	52	47	50
Agriculture – employees	62	60	55	53
Services	41	45	26	30
Manual	39	41	33	34
D Residence				
Cairo and Alexandria	29	35	25	26
Urban: Lower	36	35	29	29
Upper	39	41	39	40
Rural: Lower	42	45	37	40
Upper	71	67	62	59
All Egypt	46		39	

Other background variables also show little pattern with parents wanting additional children. Wife's work pattern and husband's occupation fail to show uniform patterns probably because the desire for additional children is related to both desired family size and achieved family size which exert in some cases compensating pressures. Adjusting for parity, however, one finds that professional and clerical groups are the least likely to want to continue childbearing, and agricultural workers are the most likely.

The regional differences in desire for additional children are in the expected direction and of very dramatic degree especially for women. While only 29 per cent of women in Cairo and Alexandria want additional children more than twice that proportion do so in rural

Upper Egypt. Again, a clustering of similar areas puts urban Lower Egypt and Metropolitan Egypt together. Urban Upper and rural Lower Egypt belong in an intermediate group and rural Upper Egypt is the clear extreme in terms of high fertility preferences. Adjustment for parity does not alter the regional pattern, but does slightly reduce the differences between regions.

Income or expenditure per capita like education, occupation and wife's work pattern show no uniform patterns (see table 5.16). One does observe, however, that in urban and rural areas for men and women those in the highest quintile are more likely than those in the lowest group to wish to continue childbearing. This pattern is not observed for educational groups. Adjustment for parity either eliminates or reverses the relationship between per capita income and expenditures and the desire to continue childbearing.

If per capita income is adjusted for wife's education, one finds that the proportion wanting additional children increases with income, and in urban areas this increase is fairly uniform. Further adjustment for parity weakens or eliminates the pattern.

Wife's work status has no systematic relationship with the desire for additional children. For household amenities, one observes that those with water piped inside and

Table 5.16 Desire for additional children by economic conditions

	Urban		Rural		Total	
	Unadj.	Adj. for Parity	Unadj.	Adj. for Parity	Unadj.	Adj. for Parity
A Per capita income						
Wife's response						
Lowest 20	25	36	49	56	44	52
21–40	31	38	60	59	49	51
41–60	27	34	52	52	42	45
61–80	33	33	56	47	45	40
81+	48	33	65	57	52	41
Husband's response						
Lowest 20	21	28	44	50	39	45
21–40	26	32	49	54	39	40
41–60	26	31	46	46	38	40
61–80	27	26	47	42	36	33
81+	38	26	62	54	45	35
B Per capita expenditures						
Wife's response						
Lowest 20	32	42	52	57	48	54
21–40	26	34	48	52	42	48
41–60	28	35	55	55	45	48
61–80	28	32	65	53	45	42
81+	49	34	62	45	52	37
Husband's response						
Lowest 20	26	34	43	48	39	45
21–40	22	32	42	43	36	40
41–60	23	26	54	51	41	42
61–80	27	29	55	46	38	35
81+	38	26	58	47	41	31
C Per capita income adjusted for wife's education						
Wife's response						
Lowest 20	27	41	34	43	37	46
21–40	33	41	44	45	42	45
41–60	29	37	37	39	36	40
61–80	35	37	43	36	40	36
81+	47	38	55	47	51	40
Husband's response						
Lowest 20	19	35	36	47	31	43
21–40	25	36	40	42	31	37
41–60	25	37	38	43	31	38
61–80	26	32	39	39	30	34
81+	38	37	56	54	43	40

Table 5.16 (*cont*)

	Urban		Rural		Total	
	Unadj.	Adj. for Parity	Unadj.	Adj. for Parity	Unadj.	Adj. for Parity
D Wife's employment status						
Wife's response						
Family/self	25	33	43	44	41	42
Others	49	38	42	47	46	41
Not working	33	35	57	57	47	47
Husband's response						
Family/self	19	26	40	42	37	40
Others	33	26	50	45	38	33
Not working	28	30	48	48	39	40
E Water facilities						
Wife's response						
Piped inside	32	33	37	42	33	35
Piped outside	40	39	54	54	49	49
Pump/other	44	45	58	57	57	56
Husband's response						
Piped inside	24	25	39	39	26	27
Piped outside	38	36	42	43	41	41
Pump/other	46	54	54	54	54	54
F Usage of electricity						
Wife's response						
Yes	33	33	48	49	39	40
No	49	47	60	59	59	57
Husband's response						
Yes	26	26	41	43	32	32
No	54	52	53	52	53	52

Table 5.17 Classification of couples by whether or not they want additional children, by urban and rural area

	Urban		
	Wife		
	Wants more (%)	Does not want more (%)	(N)
Husband			
Wants more (%)	21	9	(188)
Does not want more (%)	8	62	(445)
(N)	(183)	(450)	(633)
	Rural		
	Wife		
	Wants more (%)	Does not want more (%)	(N)
Husband			
Wants more (%)	39	10	(373)
Does not want more (%)	12	40	(400)
(N)	(393)	(380)	(773)

electricity have lower proportions wanting additional children than those without these amenities, and these patterns persist with adjustment for parity.

The above comparisons are based on all husbands and wives for whom responses were available. It is useful to look at husband-wife agreement for those couples where both husband and wife provided response to the question whether they wanted additional children. Table 5.17 shows that in urban areas 62 per cent of the couples agree

that they do not want additional children and 21 per cent agree that they do want more.

In rural areas, the overall percent of agreement is about the same, 78 per cent, but the distribution is different with equal proportions agreeing that they want more and do not want more instead of the 3 to 1 ratio observed in urban areas. For Egypt as a whole 80 per cent of the couples agree with each other and 50 per cent agree they want no more children.

In addition to urban–rural differentials there also exist regional differences in the pattern of husband-wife agreement. As noted with respect to other dimensions of fertility preferences, there are three clusters: (1) Cairo/Alexandria and urban Lower Egypt show high proportions of couples who agree that they want to have no more children (63–64 per cent) while only 18–22 per cent agree that they want more; (2) rural Lower Egypt and urban Upper Egypt have a slight majority of couples (52–53 per cent) who agree that they wish to cease childbearing and 27–29 per cent who agree they want more children; (3) rural Upper Egypt is clearly exceptional and a majority of couples (55 per cent) agree they want additional children while slightly less than a quarter of the couples (23 per cent) agree they do not want additional children. This has important implications for family planning policy.

The agreement between husband and wife may be fortuitous or may arise from discussion, debate and negotiation. Whether couples are aware of their agreement and whether it arises from discussion has implications for family decision making about fertility control.

5.8 DISCUSSION OF FAMILY SIZE DESIRES

In an effort to determine whether couples felt free to discuss family size, husbands and wives were asked if they had discussed family size desires with their spouse. Thirty-nine percent of the couples both reported independently that they had discussed desired family size while 23 per cent agreed that they had not. In 22 per cent of the couples only the husbands reported discussion while in 17 per cent, only the wife did. Strong urban-rural differences exist, however. While 54 per cent of urban couples have both spouses reporting discussion less than half that per cent (26) of the rural couples did. Thirty-one percent of rural couples agreed they had not discussed family size compared with 12 per cent in urban areas.

5.8.1 Differentials in discussion of desired family size

The patterns on discussion are as might be expected with respect to husband-wife joint reporting of discussion, as shown in table 5.18. The higher the level of education, husband's or wife's, the greater the percentage of couples who both report discussion. If the wife has worked since marriage, the couple is more likely to report discussion. Occupation patterns are as might be expected. Regional patterns are as expected with 57–60 per cent agreeing that they have discussed family size in metropolitan areas and urban Lower Egypt; 34–36 per cent in rural Lower Egypt and urban Upper Egypt and only 14 per cent in rural Upper Egypt.

As shown in table 5.19, economic conditions also show familiar patterns. Per capita income and expenditure tend to be positively associated with jointly reported discussion, but this effect is stronger in urban than rural areas. Even after adjusting for wife's education, one finds that higher per capita income is associated with more discussion. Couples where the wife works for others show higher discussion than others, as do those with piped water and electricity.

Overall the sharpest differentials in the pattern of discussion occur across educational and regional groups. These patterns may have important implications for policy.

5.8.2 Correlates of discussion

Reports of discussion provide some insight into both the importance or lack of discussion on family size desires among couples and their styles of decision making. This might well have implications for the adoption or non-adoption of family planning. While this point will be explored later, there is some indirect evidence on the consequences of discussion which are related to circumstances favoring the adoption of family planning.

One piece of evidence is the relationship between reported discussion and agreement on whether a couple wishes to have additional children. In 63 per cent of the couples where both husband and wife reported discussion, both the husband and the wife wanted no more children. In only 26 per cent of the couples where neither reported discussion, did both report that they wanted to terminate childbearing. In couples where there was disagreement over whether the couples had discussed family size, there were large differences depending on whether the husband or wife reported discussion. When only the husband did, 57 per cent agreed they did not want another child while where only the wife did, only 40 per cent agreed that no more children were wanted.

Table 5.18 Proportion reporting discussion of family size by background variables

	Urban		Rural		Total	
	% Both report	% Neither report	% Both report	% Neither report	% Both report	% Neither report
A Education						
Wife						
Illiterate, no school	44	20	21	36	28	31
Illiterate, some school	39	14	27	26	32	21
Read and write	64	[5]	42	[14]	56	[8]
Primary	70	[4]	[56]	[11]	66	[6]
Secondary/university	77	[3]	82	0	77	[2]
Total	55	13	26	32	39	23
Husband						
Illiterate, no school	31	25	17	39	21	36
Illiterate, some school	[35]	[19]	[18]	[34]	25	27
Read and write	57	[8]	31	28	43	19
Primary	64	[14]	32	[19]	49	16
Secondary/university	71	[4]	66	[5]	70	[4]
Total	59	18	33	35	47	29
B Wife's work pattern						
Never worked	53	12	25	33	38	23
Before only	[39]	[22]	[24]	[28]	31	26
Since marriage	65	[6]	31	26	46	17
C Husband's occupation						
Professional					68	[3]
Clerical					58	[10]
Sales					38	[22]
Agriculture – self-employed					22	32
Agriculture – employees					17	47
Services					36	18
Manual					48	16
D Residence	Only husband reports	Only wife reports	Both	Neither		
Cairo and Alexandria	19	15	57	9		
Urban: Lower	21	[8]	60	11		
Upper	26	[17]	36	22		
Rural: Lower	29	17	34	20		
Upper	14	24	14	48		
All Egypt	22	17	39	23		

NOTE: Brackets denote sample size <20.

There is no way of telling the direction of causation in these associations. It may be that discussion leads to agreement about terminating childbearing or it may be that only when there is a desire to terminate childbearing does discussion take place.

Another way of estimating the impact of discussion is to determine if couples who report discussion are better able to predict whether the spouse wishes to continue childbearing than those couples where discussion does not take place. The spouse who reports discussion should be better able to accurately predict.

Discussion does improve the ability to predict whether one's spouse wishes additional children. While women are slightly better at predicting than men (89 per cent are accurate versus 81 per cent for men), if men or women report discussion, they are more likely to be able to predict correctly than if there were no discussion. Fifty-eight percent of the women and 62 per cent of the men who correctly reported what their spouses' desires were, reported they had discussed them. But these differences are not vastly different from what would be expected on the basis of chance alone, 51 and 49 per cent respectively.

5.9 SUMMARY AND CONCLUSION

This chapter has reviewed the attitudes, aspirations and preferences that may shape the fertility behavior of couples in Egypt. The data set used here is fairly rare in that it allows one to examine the opinions of both husbands and wives while most surveys only focus on women.

Table 5.19 Proportion reporting discussion of family size by economic conditions

	Urban		Rural		Total	
	% Both report	% Neither report	% Both report	% Neither report	% Both report	% Neither report
A Per capita income						
Lowest 20	35	[12]	21	37	24	31
21–40	47	20	20	35	32	29
41–60	55	[17]	28	28	39	24
61–80	54	[9]	29	24	42	16
81+	69	[4]	50	[18]	64	[8]
B Per capita expenditures						
Lowest 20	31	[16]	23	36	25	31
21–40	44	[23]	23	31	29	29
41–60	52	[16]	21	34	33	27
61–80	54	[10]	30	27	45	16
81+	72	[3]	68	[8]	71	[4]
C Per capita income adjusted for wife's education						
Lowest 20	47	5	47	22	44	19
21–40	58	14	46	19	51	17
41–60	63	12	53	13	56	13
61–80	61	5	50	12	55	8
81+	64	6	63	10	63	8
D Wife's employment status						
Family and self	[37]	[21]	25	27	27	26
Others	71	[2]	[47]	[22]	64	[8]
Not working	52	13	25	33	37	24
E Water facilities						
Piped inside	61	8	58	[10]	61	8
Piped outside	42	19	23	32	29	28
Pump/other	[25]	[32]	21	36	22	35
F Usage of electricity						
Yes	58	9	36	21	49	13
No	[19]	42	18	40	18	40

NOTE: Brackets denote sample size <20.

The major findings of this analysis are as follows:

1 Among the perceived benefits of children, the use of children when they are young seems to be less important to husbands and wives than the expectation of old age support. While there is considerable variation between husbands and wives in the perceived age at which children — sons and daughters — are useful in urban and rural areas, there is little systematic variation across social background or economic groups. More telling, there is no association between the perceived age at which children are useful and parental desires for children in general or sons in particular. This seems consistent with the very low participation of children in work either for the family business or for others observed in chapter 3.

Expectations that children will provide a place to live and financial support in old age, on the other hand, show both systematic variations across background and economic groups and close association with desired family size and the desired number of sons. This does not mean that there is a necessary causal association, but at a minimum attitudes on these dimensions tend to be consistent at least in the aggregate. Within particular sub-groups, associations may well disappear for perceived old age support or may emerge for the perceived age at which children are useful.

2 The educational aspirations of parents, particularly for daughters, tend to be clustered at either no schooling or secondary or university education. Primary schooling does not appear to be valued in and of itself and many rural parents especially fathers, want no education for their daughters. This perhaps reflects the observation in chapter 3 that those with only primary certificates did not earn more than those who were literate without a certificate — although those who were literate did earn more than illiterates. Educational aspirations increase with parental education and status of father's occupation and are higher among families where the wife has

worked since marriage. There are also associations between aspirations for university and per capita income and expenditure, but these tend to emerge only after middle income is reached.

3 Educational aspirations are closely related to family size preferences. The higher the educational aspirations, especially for daughters, the lower the desired family size. For women, there is also a tendency to want fewer sons if higher education is wanted for their daughters. The desired education of sons is in most cases not associated with a desire for fewer children, except among rural women who tend to want *only* 2.7 sons if they aspire for university education for them instead of 4.4 among those who want no schooling for their sons.

4 There is a clustering of regions on several dimensions of family size preferences. Cairo/Alexandria and urban Lower Egypt have the lowest desired family size and the lowest desired number of sons. Rural Lower Egypt and urban Upper Egypt show a somewhat higher demand while rural Upper Egypt shows considerably higher desired family size. There are also regional differences in the desires of men and women for children. In Cairo/Alexandria husbands want an average of a half child more than their wives, while in other urban areas, husbands want only 0.1 more. In rural areas there are sharp Upper/Lower Egypt differences: in Lower Egypt men want 0.3 of a child more than women, while in Upper Egypt women want 1.4 more children than men on average.

5 The desired number of children and desired number of sons show expected relationships with social background and economic conditions. Differences in desired fertility are almost identical across income per capita and education groups in urban areas but much smaller across income per capita and education in rural areas. This pattern was also observed with respect to children ever born in chapter 4. Differences in desired family size across income and education groups in urban areas are less than differences in children ever born. This implies differentials in the extent of unwanted fertility with the poorest 80 per cent and those with education below secondary having on average more children than they want (more than 1 excess child on average among the poorest and illiterate). In rural areas desired family size of wife exceeds actual family size on average for all-income groups and for the lower 80% of husbands. Only for the wealthiest husbands in rural areas does actual family size exceed desired. While this is suggestive of the extent to which couples wish to cease childbearing, it is not only averages that matter but distribution.

6 The proportion wanting additional children depends on actual fertility, child survival and desired family sizes of husbands and wives. For Egypt as a whole less than 50 per cent of both sexes want additional children. In urban areas about one-third do and in rural areas about a half do. There are no well defined patterns by background and economic conditions. There are, however, strong regional differences in the proportion wanting additional children. The proportion wanting additional children increases uniformly for women from Cairo/Alexandria to rural Upper Egypt with rural Upper Egypt having 71 per cent of women and 62 per cent of men wanting additional children. In all other regions far less than 50 per cent wish to continue childbearing. Overall, 62 per cent of the couples in urban areas agree that they do not want additional children. In rural areas, 40 per cent of the couples agree that they do not want more. This has important implications for the potential desire to limit fertility through family planning.

While the motivation to limit family size depends on the desire for additional children, the ability of couples to do so is determined by knowledge of family planning on the part of the husband and wife and family planning knowledge and access. These variables and their differentials across groups as well as the use of contraceptives will be explored in the next chapter.

CHAPTER 6

CONTRACEPTIVE KNOWLEDGE, ACCESS, AND USE

6.1 INTRODUCTION

The decision to use contraceptives depends on the motivation of both husband and wife to regulate fertility (for limitation and spacing), on their knowledge of various methods of contraception, their perception of how available these methods are in terms of both travel time and financial cost, and on the co-operation of husbands and wives in the decision making about family limitation. In the previous chapter, the relationships between motivation and husband/wife discussion and social background and economic factors were examined. In this chapter, the association between background factors and economic conditions and contraceptive knowledge, and between perceived access and use, will be explored. In a final chapter, the policy implications of these various analyses will be discussed.

6.2 CONTRACEPTIVE KNOWLEDGE OF HUSBANDS AND WIVES

Contraceptive knowledge is a prerequisite for contraceptive use. If either the husband or the wife knows of a method and has access to it, the couple has the potential to regulate their fertility if they are so motivated. In addition, the more methods are known, the better a couple's chance of finding a method suitable to their needs, and the earlier their chance of adopting it. Knowledge of at least one efficient contraceptive is widespread. Only 11 per cent of the men and 9 per cent of the women knew of no efficient method. The range of methods known, however, is fairly narrow — over half the men and 40 per cent of the women knew only one or two methods. These proportions vary considerably between urban and rural areas, with about 15 per cent of the men and women in rural areas knowing no efficient method, and 37 and 22 per cent of men and women in these areas knowing only one method, compared with 18 and 8 per cent knowing only one method in urban areas.

6.2.1 Kinds of methods known

Table 6.1 summarizes the proportion of husbands and wives knowing the five major methods in urban, rural and in all Egypt. The pill is almost universally known throughout Egypt. The IUD is the second most widely known method; however, there are very large urban–rural differences in knowledge of the IUD, but a clear majority of men and women in urban and rural areas do know of the IUD. The other three major

Table 6.1 Proportion of husbands/wives knowing various methods of contraception by residence

	Pill	IUD	Injection	Condom	Sterilization
Urban					
Neither	[0]	6	75	30	36
Wife only	3	20	16	14	48
Husband only	[2]	6	6	22	5
Both	94	68	3	34	12
(N)	(924)	(924)	(924)	(924)	(923)
Rural					
Neither	4	34	83	74	66
Wife only	11	24	13	6	28
Husband only	11	9	3	13	3
Both	74	33	[1]	6	3
(N)	(1255)	(1255)	(1255)	(1255)	(1255)
Total					
Neither	3	22	79	55	53
Wife only	8	23	14	10	37
Husband only	7	8	5	17	4
Both	82	48	2	18	7
(N)	(2179)	(2179)	(2179)	(2179)	(2178)

NOTE: Brackets denote sample size ≤ 20.

methods are not known by a majority of the population. This fact is not surprising, for injection and sterilization are only available to a limited degree in Egypt and are not offered through the family planning program. The very limited knowledge of the condom is more surprising. While there are sharp urban–rural differences here, as shown in table 6.1, the majority of Egyptian men, 65 per cent, and women, 72 per cent, are not aware of the condom or would not admit that they do. In urban areas 48 per cent of the women and 56 per cent of the men acknowledge the condom, while in rural areas the proportions are only 13 per cent and 20 per cent respectively.

Knowledge of various methods has male–female and urban–rural differences, with those in urban areas knowing more methods and wives being more knowledgeable than husbands — except for condoms. The superior knowledge of women is greatest with respect to sterilization. Forty-three per cent of the women and only 11 per cent of the men know this method. There are also differences in knowledge across background and economic conditions as discussed in the next section. These sex differences, as well as urban–rural differences in knowledge of the IUD, condom and sterilization are shown in figures 6.1, 6.2 and 6.3.

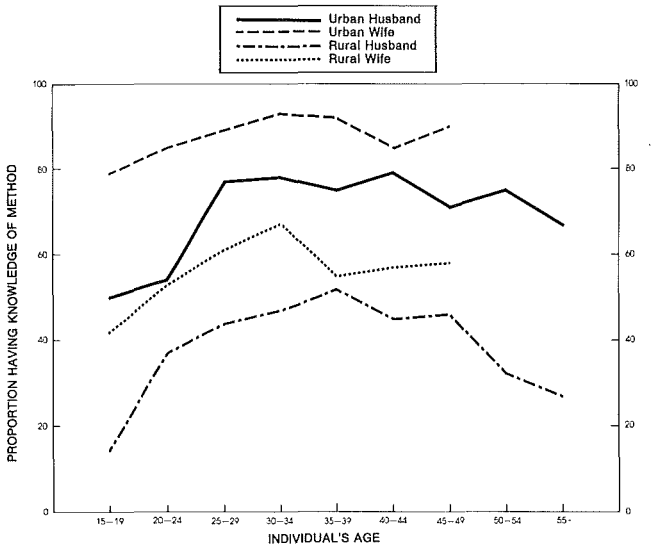

Figure 6.1 Proportion of spouses having knowledge of IUD by individual's age

6.2.2 Differentials in contraceptive knowledge

The difference in knowledge across education groups, wife's work pattern, husband's occupation and region are shown in table 6.2. Knowledge of the pill is almost universal except among illiterates in rural areas. Knowledge of IUDs, condoms and sterilization increase with education for males and females in urban and rural areas. Knowledge of injections does not. While men are more likely to know about condoms than women, this is

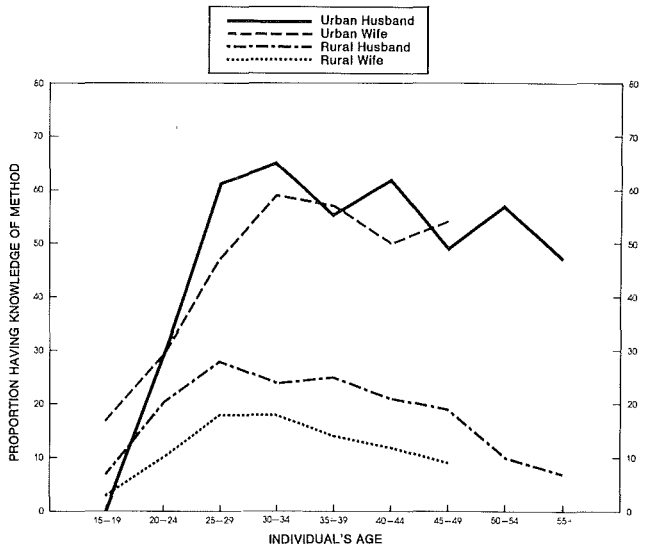

Figure 6.2 Proportion of spouses having knowledge of condom by individual's age

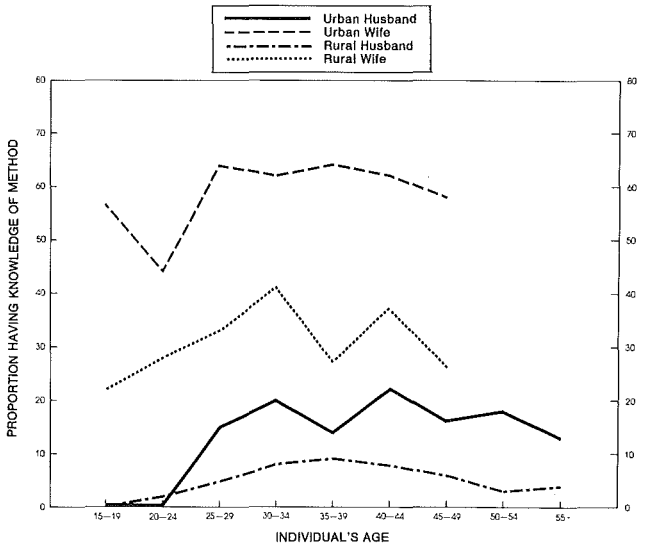

Figure 6.3 Proportion of spouses having knowledge of sterilization by individual's age

not necessarily true of men and women with the same education. In urban areas, knowledge of the same three methods (IUD, condoms, sterilization) is greater among women who have worked since marriage and their husbands than among those couples where the wife has not worked since marriage. In rural areas, knowledge is greater only for sterilization among those couples where the wife has worked since marriage. Husband's occupation also seems to have its strongest relationship with the three methods (IUD, condom and sterilization).

Regional differentials are much as might be expected with respect to all methods except injections. Rural Upper Egypt clearly has the lowest level of knowledge and less than three quarters of the women and only slightly more husbands know of the pill. In no other area are more than 10 per cent of the people ignorant of the

Table 6.2 Proportion knowing five major methods by background variables

Method	Pill		IUD		Injection		Condom		Sterilization	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
A Education										
Urban										
Illiterate: no school	96	90	81	48	18	5	32	23	49	5
Illiterate: some school	98	96	93	73	17	9	46	36	56	4
Read and write	98	97	91	74	21	10	50	53	63	10
Primary certificate	100	99	97	77	27	9	70	64	73	11
Secondary/university	100	100	97	95	18	14	78	87	78	37
Total	98	96	89	74	19	10	48	56	59	17
Rural										
Illiterate: no school	80	78	49	30	11	3	8	11	26	3
Illiterate: some school	92	81	69	32	18	9	16	13	43	3
Read and write	100	91	79	51	22	5	33	21	43	5
Primary certificate	100	98	80	63	27	5	33	34	37	8
Secondary/university	100	99	96	87	29	10	57	64	57	31
Total	85	84	57	42	14	4	13	20	32	6
Total										
Illiterate: no school	85	81	59	35	13	3	15	14	33	3
Illiterate: some school	95	87	77	46	18	8	28	21	48	3
Read and write	99	94	86	62	22	7	43	36	56	7
Primary certificate	100	99	93	71	27	7	60	50	63	10
Secondary/university	100	100	97	93	20	13	75	81	75	36
Total	90	89	70	56	16	7	29	35	43	11
B Wife's work pattern										
Urban										
Never worked	98	96	87	72	19	9	43	53	56	15
Before marriage only	96	96	87	70	23	9	41	50	54	9
Since marriage	99	97	96	86	17	12	75	75	76	29
Rural										
Never worked	84	83	54	43	13	14	12	19	27	6
Before marriage only	90	83	66	34	19	3	12	20	38	6
Since marriage	88	88	64	42	17	7	17	21	47	7
Total										
Never worked	89	89	69	56	15	6	26	34	40	10
Before marriage only	93	88	74	48	21	5	23	32	44	7
Since marriage	92	91	77	59	17	9	39	42	58	15
C Husband's occupation										
Total										
Professional	99	98	89	91	19	12	65	81	65	37
Clerical	98	99	89	89	24	10	51	72	62	24
Sales	88	92	74	52	12	5	26	29	41	8
Agricultural: self	87	85	59	40	15	5	9	11	29	5
Agricultural: others	77	77	45	28	8	2	8	11	26	3
Service	95	92	74	55	20	9	30	37	49	9
Manual	95	93	82	66	18	8	35	44	52	8
D Region										
Cairo/Alexandria	98	98	92	80	21	10	56	62	66	17
Lower Urban	97	97	88	76	18	12	39	59	57	15
Upper Urban	97	90	80	50	13	6	36	31	41	19
Lower Rural	95	91	79	57	20	6	18	26	44	7
Upper Rural	71	75	28	22	6	2	6	11	15	5
Total	90	89	70	56	16	7	28	35	43	11

pill. A majority of the women, except in metropolitan areas, are ignorant of the condom, as are a majority of the men outside the metropolitan areas and urban Lower Egypt.

Income and expenditure group shows little systematic relationship to knowledge of pills or injections in urban or rural areas. (See table 6.3.) Knowledge of the IUD, condoms and sterilization among husbands and wives is

Table 6.3 Knowledge of methods by economic conditions of households

Method	Pill		IUD		Injection		Condom		Sterilization	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
A Per capita income										
Urban										
Lowest 20%	96	89	86	58	13	8	27	34	43	11
21–40	97	96	86	62	21	5	39	40	52	11
41–60	98	96	87	72	23	11	46	56	58	13
61–80	99	98	89	75	19	10	44	56	62	11
81+	98	98	93	98	17	12	65	74	69	28
Rural										
Lowest 20%	87	83	57	40	11	4	10	18	30	6
21–40	80	85	49	39	17	4	11	18	30	3
41–60	86	83	60	45	14	7	13	17	35	5
61–80	86	80	60	41	18	3	13	24	32	8
81+	88	84	65	49	14	6	21	29	35	12
Total										
Lowest 20%	89	84	63	43	11	5	14	21	32	7
21–40	86	89	63	48	18	5	22	26	38	6
41–60	91	88	70	56	17	8	26	32	44	8
61–80	92	92	74	58	18	6	29	39	47	10
81+	96	94	85	78	16	10	54	62	60	24
B Per capita expenditure										
Urban										
Lowest 20%	96	90	85	54	20	7	27	29	47	7
21–40	97	93	84	63	16	8	34	40	47	9
41–60	99	99	88	71	21	9	44	48	55	10
61–80	98	96	87	78	19	11	48	57	60	15
81+	99	98	94	85	18	11	64	76	61	14
Rural										
Lowest 20%	84	83	56	40	10	3	9	17	30	5
21–40	84	84	54	34	16	5	13	16	30	3
41–60	87	84	61	43	14	4	12	15	33	4
61–80	84	85	52	44	17	6	15	29	32	12
81+	91	86	74	57	20	7	28	39	42	16
Total										
Lowest 20%	87	85	62	43	12	4	13	19	33	5
21–40	87	87	62	46	16	6	19	23	35	5
41–60	91	90	71	53	17	6	24	28	41	6
61–80	91	91	71	62	18	9	33	44	47	13
81+	97	95	90	80	18	10	57	69	64	26
C Per capita income adjusted for wife's education										
Urban										
Lowest 20%	98	91	93	70	15	11	44	55	55	23
21–40	99	98	92	73	23	8	55	59	63	23
41–60	100	98	93	81	24	14	61	73	68	23
61–80	100	99	93	83	20	11	56	70	70	20
81+	98	98	93	86	17	11	63	70	67	25
Rural										
Lowest 20%	97	93	79	68	23	5	35	52	46	22
21–40	91	96	72	68	29	6	36	52	46	20
41–60	96	93	82	74	26	8	38	50	51	22
61–80	95	96	79	66	29	4	35	53	47	23
81+	96	92	81	68	22	7	38	51	47	23
Total										
Lowest 20%	96	91	80	66	16	9	39	51	50	21
21–40	94	96	80	70	23	8	46	55	56	20
41–60	97	94	86	76	22	12	49	59	60	22
61–80	97	97	86	74	22	9	47	61	60	21
81+	97	95	88	80	17	10	56	64	62	24

Table 6.3 (*cont*)

Method	Pill		IUD		Injection		Condom		Sterilization	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
D Wife's employment status										
Urban										
Family/self	96	86	89	54	[14]	[11]	[57]	[36]	[54]	[11]
Others	100	99	98	93	18	[13]	78	83	81	33
Not working	98	96	87	72	19	9	43	52	56	14
Rural										
Family/self	88	90	63	39	15	[9]	13	18	46	[4]
Others	89	82	70	51	[25]	[2]	[30]	[30]	53	[16]
Not working	84	83	55	42	13	4	12	20	28	6
Total										
Family/self	89	89	66	41	15	[9]	18	20	47	[5]
Others	97	94	89	80	20	[9]	63	66	72	27
Not working	90	89	69	55	16	6	25	34	40	10
E Water sources										
Urban										
Piped inside	99	99	93	82	20	11	59	66	68	20
Piped outside	96	91	83	59	18	7	29	40	45	11
Pump/other	90	88	68	53	12	0	12	20	22	7
Rural										
Piped inside	99	99	82	77	23	7	41	51	49	13
Piped outside	90	85	59	42	16	4	10	18	33	5
Pump/other	78	80	50	35	11	4	9	15	27	6
Total										
Piped inside	99	99	91	81	20	11	56	63	65	19
Piped outside	92	87	67	48	16	5	16	25	37	7
Pump/other	79	81	52	37	11	4	10	15	27	6
F Electricity										
Urban										
Yes	99	98	91	79	20	11	53	61	64	18
No	89	81	67	33	9	2	8	17	22	5
Rural										
Yes	92	91	73	54	20	6	21	28	43	8
No	80	78	44	32	9	3	6	13	23	4
Total										
Yes	96	95	84	69	20	9	40	48	55	14
No	81	79	47	32	9	3	6	13	22	4

NOTE: Brackets denote sample size ≤ 20.

positively related to income and expenditure group in urban areas. In rural areas strong, uniform patterns are only observed for condoms. In rural areas, the highest income and expenditure groups have greater knowledge than the lowest group for all methods, but differences are not always large, nor is the pattern across middle income groups uniform. When per capita income is adjusted for wives' education, the association between income and knowledge ceases to be uniform except for knowledge of the IUD among urban husbands.

Women who work for others are more likely to know of all contraceptive methods than are women who work on own-account. They tend to have higher knowledge of all methods except injection than women who do not work. Their husbands are more knowledgeable as well, except with respect to the pill.

The patterns of knowledge by household amenities — water supply and electricity — are as might be expected, but the differences are most dramatic with respect to knowledge of condoms and sterilization.

Thus, knowledge of methods other than the pill are far from universal in Egypt. The rural, the poor, and the illiterate are not unexpectedly the ones most deficient in knowledge of contraception. What is more surprising is the low level of knowledge of the condom and the very low knowledge of sterilization among men. This means that the couples must rely on either the pill or IUD; and

these are thus neither permanent methods of fertility control nor methods that can be controlled by men.

To understand the relative lack of knowledge of the condom and sterilization among males it might be useful to explore briefly the sources of their knowledge about contraception.

6.3 SOURCES OF CONTRACEPTIVE KNOWLEDGE FOR HUSBANDS

One can learn about contraceptives from family and friends, printed media, radio or TV, private doctors, or the various government health and family programs. To the extent that husbands rely on family and friends, the knowledge of the lesser known methods will not be acquired. Table 6.4 summarizes the sources of knowledge by regions.

The most frequent source of knowledge everywhere was friends and relatives other than wife. This is remarkably stable across regions. The second most common source was radio and TV. The third most common source varies by region. In Cairo/Alexandria printed media were the third source. In urban Lower Egypt the wife was third. In urban Upper Egypt wives and printed matter were equally important. In rural Lower Egypt wives were the third most important source just as in rural Upper Egypt, but in the latter the percentage of husbands hearing of family planning from their wives was less than half that in other rural areas and one-third that of urban Lower Egypt. This probably reflects the general lack of communication between husband and wife in rural Upper Egypt, as illustrated with respect to discussions about desired family size in the preceding chapter.

The medical profession and the various government programs have a much smaller role in disseminating information about contraceptives. Not one of the five categories of health or family planning facilities has reached one-fifth of the husbands for the country as a whole. (For wives these figures may be much greater.) Only in lower Egypt (urban and rural) and Cairo/Alexandria are there one-fourth of the husbands who have been contacted by any one of these programs. In metropolitan areas and urban Lower Egypt family planning centers have played an important role. It is unclear whether this is because husbands in these areas are more motivated to use contraceptives and therefore went to the clinic to get information, or whether the centers themselves are more active. In rural Lower Egypt health centers have played a major role. In rural Upper Egypt neither private doctors nor the five types of programs have reached more than 10 per cent of the husbands.

6.4 ACCESS TO CONTRACEPTION

Knowledge of contraception is necessary but not sufficient if people are to use contraception; motivation and access are needed as well. Motivation was discussed in chapter 5. In this section three different measures of access will be examined: knowledge of a location where various family planning methods can be found; perceived travel time to that location; and perceived costs of various methods.

6.4.1 Knowledge of a source of supply of contraceptives

Husbands and wives were asked if they knew where they could obtain the pill and IUD. In addition, husbands were asked if they knew where they could obtain condoms. Tables 6.5 and 6.6 summarize the differentials in the proportion knowing of a source of supply by background and economic variables.

Table 6.4 Sources of contraceptive knowledge for husbands by region (proportion having heard of contraceptives from each source)

	Cairo/ Alexandria	Urban Lower	Urban Upper	Rural Lower	Rural Upper	Total
Wife	48	58	43	41	17	40
Friends & relatives	88	92	92	92	90	91
Private doctor	27	24	22	10	6	16
Newspapers & magazines	51	52	43	25	16	35
Radio & TV	84	80	66	60	47	66
Family planning center	24	26	15	13	6	16
Maternal/child health	18	20	18	6	3	11
Health unit	8	17	9	28	10	17
Hospital	16	22	10	15	5	14
Visiting nurse	2	3	6	3	3	3
Number	500	248	142	661	398	1948

Table 6.5 Proportion of those knowing method who know source by background variables

Method	Pill		IUD		Condom
	Wife	Husb.	Wife	Husb.	Husband
A Education					
Urban					
Illiterate: no school	89	79	53	63	65
Illiterate: some school	91	91	63	70	[60]
Read and write	98	94	73	71	79
Primary certificate	99	92	80	76	82
Secondary/university	100	98	76	83	93
Total	93	91	68	73	84
(N)	(904)	(889)	(819)	(685)	(518)
Rural					
Illiterate: no school	71	74	44	53	52
Illiterate: some school	79	83	47	53	[39]
Read and write	91	88	58	63	66
Primary certificate	93	89	50	70	84
Secondary/university	96	97	62	87	91
Total	75	82	47	63	69
(N)	(1056)	(1066)	(528)	(716)	(249)
Total					
Illiterate: no school	77	76	52	53	54
Illiterate: some school	84	86	55	63	52
Read and write	95	91	68	68	75
Primary certificate	97	91	73	73	83
Secondary/university	99	98	74	87	90
Total	84	86	58	69	79
B Wife's work pattern					
Urban					
Never worked	92	91	66	72	80
Before marriage only	94	85	76	59	82
Since marriage	97	95	75	86	95
Rural					
Never worked	76	83	48	65	69
Before marriage only	67	78	51	66	47
Since marriage	76	81	42	56	78
Total					
Never worked	84	86	58	69	77
Before marriage only	78	81	62	62	68
Since marriage	85	87	58	73	90
C Husband's occupation					
Total					
Professional	97	98	69	86	95
Clerical	86	89	60	61	82
Sales	93	95	69	83	84
Agricultural: self	75	79	48	59	56
Agricultural: others	67	75	39	47	47
Services	84	85	58	71	75
Manual	90	89	63	66	75
D Region					
Cairo/Alexandria	94	93	72	75	82
Lower Urban	94	90	65	71	84
Upper Urban	89	88	60	72	94
Lower Rural	81	87	46	64	67
Upper Rural	66	73	48	59	77
Total	84	86	58	69	79
(N)	(1970)	(1945)	(1535)	(1213)	(767)

NOTE: Brackets denote sample size ≤ 20.

In general, the vast majority of those who knew of a particular method knew of a source of supply. Men were slightly more likely than women and those in urban areas more likely than those in rural areas to know a source of supply for pills and IUDs. In general, the source of supply of the pill was best known and of the IUD the least known.

As shown in table 6.5, knowledge of source of supply increases across educational groups for men and women in urban and rural areas, but there are a few irregularities in the pattern. If one looks at men and women of the same educational group, one finds that women are slightly more likely to know of the location of pills than men, while the converse is true for IUDs, especially in rural areas.

Wife's work pattern is not systematically related to knowledge of a source of supply, while occupation has expected patterns.

Regional patterns of source of supply among those who know specific methods are, for the most part, as expected. The only major deviations occur for condom. The highest knowledge of source of supply occurs in urban Upper Egypt where 94 per cent know a location, more than 10 per cent above knowledge of source in metropolitan areas. Only 67 per cent of the men who know of the condom in rural Lower Egypt know of

Table 6.6 Proportion of those knowing method who know source by economic conditions

Method	Pill		IUD		Condom
	Wife	Husb.	Wife	Husb.	Husband
A Per capita income					
Urban					
Lowest 20%	90	89	64	64	65
21–40	90	88	68	74	76
41–60	95	90	72	70	77
61–80	93	91	66	74	86
81+	96	95	69	77	91
Rural					
Lowest 20%	71	82	38	56	65
21–40	75	77	49	60	67
41–60	77	85	56	64	68
61–80	77	83	45	74	75
81+	82	83	54	70	77
Total					
Lowest 20%	76	84	45	58	65
21–40	81	82	59	67	72
41–60	85	87	64	67	75
61–80	85	84	57	74	83
81+	92	92	66	76	89
B Per capita expenditures					
Urban					
Lowest 20%	90	85	67	67	64
21–40	90	88	69	68	66
41–60	92	91	67	70	81
61–80	94	91	67	71	83
81+	96	94	70	80	92
Rural					
Lowest 20%	71	79	41	53	59
21–40	78	84	52	62	67
41–60	77	83	50	64	70
61–80	75	81	43	78	79
81+	81	86	54	77	80
Total					
Lowest 20%	75	80	58	57	60
21–40	82	86	49	64	66
41–60	83	86	58	67	77
61–80	86	87	58	73	82
81+	93	93	59	80	90

Table 6.6 (*cont*)

Method	Pill		IUD		Condom
	Wife	Husb.	Wife	Husb.	Husband
C Per capita income adjusted for wife's education					
Urban					
Lowest 20%	96	93	73	73	74
21–40	95	92	76	81	84
41–60	100	94	79	77	84
61–80	97	94	72	79	92
81+	95	94	68	74	86
Rural					
Lowest 20%	82	93	49	74	85
21–40	86	88	60	78	85
41–60	87	95	67	81	84
61–80	85	91	54	88	87
81+	89	89	60	76	78
Total					
Lowest 20%	86	91	57	70	79
21–40	91	89	70	78	83
41–60	94	94	74	77	84
61–80	92	92	65	81	90
81+	93	92	66	74	85
D Wife's employment status					
Urban					
Family/self	89	88	64	[67]	[70]
Others	99	97	77	88	97
Not working	92	90	67	71	80
Rural					
Family/self	78	82	43	56	73
Others	71	77	38	59	88
Not working	75	82	48	65	67
Total					
Family/self	80	83	47	57	72
Others	91	91	67	82	96
Not working	83	86	58	68	76
E Water sources					
Urban					
Piped inside	96	94	70	77	88
Piped outside	89	88	66	66	74
Pump/other	83	71	53	52	25
Rural					
Piped inside	92	90	64	72	88
Piped outside	75	84	44	65	63
Pump/other	71	78	45	59	65
Total					
Piped inside	95	93	69	76	88
Piped outside	80	85	52	65	68
Pump/other	72	77	46	57	61
F Electricity					
Urban					
Yes	95	94	70	75	85
No	80	66	50	49	[41]
Rural					
Yes	82	86	49	67	79
No	68	78	44	59	53
Total					
Yes	90	91	63	72	84
No	70	76	45	57	51

NOTE: Brackets denote sample size ≤ 20.

source of supply, while the comparable proportion is 77 per cent in rural Upper Egypt. For most methods for husbands and wives in all regions, a majority of those who know a method also know a source of supply. The exception is that less than 50 per cent of the rural women who know of IUDs know where to find them.

The variations of knowledge of supply by per capita income and expenditure quintiles are not uniform across all methods, and across urban and rural areas for husbands and wives. (See table 6.6.) Knowledge of a source of supply of condoms most uniformly increases with per capita income or expenditure level. Husband's knowledge of supply for IUDs increases with per capita income and expenditure for all cases except for urban men for income. If per capita income is adjusted for wife's education, no new patterns emerge and the relationship between income and knowledge of access to condom and IUDs among husbands disappears. In urban areas, women who work for others and their husbands are more likely to know a source of supply for pills, IUDs and condoms than other women. In rural areas, there are no uniform patterns with respect to wife's work status. Those with modern amenities of piped water and electricity know more supply sources for all methods than those without.

6.4.2 Perceived travel time to a source of supply

The amount of time it takes to get to a source of supply might be a major determinant of whether or not a method is used. This is more likely to be true when resupply is needed more frequently. Interestingly, the perceived distances are the least, 13 minutes for condoms; followed by pills (16–18 minutes); while the IUD is the farthest away, 25–28 minutes for husbands and wives respectively. This ranking follows a pattern related to the need for resupply.

As might be expected, table 6.7 shows that travel time is greater in rural than urban areas. Rather unexpectedly women tend to estimate travel time as being slightly greater than men would in most cases. In most instances, perceived travel time does not vary systematically by education, but the most educated do perceive travel time as being less than the least educated would see it — except for those in urban areas with respect to IUDs. Perceived travel time does not vary by wife's work pattern nor systematically by husband's occupation.

Regional differentials show Cairo/Alexandria and other urban areas have estimated travel times of 16 minutes or less for pills, 26 or less for IUDs and 10 or less for condoms. The travel times are much greater in rural areas and there are fairly sharp Upper/Lower Egypt differences especially with respect to IUDs and condoms.

As with individual characteristics of education, wife's work pattern and husband's occupation, one does not observe large systematic variation in travel time across income per capita, expenditure per capita or income adjusted for wife's education. (See table 6.8.) One does find that in rural areas wives who work for others and their husbands perceive shorter travel time to all methods than couples where the wife doesn't work or is an own-account worker. In addition, those with piped water and electricity have closer access to all three methods of contraception than others.

The fact that one observes regional differentials, but not generally systematic individual differences in perceived travel time to obtain methods, is as one would expect: locational factors determine distance and travel time. Since water supply and electricity are also fairly location specific, it is not surprising that they would be related to access in terms of travel time.

6.4.3 Cost of contraception

In 1980, the family planning program provided pills at subsidized rates of 5 piasters per cycle through clinics and pharmacies. Condoms were also provided at subsidized rates through clinics and pharmacies. The IUD can either be bought at pharmacies and inserted by a private physician at a subsidized rate or inserted in government clinics.

The perceived costs of various methods reflect actual costs from both private and public facilities. Variations in perceived costs by background and socio-economic factors are shown in tables 6.9 and 6.10. The patterns here do not reflect earlier patterns. There are no major urban–rural differences in perceived costs, nor uniform patterns for educational differentials, although the more educated tend to report somewhat higher prices — perhaps because of greater reliance on private than public sources. Males tend to report higher prices than females, especially for IUD. Wife's work pattern shows no systematic relationship to perceived costs in urban areas, and in rural areas women who have only worked before marriage report higher costs than others. Husbands who are in professional and clerical occupations and their wives tend to report higher costs than others for pills and IUD.

The regional patterns vary by method. The pill is perceived as being cheapest in rural areas, but differences are small. The IUD is seen as cheapest by women in rural Lower Egypt and metropolitan areas, and more than

Table 6.7 Perceived travel time in minutes to obtain various methods by background variables

Method	Pill		IUD		Condom
	Wife	Husb.	Wife	Husb.	Husband
A Education					
Urban					
Illiterate: no school	15	13	22	26	10
Illiterate: some school	13	12	21	18	[15]
Read and write	12	11	22	20	9
Primary certificate	12	9	23	18	8
Secondary/university	11	9	24	20	8
Total	13	11	22	20	9
(N)	(904)	(889)	(819)	(685)	(518)
Rural					
Illiterate: no school	27	21	40	30	26
Illiterate: some school	18	19	34	[67]	[30]
Read and write	26	19	43	32	23
Primary certificate	22	20	41	26	20
Secondary/university	10	22	20	27	25
Total	24	21	38	31	24
(N)	(728)	(864)	(271)	(332)	(171)
Total					
Illiterate: no school	22	19	30	29	19
Illiterate: some school	16	16	26	36	20
Read and write	17	15	27	25	13
Primary certificate	15	14	26	21	12
Secondary/university	11	12	24	22	11
Total	18	16	28	25	13
B Wife's work pattern					
Urban					
Never worked	14	11	22	20	9
Before marriage only	15	13	22	14	7
Since marriage	12	8	23	22	8
Rural					
Never worked	24	20	41	33	25
Before marriage only	22	19	29	27	[27]
Since marriage	24	21	31	26	19
Total					
Never worked	19	16	28	25	14
Before marriage only	18	17	25	20	13
Since marriage	18	15	26	23	11
C Husband's occupation					
Total					
Professional	13	10	24	22	11
Clerical	17	13	27	18	11
Sales	17	12	25	16	11
Agricultural: self	25	23	43	38	33
Agricultural: others	24	21	32	32	29
Service	19	15	24	30	14
Manual	16	13	24	21	11
D Region					
Cairo/Alexandria	12	10	22	20	8
Lower Urban	16	12	24	20	10
Upper Urban	14	11	18	26	8
Lower Rural	23	20	34	26	20
Upper Rural	28	22	53	51	36
Total	18	16	28	25	13
(N)	(1555)	(1673)	(835)	(784)	(604)

NOTE: Brackets denote sample size ≤ 20.

Table 6.8 Perceived travel time in minutes to obtain various methods by economic conditions

Method	Pill		IUD		Condom
	Wife	Husb.	Wife	Husb.	Husband
A Per capita income					
Urban					
Lowest 20%	18	13	25	21	12
21–40	14	12	20	16	10
41–60	13	12	22	20	9
61–80	14	11	24	24	8
81+	11	8	22	20	8
Rural					
Lowest 20%	23	20	35	36	26
21–40	26	22	39	26	23
41–60	27	21	45	36	26
61–80	24	18	32	23	20
81+	20	21	35	35	27
Total					
Lowest 20%	21	19	30	31	21
21–40	20	17	27	21	15
41–60	20	17	32	28	15
61–80	18	14	26	24	11
81+	13	11	23	22	10
B Per capita expenditures					
Urban					
Lowest 20%	16	13	26	18	11
21–40	16	11	21	29	9
41–60	13	12	18	17	10
61–80	13	11	22	20	9
81+	12	9	24	20	8
Rural					
Lowest 20%	25	22	39	41	27
21–40	26	21	38	33	22
41–60	25	20	40	25	24
61–80	22	18	36	25	22
81+	17	21	31	34	26
Total					
Lowest 20%	22	20	28	34	22
21–40	23	18	33	30	15
41–60	19	16	30	21	14
61–80	17	14	28	22	13
81+	12	11	25	22	10
C Per capita income adjusted for wife's education					
Urban					
Lowest 20%	16	12	26	19	12
21–40	13	11	21	16	9
41–60	12	10	22	19	9
61–80	13	10	25	24	8
81+	12	8	21	18	8
Rural					
Lowest 20%	18	18	30	29	25
21–40	21	19	34	20	21
41–60	22	19	39	30	22
61–80	20	16	29	19	19
81+	16	20	34	34	28
Total					
Lowest 20%	18	16	29	28	21
21–40	17	14	26	18	14
41–60	17	14	31	25	13
61–80	16	12	26	22	11
81+	13	11	23	22	11

Table 6.8 (*cont*)

Method	Pill		IUD		Condom
	Wife	Husb.	Wife	Husb.	Husband
D Wife's employment status					
Urban					
Family/self	15	8	[26]	18	[7]
Others	11	8	23	22	8
Not working	14	11	22	20	9
Rural					
Family/self	25	22	33	28	23
Others	19	17	[25]	[20]	[14]
Not working	24	20	40	33	25
Total					
Family/self	23	20	32	26	19
Others	13	10	23	22	9
Not working	19	16	28	25	13
E Water sources					
Urban					
Piped inside	12	9	21	19	8
Piped outside	15	13	24	24	10
Pump/other	26	17	32	28	10
Rural					
Piped inside	17	13	27	24	15
Piped outside	22	19	35	26	22
Pump/other	28	24	43	41	34
Total					
Piped inside	13	10	22	20	9
Piped outside	19	17	29	25	15
Pump/other	28	24	44	40	33
F Electricity					
Urban					
Yes	13	10	22	20	8
No	21	19	24	[30]	[14]
Rural					
Yes	20	18	34	26	22
No	29	23	44	39	30
Total					
Yes	15	13	25	22	11
No	28	22	40	38	27

NOTE: Brackets denote sample size ≤ 20.

twice as expensive in rural Upper Egypt. The condom is perceived as being cheapest in rural Upper Egypt, and most expensive in urban Upper Egypt.

Table 6.10 shows that the perceived costs of contraception show no uniform relationship with per capita income or expenditure, or income adjusted for wife's education. There is a tendency, however, for the highest economic group to report higher costs than the lowest group, perhaps reflecting greater reliance on the private sector. Household use of piped water and electricity — both associated with higher income — are also associated with slightly higher perceived costs, but wife's work status shows no systematic relation to perceived cost.

The patterns of perceived costs seem to suggest that the poor have better perceived access to cheap contraceptives than those who are better educated and richer, but this may reflect the choice of outlet.

6.5 PAST USE OF CONTRACEPTIVES

Motivations to limit fertility, knowledge of and access to contraception are of interest to a study of determinants of contraceptive use. The relationship of motivation and access to use will be examined in later sections of this chapter. It is first necessary to explore the patterns and differentials in usage. In this section differentials in

Table 6.9 Perceived costs of various methods by background variables

Method	Pill (Piasters)		IUD (LE)		Condom (Piasters)
	Wife	Husb.	Wife	Husb.	Husband
A Education					
Urban					
Illiterate: no school	10	13	2	5	[10]
Illiterate: some school	11	13	2	[6]	[17]
Read and write	12	13	3	5	14
Primary certificate	11	14	4	7	13
Secondary/university	15	18	8	12	19
Total	12	15	4	8	16
(N)	(777)	(703)	(443)	(372)	(268)
Rural					
Illiterate: no school	11	10	4	7	17
Illiterate: some school	11	11	4	[6]	[29]
Read and write	14	12	2	8	24
Primary certificate	10	14	[5]	8	[13]
Secondary/university	15	14	[6]	9	15
Total	11	12	4	8	18
(N)	(633)	(720)	(196)	(231)	(101)
Total					
Illiterate: no school	11	11	3	6	14
Illiterate: some school	11	12	3	6	20
Read and write	13	12	3	6	17
Primary certificate	14	14	5	8	13
Secondary/university	16	17	8	11	18
Total	12	13	4	8	17
(N)	(1410)	(1423)	(639)	(603)	(369)
B Wife's work pattern					
Urban					
Never worked	12	15	3	8	16
Before marriage only	14	14	5	9	16
Since marriage	13	16	6	11	17
Rural					
Never worked	11	11	3	8	18
Before marriage only	12	11	6	[13]	[19]
Since marriage	11	12	5	5	18
Total					
Never worked	12	13	3	8	16
Before marriage only	13	13	5	11	[17]
Since marriage	12	14	5	8	17
C Husband's occupation					
Total					
Professional	14	16	7	11	18
Clerical	13	15	5	10	17
Sales	12	15	4	10	18
Agricultural: self	11	10	2	8	20
Agricultural: others	11	11	3	7	[20]
Service	11	13	4	6	12
Manual	12	14	3	7	15
D Region					
Cairo/Alexandria	12	15	3	8	15
Lower Urban	14	15	4	8	16
Upper Urban	12	14	5	12	24
Lower Rural	11	12	3	8	20
Upper Rural	12	10	7	8	13
Total	12	13	4	8	17
(N)	(1410)	(1423)	(639)	(603)	(369)

NOTE: Brackets denote sample size ≤ 20.

Table 6.10 Perceived costs of various methods by economic conditions

Method	Pill (Piasters)		IUD (LE)		Condom (Piasters)
	Wife	Husb.	Wife	Husb.	Husband
A Per capita income					
Urban					
Lowest 20%	11	13	4	4	[9]
21–40	11	13	2	6	13
41–60	13	14	3	7	19
61–80	11	14	3	7	15
81+	15	18	6	12	17
Rural					
Lowest 20%	12	12	3	8	18
21–40	10	12	7	7	19
41–60	9	11	3	5	[13]
61–80	12	11	3	9	[17]
81+	13	13	5	10	[24]
Total					
Lowest 20%	11	12	3	7	16
21–40	10	13	3	6	16
41–60	11	13	3	6	17
61–80	11	13	3	8	16
81+	15	17	6	12	17
B Per capita expenditures					
Urban					
Lowest 20%	10	13	3	4	[10]
21–40	11	12	2	5	[12]
41–60	12	14	2	6	15
61–80	12	15	3	7	17
81+	14	17	6	12	17
Rural					
Lowest 20%	12	12	3	7	18
21–40	10	11	5	8	17
41–60	10	11	3	6	[16]
61–80	11	12	4	6	18
81+	14	14	6	12	[21]
Total					
Lowest 20%	11	12	3	6	16
21–40	10	11	4	7	14
41–60	11	12	2	6	15
61–80	12	14	3	7	18
81+	14	17	6	12	17
C Per capita income adjusted for wife's education					
Urban					
Lowest 20%	12	14	5	6	9
21–40	12	14	3	7	13
41–60	13	15	4	8	19
61–80	12	15	4	7	15
81+	14	17	4	11	17
Rural					
Lowest 20%	12	13	3	9	18
21–40	10	13	7	8	19
41–60	10	13	3	6	13
61–80	12	11	4	9	17
81+	14	14	5	10	22
Total					
Lowest 20%	13	13	4	9	16
21–40	11	14	4	8	15
41–60	12	14	4	7	17
61–80	12	13	4	8	16
81+	14	16	5	11	17

Table continues

Table 6.10 (*cont*)

Method	Pill (Piasters)		IUD (LE)		Condom (Piasters)
	Wife	Husb.	Wife	Husb.	Husband
D Wife's employment status					
Urban					
Family/self	[17]	[15]	[3]	[8]	[17]
Others	14	16	7	11	17
Not working	12	15	3	8	16
Rural					
Family/self	11	12	7	4	15
Others	12	14	4	[7]	[25]
Not working	11	11	3	8	18
Total					
Family/self	12	12	5	5	15
Others	13	16	6	10	18
Not working	12	13	3	8	16
E Water sources					
Urban					
Piped inside	13	15	4	9	16
Piped outside	11	14	2	5	14
Pump/other	15	15	[2]	4	—
Rural					
Piped inside	13	13	5	9	18
Piped outside	11	11	3	9	18
Pump/other	11	11	4	6	18
Total					
Piped inside	13	15	5	9	17
Piped outside	11	12	3	7	16
Pump/other	11	12	3	6	18
F Electricity					
Urban					
Yes	12	15	4	9	16
No	13	12	3	[2]	[5]
Rural					
Yes	11	13	5	7	19
No	10	10	2	8	14
Total					
Yes	12	14	4	8	17
No	11	10	2	8	13

NOTE: Brackets denote sample size ≤ 20.

patterns of ever use of contraception will be explored, in the next section the patterns and differentials in current use will be examined.

6.5.1 General patterns

A large portion, slightly over 40 per cent of the men and women in the second-phase survey report that they have used efficient contraceptives at some time. This represents approximately two-thirds of those in urban areas and about a quarter in rural areas. As shown in table 6.11, the reported usage differs by wife's age. It is lowest for women under 25 where only about 20 per cent have ever used contraception. For those 25–34, approximately 50 per cent have used it and for those 35–45, slightly more have used contraception. For women over 45 a smaller proportion have had experience with the use of efficient contraception. This pattern varies slightly between urban and rural areas. In the former, ever use is marginally higher in the 25–34 year age group, while in rural areas it is higher in the next oldest group.

The overall differences in reported usage by husbands and wives are very small, but in some subgroups substantial differences between spouses exist in reported use. These differences could reflect either inaccurate knowledge of contraceptive use by the spouse within the present union, or use by one or the other spouse in a

Table 6.11 Per cent ever using contraceptives by background variables and age

Age	Under 25		25–34		35–44		45+		Total	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
A Education										
Urban										
Illiterate: no school	27	19	68	53	65	55	62	43	58	46
Illiterate: some school	37	47	73	[72]	71	[67]	68	[43]	64	60
Read and write	58	48	72	76	83	67	[73]	78	73	67
Primary certificate	41	25	79	81	74	79	[80]	[77]	69	70
Secondary/university	50	49	81	78	86	84	[75]	74	75	74
Total	38	39	74	72	72	69	67	64	66	64
(N)	181		359		286		98		924	
Rural										
Illiterate: no school	6	7	24	19	30	24	22	13	21	17
Illiterate: some school	14	13	35	22	48	27	17	[60]	26	22
Read and write	19	13	69	38	59	47	29	33	43	32
Primary certificate	[44]	24	[46]	58	[84]	[61]	0	0	53	43
Secondary/university	60	30	87	77	[100]	[92]	0	[33]	78	58
Total	11	13	31	32	38	35	28	21	26	26
(N)	379		454		320		102		1255	
Total										
Illiterate: no school	11	9	36	27	43	34	41	22	32	25
Illiterate: some school	20	23	54	40	59	43	45	[50]	44	35
Read and write	40	25	71	57	75	57	64	57	65	48
Primary certificate	42	24	69	70	78	73	[67]	[63]	65	58
Secondary/university	53	41	82	78	87	89	[75]	69	77	70
Total	20	21	50	50	54	51	47	42	43	42
(N)	560		813		606		200		2179	
B Wife's work pattern										
Urban										
Never worked	39	39	74	71	71	67	68	66	65	63
Before marriage only	[36]	[36]	77	77	[57]	[57]	[50]	[50]	61	61
Since marriage	[35]	[35]	72	75	81	83	62	54	71	71
Rural										
Never worked	11	12	29	32	41	37	24	18	26	26
Before marriage only	3	7	26	28	22	22	[20]	[20]	19	19
Since marriage	16	22	38	34	27	31	30	30	29	30
Total										
Never worked	21	21	49	49	55	51	48	43	43	42
Before marriage only	13	16	46	48	38	38	[57]	[29]	35	35
Since marriage	20	25	32	51	53	54	42	39	45	46
C Husband's occupation										
Total										
Professional	46	41	72	77	85	83	[79]	[68]	71	71
Clerical	32	40	83	74	84	77	[90]	[70]	68	64
Sales	29	36	40	40	63	57	[63]	[63]	47	47
Agricultural: Self	10	10	25	27	37	35	29	25	25	24
Agricultural: Others	4	6	21	20	27	21	15	7	17	15
Service	24	24	59	56	55	55	38	46	49	48
Manual	27	30	65	66	63	60	61	53	54	54
D Region										
Cairo/Alexandria	39	39	75	74	75	72	77	70	70	67
Lower Urban	42	45	75	77	77	78	52	52	64	67
Upper Urban	29	27	66	59	59	47	[46]	[55]	54	48
Lower Rural	16	20	40	43	47	47	35	30	35	36
Upper Rural	6	6	16	14	26	19	18	9	15	12
All Egypt	20	21	50	50	54	51	47	42	43	42

NOTE: Brackets denote sample size ≤ 20.

previous marriage or relationship. These differences between reported use by husbands and wives will be explored with respect to current use in a later section.

It is of interest to determine not only whether couples have ever used contraceptives, but the number of children the women had when they first used contraception. For all of Egypt, the average parity of first use by the second round sample was 3.1. For urban areas, women first used contraception after 2.7 births on average, while in rural areas contraception was first used only after one more child had been born.

The differentials in patterns of proportions who have ever used contraception and in the parity at first use are explored below.

6.5.2 Differentials in proportion who have ever used efficient methods of contraception

The differentials in the proportion reporting to have ever used the pill, IUD, condom, injection, sterilization or other scientific methods are reported in tables 6.11 and 6.12. These proportions are shown separately for reports by husbands and wives and by wife's age group.

The proportion reporting that they have ever used efficient contraceptives increases uniformly with education for males in urban and rural areas, and for females in rural areas. In urban areas, the most educated are less likely to have used contraception than women of slightly less education in all age groups except for those 35–44. The increase in usage is most dramatic across education groups in rural areas.

Table 6.12 Proportion ever using contraception by economic conditions and age

Age	Under 25		25–34		35–44		45+		Total	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
A Per capita income										
Urban										
Lowest 20%	[27]	[33]	65	60	66	59	[63]	[38]	59	54
21–40	35	32	69	66	70	66	[54]	[69]	61	59
41–60	34	38	81	81	75	72	[78]	[73]	70	69
61–80	49	47	78	78	70	70	68	80	69	69
81+	38	41	72	73	78	74	68	53	66	64
Rural										
Lowest 20%	13	14	31	39	32	33	21	15	26	26
21–40	12	13	21	24	36	31	[41]	[24]	23	22
41–60	5	9	33	37	44	39	[37]	[37]	26	28
61–80	10	11	33	28	51	43	[25]	[20]	28	24
81+	25	29	46	43	32	32	[8]	[0]	32	31
Total										
Lowest 20%	14	16	38	37	41	39	29	20	33	32
21–40	14	19	41	41	50	46	47	43	38	37
41–60	13	17	51	54	60	55	57	55	43	44
61–80	23	22	57	55	62	58	50	53	48	46
81+	34	37	66	66	66	63	52	39	57	55
B Per capita expenditures										
Urban										
Lowest 20%	24	24	67	62	68	59	[50]	[30]	32	29
21–40	22	26	76	82	61	65	[70]	[80]	37	39
41–60	37	37	70	63	78	72	[77]	[82]	40	39
61–80	51	49	80	78	78	74	61	68	50	49
81+	41	43	72	75	74	71	73	57	60	59
Rural										
Lowest 20%	12	12	28	28	32	28	35	24	25	23
21–40	11	15	33	36	38	37	[25]	[6]	28	29
41–60	6	10	27	26	48	43	20	32	24	25
61–80	11	11	25	28	42	39	26	16	24	23
81+	20	24	62	59	[40]	[40]	14	0	40	38
Total										
Lowest 20%	14	14	37	36	41	36	39	25	32	29
21–40	14	18	43	47	46	47	42	35	37	39
41–60	14	17	46	42	62	56	43	52	40	39
61–80	25	24	57	57	65	61	48	48	50	49
81+	36	38	70	72	68	66	62	46	60	59

Table 6.12 (*cont*)

Age	Under 25		25–34		35–44		45+		Total	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
C Per capita income adjusted for wife's education										
Urban										
Lowest 20%	41	45	71	69	73	69	71	44	68	65
21–40	43	40	74	75	77	75	61	74	69	70
41–60	45	47	85	87	83	82	83	76	77	78
61–80	54	47	80	82	76	78	71	79	74	76
81+	35	40	69	68	78	74	66	44	63	62
Rural										
Lowest 20%	29	26	61	62	66	63	18	11	56	55
21–40	28	25	52	56	68	61	42	20	54	52
41–60	22	22	63	67	74	66	36	33	56	57
61–80	25	22	56	52	79	69	23	17	54	50
81+	35	34	60	58	52	51	9	0	53	51
Total										
Lowest 20%	30	30	59	61	63	62	44	28	54	54
21–40	33	31	62	65	70	67	63	54	58	58
41–60	27	30	70	74	78	74	71	62	62	63
61–80	35	32	69	69	78	75	60	60	62	62
81+	36	39	64	64	69	66	55	36	59	57
D Wife's employment status										
Urban										
Family/self	[0]	[0]	[42]	[50]	[83]	[83]	[50]	[50]	57	61
Others	[40]	[40]	78	74	83	81	[64]	[55]	74	73
Not working	38	39	74	72	70	66	68	65	65	63
Rural										
Family/self	17	22	27	24	25	34	[26]	[26]	23	26
Others	[13]	[25]	59	53	[36]	[18]	[50]	[50]	47	42
Not working	10	11	29	31	40	36	27	18	26	25
Total										
Family/self	16	21	29	28	38	45	29	29	29	31
Others	30	35	71	70	72	66	[60]	[53]	65	63
Not working	20	21	50	49	54	50	48	43	43	41
E Water sources										
Urban										
Piped inside	47	50	80	79	81	77	77	73	74	73
Piped outside	29	28	59	59	60	56	[32]	[37]	50	49
Pump/other	19	14	56	56	[33]	[39]	[50]	[0]	36	34
Rural										
Piped inside	31	35	62	69	68	71	[40]	[20]	55	60
Piped outside	12	15	28	29	35	32	26	21	25	25
Pump/other	7	9	26	24	35	31	26	19	22	21
Total										
Piped inside	44	47	77	77	79	76	74	70	71	71
Piped outside	17	19	37	38	44	40	28	26	33	32
Pump/other	8	9	28	26	35	32	27	18	23	22
F Electricity										
Urban										
Yes	45	47	77	72	78	75	70	67	71	69
No	10	3	31	27	28	25	38	38	23	19
Rural										
Yes	21	20	45	50	52	51	26	22	38	39
No	3	8	19	17	25	21	27	18	17	15
Total										
Yes	32	33	65	67	69	66	55	52	58	57
No	4	7	20	18	26	21	29	21	17	16

NOTE: brackets denote sample size ≥ 20.

Wife's work pattern does not appear to be systematically related to ever usage at each age, but over all ages women who have worked since marriage and their husbands are more likely to report having used at some time an efficient contraceptive. Occupation patterns are as might be expected, with professionals reporting highest usage and those in agriculture the least.

Regional patterns of ever use vary somewhat by age. At all ages except for those over 45, urban Lower Egypt has the highest use followed by metropolitan areas. Urban Upper Egypt has the next highest proportion reporting ever use, followed predictably by rural Lower, then, far behind, rural Upper Egypt. Family size desires and desire for additional children indicated that motivation for limiting family size was quite similar between urban Upper Egypt and rural Lower Egypt. Data on proportion ever using efficient contraception, however, indicates that in rural Lower Egypt only about one-third report ever use, compared to about one-half in urban Upper Egypt. This difference between motivation and usage probably reflects differential access since, as noted above, those in rural Lower Egypt had longer traveling times to obtain contraceptives than those in urban Upper Egypt.

The higher the per capita income group, the more likely individuals are to have used contraceptives; the pattern, however, is not uniform for all age groups. The pattern is reversed among women over 45 in rural areas.

In both urban and rural areas there is a much higher probability that those who are in households with piped water and electricity have ever used contraceptives than for those without. For all age groups combined, women who work for others and their husbands are more likely to report they have used contraceptives than husbands and wives for couples where the wife is not working or working on own-account. These patterns do not persist, however, in every age group.

In sum, the relationships between ever use of contraceptives and education and income are in the expected direction, but are not as uniform as the relationship between income and education and fertility attitudes and contraceptive knowledge.

Table 6.13 Parity at first use by background variables

	Urban	Rural	Total
	Average parity	Average parity	Average parity
Wife's education			
Illiterate: no school	3.5	4.0	3.7
Illiterate: some school	3.0	4.1	3.5
Read and write	2.6	3.6	2.9
Primary certificate	2.2	[3.1]	2.4
Secondary/university	1.3	1.5	1.3
Total	2.7	3.8	3.1
Husband's education			
Illiterate: no school	3.6	4.1	3.9
Illiterate: some school	2.8	3.8	3.2
Read and write	3.1	4.1	3.5
Primary certificate	2.9	3.4	3.1
Secondary/university	1.8	2.5	2.0
Wife's work pattern			
Never worked	2.9	3.9	3.3
Before only	2.3	[3.9]	2.9
Since marriage	1.8	3.3	2.4
Husband's occupation			
Professional			2.1
Clerical			2.4
Sales			3.5
Agricultural — self-employed			4.3
Agricultural — employee			3.8
Services			3.4
Manual			3.0
Total region			
Cairo/Alexandria			2.6
Urban: Lower Egypt			2.8
Upper Egypt			2.9
Rural: Lower Egypt			3.6
Upper Egypt			4.3
All Egypt			3.1

6.5.3 Differentials in parity at first use

Parity at first use is an excellent measure of the attempt of couples to restrict family size. Tables 6.13 and 6.14 summarize the differentials. In urban areas, education of wife or husband has a clear inverse association. The higher the education, the smaller the family size at which couples initiate contraceptive use, and the difference between the least and most educated is an average of two children. (Slightly more for wife's education and slightly less for husband's education.)

In rural areas the pattern is not as uniform, and parity is slightly higher for those with some school or literacy than for those with no school. This irregular pattern was also observed with respect to children ever born. The difference between those wives with secondary and university education and those with no school is 2.5 children. For husband's education, the difference is much less.

Differences across husband's occupation and wife's work pattern are as might be expected. Regional differences are similar to those for children ever born, with women in metropolitan areas beginning contraception at the earliest parity and those in rural Upper Egypt at the highest. Metropolitan areas and urban areas are quite similar, while rural Lower Egypt is substantially higher by 0.7 children, and rural Upper Egypt higher still by another 0.7 children.

As shown in table 6.14, in urban areas per capita income and expenditure are inversely related to parity at first use, but the difference between top and bottom quintile is not as large as across education groups. In rural areas the inverse relationship is uniform for per capita expenditures, but not per capita income. If per capita income is adjusted for wife's education, uniform associations disappear in urban and rural areas, but the richest group does have a lower parity at first use than the poorest in both areas. Those with household amenities of piped water and electricity, as well as those in households where the wife works for others, began using contraceptives at earlier parity than others.

In summary, parity of first use of contraceptives has strong and uniform differentials with respect to most variables, the only exception being education particularly of husbands and per capita income in rural areas. In

Table 6.14 Parity at first use by economic conditions

	Urban	Rural	Total
	Average parity	Average parity	Average parity
Per capita income			
Lowest 20%	3.4	3.9	3.7
21–40	3.2	3.9	3.5
41–60	3.2	4.0	3.5
61–80	2.8	3.6	3.1
81+	1.8	2.5	1.9
Per capita expenditures			
Lowest 20%	3.5	4.2	3.9
21–40	3.4	4.0	3.7
41–60	3.2	3.6	3.3
61–80	3.0	3.4	3.1
81+	1.7	2.3	1.8
Per capita income adjusted for wife's education			
Lowest 20%	2.8	3.4	3.2
21–40	2.7	3.3	3.0
41–60	2.8	3.5	3.1
61–80	2.5	3.3	2.8
81+	2.2	2.8	2.3
Wife's employment status			
Self/family	[3.3]	3.5	3.5
Others	1.5	2.8	1.8
Not working	2.9	3.9	3.2
Water sources			
Piped inside	2.6	3.1	2.6
Piped outside	3.0	3.9	3.5
Pump/others	3.8	3.9	3.8
Electricity			
Yes	2.7	3.4	2.9
No	3.5	4.3	4.2

general, parity of first use is slightly below desired family size in each case.

6.6 CURRENT USE OF CONTRACEPTION

Whether couples have ever used contraceptives is a measure of their willingness and ability to do so; but current contraceptive use is relevant for determining current fertility, and it is current contraceptive use which is best explained by the measures of motivation, knowledge and access, as well as current economic circumstances as was discussed in chapter 1. Therefore, in this section considerable detailed analysis will be undertaken.

6.6.1 Husband-wife reporting of current contraceptive use

The second phase of the Egyptian Fertility survey is fairly unique in having data on usage reported by husbands that can be compared to that reported by wives. Some disagreement is to be expected between reports since the interviews of husbands and wives were conducted two months apart, but there is more disagreement between husband and wife reports than can be explained by differences in the timing of the surveys.

Table 6.15 summarizes the reported usage by husbands and wives in the survey for the entire country and by region. While the vast majority of husbands and wives agree on whether or not they are currently using an efficient contraceptive, disagreement is non-trivial and almost a quarter of the couples in urban Upper Egypt disagree on usage.

An examination of use by method shows that the major disagreement arises over use of the pill. Over 100 women claim they are using no contraception but their husbands are reporting them as pill users. Eighty-three women claim to be using the pill when their husbands claim they are not contracepting. These differences are probably too large to be accounted for by the time period between surveys, since only 318 couples agree that the pill is being used. There may be either genuine misunderstanding or deception taking place. It is difficult to reconcile the conflicting reports in a survey such as this; therefore, both husband and wife usage will be reported in these discussions.

6.6.2 Differentials in contraceptive use among the currently married, fecund, non-pregnant women

Analysis of education differentials in current contraceptive use as reported by husbands and wives both unadjusted and adjusted for age indicate that only in rural areas is there a uniform positive relationship between education and current usage. This is counter to the pattern of children ever born, which was more uniform for urban areas. The pattern for current use is similar, however, to the pattern for ever use of contraception. Usage differs greatly across education groups in rural areas, increasing by a factor of about six for wives education and four for husbands.

Wife's work pattern shows only small differences, but husband's occupation shows substantial differentials. Wives of professional men report usage more than three times that of wives of agricultural workers.

The regions show four distinct groups. Metropolitan and urban Lower Egypt have reported usage over 50 per cent. Urban Upper Egypt has reported usage of around 40 per cent. The usage in rural Lower Egypt is substantially lower, but the reported usage here differs substantially between husbands and wives. In this region a large proportion of the disagreement over pill use arises. In 82 couples both spouses report pill use, but an additional 53 husbands report that their wife is on the pill when the wife does not report it. In 27 couples the wife reports pill use, but the husband says no method is being used. Rural Upper Egypt has by far the lowest use reported by both husband and wife.

While there are not generally uniform relationships between income and expenditure group and current usage, those in the highest groups report higher use than those in the lowest. (See table 6.17.) This pattern persists when income is adjusted for wife's education, but the differences become smaller. In rural areas usage is higher, the higher the per capita income quintile, but the dif-

Table 6.15 Proportion reporting use of efficient methods by husband and wife

Region	Neither reports use	Wife only reports use	Husband only reports use	Both report use
Cairo/Alexandria	34	11	8	48
Urban Lower Egypt	34	7	10	49
Urban Upper Egypt	47	12	12	30
Rural Lower Egypt	62	6	11	19
Rural Upper Egypt	88	3	2	7
All Egypt	57	7	8	28

Table 6.16 Proportion reporting current use of efficient contraception among currently married, fecund, non-pregnant women and their husbands by background variables

	Urban				Rural				Total			
	Wife		Husband		Wife		Husband		Wife		Husband	
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
Education												
Illiterate: no school	44	44	39	43	13	13	14	13	22	22	20	20
Illiterate: some school	49	48	53	54	21	22	16	16	33	34	28	29
Read and write	62	62	56	57	43	42	25	26	55	54	40	40
Primary certificate	57	61	53	54	46	46	41	43	54	54	48	49
Secondary/university	63	57	57	54	74	79	46	47	63	60	55	51
Total	52		52		18		21		33		35	
Wife's work pattern												
Never worked	51	51	51	52	19	19	21	21	33	33	34	35
Before marriage only	49	48	53	51	11	14	13	12	26	27	28	28
Since marriage	58	54	57	54	19	18	25	24	35	33	38	37
Husband's occupation												
Professional									55	53	56	53
Clerical									51	52	45	46
Sales									38	37	40	39
Agricultural: self									18	17	19	19
Agricultural: others									10	11	10	11
Services									37	36	40	38
Manual									43	43	46	46
Region												
Cairo/Alexandria									56	53	53	50
Urban Lower									53	52	57	57
Urban Upper									39	39	40	38
Rural Lower									25	26	30	31
Rural Upper									9	10	8	9
All Egypt									33		35	

ferentials are not large. For wives in urban areas, usage increases with per capita expenditure quintile. Wives who work for others and their husbands report higher usage than other couples in most instances. Differentials are large across households with and without piped water inside and electricity.

Thus, differentials in current contraceptive use across background variables and current economic conditions are not as uniform as differences in fertility attitudes or knowledge of contraceptives across these groups. This probably arises because of the many factors determining use: motivation, knowledge and access. In particular, it was observed in the preceding chapter that motivation as measured by the desire to have or not to have additional children was not uniformly related to background factors and economic conditions. In that case as well the lack of association arose because motivation resulted from both fertility preferences and prior fertility, which had different associations with background and economic circumstance. Therefore, in the next section the relationship between motivation to use contraceptives as well as access to contraceptives and contraceptive use will be examined.

6.7 MOTIVATION AND CURRENT CONTRACEPTIVE USE

The motivation to use contraceptives can either be inferred from the existing number of children a couple has or by their stated desire to cease childbearing.

6.7.1 Prior fertility and contraceptive use

Figure 6.4 shows the relationship between number of living children and current contraceptive use in urban and rural areas. Table 6.18 shows these differentials by region. There is a tendency for usage to increase uniformly from no living children or sons to two living children or sons for the country as a whole and for most regions. At higher numbers of living children or living sons, the pattern is irregular; perhaps reflecting that those with large families not only want larger families, but are not predisposed to use contraception even if they wish to terminate childbearing, either because of lack of knowledge or access.

For the number of living daughters one finds that couples are more likely to use contraception if they have

Table 6.17 Proportion reporting current use of efficient method among currently married, fecund, non-pregnant women by current economic conditions

	Urban				Rural				Total			
	Wife		Husband		Wife		Husband		Wife		Husband	
	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.	Unadj.	Adj.
Per capita income												
Lowest 20%	40	38	36	33	16	15	19	18	22	21	23	22
21–40	44	45	45	45	16	17	16	17	27	28	27	28
41–60	57	56	57	57	18	19	23	23	34	35	37	38
61–80	52	53	57	58	19	21	23	24	36	37	40	4
81+	58	60	55	56	29	29	33	33	50	50	49	49
Per capita expenditures												
Lowest 20%	38	37	29	29	16	15	16	16	21	20	19	19
21–40	45	44	55	55	17	17	23	22	25	25	32	32
41–60	54	55	51	51	19	21	22	23	33	34	33	34
61–80	57	55	58	58	17	18	21	22	39	39	42	42
81+	57	58	56	56	34	32	37	35	52	52	52	51
Per capita income adjusted for wife's education												
Lowest 20%	47	46	43	42	42	42	46	46	39	38	40	39
21–40	49	51	51	52	43	44	44	45	43	44	44	45
41–60	62	62	63	63	43	44	50	50	49	50	53	53
61–80	55	55	62	62	42	43	47	48	48	48	53	53
81+	57	57	53	53	46	46	50	49	52	51	50	49
Wife's employment status												
Family/self	50	45	41	38	12	13	22	23	18	19	25	26
Others	59	55	60	58	38	27	31	22	52	45	51	45
Not working	51	51	51	51	18	18	20	21	33	33	34	35
Water supply												
Piped inside	59	58	59	58	45	42	56	51	57	55	58	56
Piped outside	39	40	38	39	17	17	21	22	24	24	27	27
Pump/other	26	30	30	39	14	15	14	14	15	16	16	16
Electricity												
Yes	56	56	56	55	29	29	33	34	46	54	47	46
No	13	15	16	20	9	9	11	11	10	10	11	12

no living daughters than if they have no living sons. This is a clear reflection of son preference. However, at other numbers of living sons or daughters usage rates are not dissimilar. This perhaps reflects that the son preference is not as strong as in many countries since on average couples want only 60 per cent of their children to be male as compared to the 75 per cent found in some societies.

6.7.2 Desire for additional children and current contraceptive use

Motivation can be measured by fertility attitudes as well as inferred from number of living offspring. Motivation to limit family size can be either deduced by comparing desired family size with number of living children, or can be measured more directly by examining responses to the question whether additional children were desired. There are more couples for whom one can calculate the differences between desired and living children than for whom information is available on whether more children were wanted. This is a result of more missing data on additional children as well as the skip pattern in the questionnaire, which — for the question on the desire for additional children — eliminated those who had never had children and those in which the wife is currently pregnant, as well as those who could not have additional children.

As shown in table 6.19, reported usage varies depending on how motivation is measured. For Egypt as a whole, the proportion using efficient contraceptives among those couples in which neither husband nor wife wants additional children by either measure is over 50 per cent. Husbands report somewhat higher usage than wives in this group. Usage also tends to be higher when the question whether additional children are wanted is used, than when desired family size and number of living children are compared. Usage among this group varies by region, ie about two-thirds in metropolitan areas and urban Lower Egypt, and one-third in rural Upper Egypt (somewhat higher by the second measure).

Among those couples where both spouses want additional children, the usage rate is about 13 per cent for

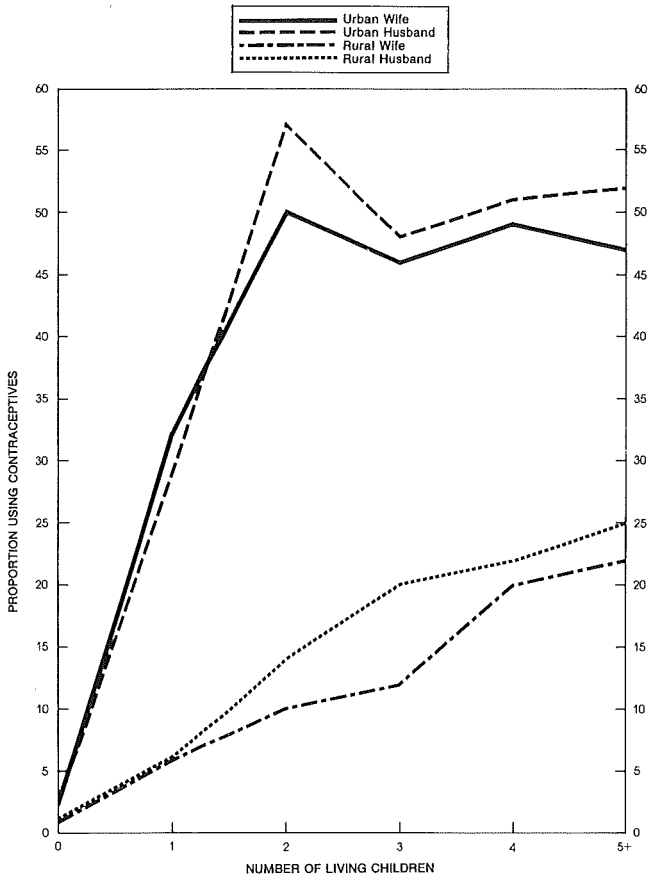

Figure 6.4 Contraceptive use for husband and wife by number of living children

men and women for both measures of the desire to continue childbearing. Usage in this group reflects use of contraception for childspacing and differs dramatically by region. In the Cairo/Alexandria, urban Lower Egypt group, it ranges between 25 and 38 per cent, depending on the measure used for desire to continue child bearing. For rural Upper Egypt it is 2–3 per cent. It is interesting to note that the usage in the most developed areas among couples who both want additional children is as high as it is in the least developed area among those couples where neither husband nor wife wants additional children.

In those cases where the husband and wife disagree about whether they want additional children, for the country as a whole a couple is more likely to report contraceptive use by husband and wife if the wife wants no more children and her husband disagrees than if the husband wants no more children and the wife disagrees. This is counter to one's expectations about male dominance of the family.

If one looks more carefully, however, the pattern is more complicated. The higher usage where only the wife and not the husband wishes to terminate childbearing is an urban phenomena. By either measure, for men and women in metropolitan and urban areas combined usage is higher when the wife alone wishes to terminate childbearing than when the husband alone does. In rural

Table 6.18 Proportion reporting current contraceptive use by number of living offspring and region

Region	Cairo/ Alexandria		Urban Lower		Urban Upper		Rural Lower		Rural Upper		Total	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
No. of living children												
0	[3]	[3]	[0]	[0]	[20]	[0]	[2]	[4]	[0]	[0]	[2]	[2]
1	48	[41]	[46]	[39]	[31]	[19]	[13]	[12]	[3]	[3]	24	20
2	67	68	[53]	71	[50]	[38]	[20]	30	[5]	[5]	36	41
3	66	56	[48]	58	[39]	[50]	24	33	[3]	[7]	34	37
4	61	56	[64]	[68]	[52]	[57]	35	39	[15]	[15]	43	43
5+	58	59	[66]	67	[33]	[40]	33	38	[21]	[16]	40	42
No. of living sons												
0	32	29	[18]	[31]	[33]	[17]	[12]	[16]	[1]	[2]	15	16
1	59	59	50	[50]	[29]	[29]	16	24	[4]	[4]	29	32
2	59	55	67	72	[64]	[61]	29	38	[11]	[11]	41	43
3	70	67	65	74	[42]	[53]	34	38	[22]	[20]	43	47
4	[66]	[59]	[71]	[71]	[20]	[40]	[46]	[46]	[25]	[21]	47	46
5+	[60]	[50]	[63]	56	[25]	[35]	[42]	[39]	[17]	[8]	39	34
No. of living daughters												
0	44	36	[37]	[36]	[42]	[31]	[13]	[13]	[4]	[3]	23	20
1	61	58	62	60	[44]	[33]	27	34	[11]	[8]	36	36
2	66	63	55	74	[35]	[61]	34	37	[8]	[13]	40	46
3	50	57	[50]	63	[42]	[32]	[21]	29	[8]	[6]	31	36
4	[50]	[55]	[82]	[73]	[45]	[55]	[31]	[38]	[22]	[22]	39	43
5+	[67]	[53]	[50]	[25]	—	—	[32]	[45]	[25]	[25]	36	38

NOTE: Brackets denote sample size ≤20.

Table 6.19 Proportion of wives and husbands reporting current contraceptive use by two measures of desire to continue or terminate childbearing

	Both want no more		Husband no more /wife more		Wife no more /husband more		Both want[a] more	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
Cairo/Alexandria	67	65	46	44	64	58	33	30
Urban Lower	66	70	43	30	69	[88]	25	[34]
Urban Upper	47	57	[40]	[27]	[63]	[63]	[22]	[14]
Rural Lower	37	47	[21]	[27]	[26]	[23]	[10]	12
Rural Upper	33	30	[4]	[6]	[12]	[8]	[3]	[2]
All Egypt	52	56	26	24	41	39	13	13
(N)	(679)		(224)		(159)		(563)	
	Both want no more		Wife more		Husband more		Both want[b] more	
	Wife	Husb.	Wife	Husb.	Wife	Husb.	Wife	Husb.
Cairo/Alexandria	71	75	[61]	[64]	[60]	[50]	[38]	[36]
Urban Lower	70	80	[57]	[57]	[69]	[85]	[29]	[35]
Urban Upper	57	66	[43]	29	[71]	[71]	[15]	[11]
Rural Lower	43	55	[23]	[44]	[23]	[26]	[9]	[14]
Rural Upper	39	36	[10]	[10]	[5]	[5]	[2]	[3]
All Egypt	57	64	32	38	50	41	13	14
(N)	(658)		(133)		(105)		(374)	

[a]Calculated by comparing desired family size with number of living children. If desired family size equals or is less than number of living children, an individual is classified as wanting no more children.
[b]Based on individual responses on whether or not they want an additional child.

NOTE: Brackets denote sample size ≤ 20.

areas when the husband alone wishes to terminate childbearing, the reported usage by husbands and wives differs. Particularly using the questions on whether more children are wanted, one finds that where husbands alone wish to terminate child bearing, 17 per cent of the wives but 27 per cent of the husbands report that contraceptives are being used. Where the wife alone wishes to terminate child bearing, 17 per cent of the wives and 18 per cent of the husbands report using contraceptives.

Therefore, in rural areas a perception of male dominance on the part of the males exists, which may not be realistic given that women in fact have control over contraceptives. It is interesting that where the husbands want more children the wives do not report higher usage than their husbands.

Discrepancies between husband and wife reported use of contraception are not limited to cases where they disagree on whether or not they want additional children. In both urban and rural areas when neither husband nor wife wants an additional child, husbands report usage rates of 7 points higher than the wife. This reflects, at a minimum, a lack of understanding of the question. A more serious problem might be lack of communication between spouses about contraception and lack of shared responsibility. This point needs to be more fully explored in later analysis.

6.8 CONTRACEPTIVE USE AND ACCESS

It is expected that access to contraception might be a major determinant of contraceptive use. Most family planning policies assume that if access is increased, usage will increase. The major differential in access can be expected to be in travel time since prices are expected to be uniform across regions and individuals. Table 6.20 summarizes the usage of pills and IUD by travel time to the method for those who know of a location.

As shown in table 6.20, usage of the pill conforms to expectations: the greater the travel time, the lower the usage. In urban areas the decrease in usage is greatest between less than 15 minutes and more than 15. In rural areas, the pattern is the same for husbands; but for wives, usage only decreases substantially at travel times in excess of 30 minutes.

For IUD, one finds rather unexpectedly that usage is higher in urban and rural areas when travel time is more than 15 minutes than when it is less. This finding is counter-intuitive. In general, one would expect, however, that distance would have less effect on IUD use than on pill use since resupply is unnecessary. Therefore, it may be that, if IUD and pill are located at the same place, those who must travel for longer periods select the IUD — which would involve fewer problems of resupply. To

Table 6.20 Proportion using method X by travel time (in minutes) to services

Method	Urban					Rural					Total				
	Doesn't know	<15	15–30	30+	Total	Doesn't know	<15	15–30	30+	Total	Doesn't know	<15	15–30	30+	Total
Total															
Pills															
Wife's report	[3]	37	18	[6]	30	[2]	19	17	[9]	11	[2]	30	18	[8]	19
Husband's report	[3]	37	21	[20]	32	[0]	25	15	[15]	14	[1]	32	16	[15]	22
IUD															
Wife's report	[0]	9	13	[24]	7	[0]	[6]	[9]	[9]	2	[0]	8	12	[14]	4
Husband's report	[0]	11	21	[16]	7	[0]	[4]	[5]	[12]	2	[0]	9	11	[15]	4
B Those who want additional children															
Pills															
Wife's report	[2]	28	[4]	[17]	19	[1]	[11]	[6]	[6]	5	[1]	19	[6]	[7]	9
Husband's report	[3]	35	[14]	[0]	29	[0]	16	[8]	[10]	8	[1]	26	[9]	[10]	15
IUD															
Wife's report	[0]	[3]	[11]	[8]	[3]	[0]	[0]	[3]	[0]	[0]	[0]	[2]	[8]	[2]	[1]
Husband's report	[0]	[11]	[14]	[30]	[6]	[0]	[3]	[0]	[0]	[1]	[0]	[8]	[5]	[10]	[2]
C Those who don't want additional children															
Pills															
Wife's report	[8]	46	[29]	[0]	42	[6]	29	27	[15]	21	[6]	41	28	[11]	31
Husband's report	[12]	55	[33]	[40]	51	[0]	50	34	[32]	55	[3]	53	34	[33]	44
IUD															
Wife's report	[0]	13	[16]	[31]	10	[0]	[9]	[13]	[18]	4	[0]	12	15	[24]	7
Husband's report	[0]	15	[28]	[15]	11	[0]	[6]	[9]	[25]	[4]	[0]	13	18	[21]	8

NOTE: Brackets denote sample size ≤ 20.

check the possible validity of this, usage rates for IUD were compared to travel times to get the pill. In both urban and rural areas, usage of the IUD was higher when travel time to the pill was 15–30 minutes than when it was less than 15 minutes. But the number of IUD users is so low that these patterns cannot be considered definitive, and future examination of usage and access will have to be done in multivariate analysis. When the sample is split into those who want additional children (spacers) and those who do not (terminators), the relationships between usage and access persist.

6.9 SUMMARY AND CONCLUSIONS

Knowledge of and access to contraceptives are essential if motivated couples are going to limit their fertility. The preceding sections documented husband's and wife's knowledge of various methods and whether they knew a source of supply, the perceived travel time to that source, and the costs of methods from that source. The potential constraints on the use of the pill, IUD and condom differ.

The pill is almost as universally known as a source of supply: 76 per cent of all wives and 77 per cent of all husbands knew of a source of supply for pills, and the average estimated travel time was estimated at 16 minutes for husbands and 18 minutes for wives. This does not mean that pockets of much lower access do not exist; in particular, rural Upper Egypt has much lower access than other areas.

Knowledge of the location of supply for IUDs is much less than for pills. Overall in Egypt only 41 per cent of all wives and 38 per cent of all husbands know of a source, and the average travel time is also higher than for the pill — 28–25 minutes.

The major constraint on condom use among the motivated is more likely to be knowledge than access. Only about one-third of men and women knew about the condom, and overall 24 per cent of all men knew a source of supply. Those who did know of the source of supply perceived access within only 13 minutes on average (36 minutes in rural Upper Egypt) and cost fairly cheap at only 17 piasters.

Forty per cent of the men and women in the survey have reported using contraceptives at some time, but husbands and wives do not always agree on whether or not they have used or are currently using contraceptives. The socio-economic differentials in ever use of contraception are not uniform, and the richest and best educated are not necessarily the most likely to have ever used contraceptives, but regional patterns are even sharper for ever-use of contraceptives than for motivation to terminate childbearing or knowledge of and access to pills and IUDs.

While ever-use of contraception does not have consistently strong differentials across economic and background characteristics, parity of first use does. The average parity of first use, which is 3.1 for all Egypt (2.7 in urban areas and 3.7 in rural), has perhaps the strongest and most uniform differentials. Parity is inversely related to education (in urban areas), occupation, income and expenditures per capita. The only exception is that in rural areas education and per capita income at low levels have no systematic impact on parity. This is similar to the relationship between education and children ever born in rural areas.

Current use of efficient contraception is reported by 33 per cent of the wives and 35 per cent of the husbands. Over 50 per cent of those in Cairo/Alexandria and urban Lower Egypt report use, while 10 per cent or less do so in rural Upper Egypt.

Current use of contraception varies strongly not only by region, but also by motivation — whether measured by the number of living sons or children or by stated desire for additional children. If both husband and wife wish to terminate childbearing, over 50 per cent of the husbands and wives report that they are currently using contraception, while only 13 per cent of those couples report current use of contraceptives when both want to continue childbearing. Usage of contraceptives for termination or spacing, however, varies greatly by region, and use for spacing in the most developed areas equals use for terminations in rural Upper Egypt.

Access to contraception measured by the travel time to services has less association with use than does motivation, but, particularly for pill use, one finds usage drops with increased travel time from less than 15 to more than 15 minutes. This pattern persists when the sample is split on the basis of motivation.

There are differences between husband's and wife's reported use of contraception that are too large to be attributed to the two-month time period between the two phases of the survey. Whether this reflects misunderstanding of the question or misinformation on the part of the husband with respect to his wife's use of the pill is unclear. This is a point which requires further exploration.

SUMMARY AND POLICY CONCLUSION

7.1 INTRODUCTION

The preceding chapters of this volume and volume II have documented substantially different patterns of fertility attitudes and behavior and contraceptive knowledge, access and use in various regional and socio-economic groups in Egypt. In this volume an attempt has been made to determine how fertility attitudes and preferences as well as contraceptive knowledge and perceived access of husbands and wives differ across regions and socio-economic groups and how these differences may explain differential contraceptive use — one, but only one, of the major determinants of fertility.

This summary will review the economic circumstances of the households in the second-phase sample. It will then summarize the regional and socio-economic differences in fertility. A review of how the fertility attitudes and preferences of husbands and wives differ by region and socio-economic groups will follow. Finally, differences in knowledge, perceived access and use of efficient contraceptives as reported by husbands and wives will be reviewed. In each case the summary includes only those variables which showed important variation. The review will be further simplified by focusing only on the socio-economic groups defined by the education of husbands and wives and the family per capita income.

The evidence reviewed suggests that certain policies may be more or less timely and effective in reducing fertility in various parts of Egypt. The policy implications of these findings will be reviewed in the last section of this chapter.

7.2 THE LIVING STANDARDS OF THE SAMPLE HOUSEHOLDS

The households in the second-phase sample show substantial differentials in income, expenditures, and other measures of household well-being such as ownership of consumer durables, and household amenities such as piped water and electricity. These measures of welfare differ dramatically across regions and by household characteristics such as family size and education of household head.

It is difficult to have complete confidence in comparisons of income and expenditures across regions for two reasons. First, there may be a greater tendency for income in urban or rural areas to be under-reported. In urban areas incomes from second jobs and financial assets may be under-reported, while in rural areas income in kind may be under-reported. Secondly, the prices paid by individuals in various regions probably differ substantially due to both market factors and the different degrees of subsidization or to the degree to which price controls are enforced. It is difficult to assess the importance of these factors. It seems unquestionable, however, that on all measures metropolitan areas are the richest, followed by urban Lower Egypt, which is closely followed by urban Upper Egypt. Given these reservations, however, it is still possible to conclude that the rural areas are far poorer than urban metropolitan areas and rural Upper Egypt is the poorest. Per capita incomes and per capita expenditures in rural Upper Egypt appear to be less than half of those in the metropolitan areas. This differential in well-being is also reflected by the fact that the proportion of children who have died is twice as high in rural Upper Egypt than in Metropolitan areas.

Some part of the regional differences in income and expenditures per capita arises from differences between regions in the distribution of household size and education of household head, the household characteristics most closely associated with income per capita. The evidence shows, however, that within regions as well as for the country as a whole, per capita income of households decreases rapidly with increase in family size and increases with the level of education of the household head.

For Egypt as a whole and in metropolitan areas and Lower Egypt, households of size 2 have per capita incomes three times greater than households of size 10. In Upper Egypt, large families are somewhat less disadvantaged relative to small ones, and households of size 2 have only a little more than twice the per capita income of households of size 10.

Education of household heads has a substantial effect on household per capita income, but the effect is not completely uniform at the lowest levels of education, and those with incomplete primary school or primary certi-

ficates earn less in some instances than those with less education. In this sample of households interviewed in 1980, the advantages to secondary and university education are substantial in all regions but greatest in the metropolitan areas and least in rural Upper Egypt, perhaps because it is professionals at the beginning of their career who go to rural Upper Egypt.

The sources of income also differ substantially by region, household size, and education of head. Income from employment for others contributes the majority of income to households in urban and metropolitan areas, to households smaller than size 6, and to households where the head has at least a primary certificate.

Own-account agriculture never contributes more than 47 per cent to income in any group but is, of course, most important in rural areas (41–42 per cent), in very large families and in households headed by illiterates (34 per cent). Other own-account work has highly variable patterns, but overall it contributes 19 per cent to household incomes, much more in urban areas outside Cairo and Alexandria and much less in rural areas. Remittances contribute 7 per cent to income, but again the pattern is highly variable. Income from rent, financial assets and pensions contribute only 1 per cent to household income, but this source may well have been underestimated as is often the case in sample surveys.

These patterns are determined by patterns of labor participation and renumeration to labor in employment and own-account work. While these patterns are of general interest and are described in detail in chapter 3, it is primarily the labor supply of women and children which is relevant for the analysis of fertility.

Children in this survey show low rates of labor participation and small contributions to the hours worked, either in employment for others or own-account work. Only 3 per cent of the males and 4 per cent of the females 6–9 years old are reported to have worked at any time in 1979. For those 10–14 years of age, the figures are 20 and 5 per cent respectively. The work of children 6–14 contributes only 5 per cent of the hours worked in own-account agriculture, 2 per cent in other own-account work and 4 per cent in employment for others. The economic contribution of these hours is even less given the low productivity of child labor. While these figures may well be underestimated because child labor is sporadic and may slip the mind of respondents, the degree of under-reporting for child labor would have to be extremely high to make a contribution of even 20 per cent to household income. The value of time contributed to household work by children cannot be assessed in a general survey such as this.

The statistical relationship between female labor participation and fertility differs between urban and rural areas. In urban areas women are less likely to work, the more children they have up to four. Women with five or more children in urban areas are slightly more likely to work than those with four children. In rural areas, however, there is a tendency for women to be more likely to work the more children they have up to four while those with five or more children are less likely to work than those with four. More research clearly needs to be done on the causal significance of these findings.

In summary then, the statistically most important relationship between economic factors and previous fertility appears to be the effect of large family size on income and expenditures per capita and thus on well-being. It may well be that current levels of wellbeing and income per capita may affect fertility attitudes and preferences, contraceptive knowledge, access, and use in ways which determine current and future fertility. These relationships were explored in detail in chapters 5 and 6 and will be summarized in this chapter. In the next section, however, it is necessary to summarize first the differentials in various dimensions of fertility.

7.3 REGIONAL PATTERNS AND SOCIO-ECONOMIC DIFFERENCES IN FERTILITY

Regional fertility patterns differ depending on what measure of fertility is used as shown in Table 7.1. On all measures, however, Cairo and Alexandria have the lowest fertility and rural Upper Egypt the highest. For cumulative fertility, urban Lower Egypt has the second lowest fertility, followed by urban Upper Egypt, rural Lower Egypt, and rural Upper Egypt. Current fertility measured by children born in the last five years are lowest and nearly identical in the metropolitan areas and urban Lower Egypt. Rural Lower Egypt is identical to urban Upper Egypt for fertility in the last five years.

These regional patterns result in part from differences in the socio-economic compositions of households in the regions and in part from cultural and community factors such as contraceptive access. At this point, the regional and socio-economic factors cannot be separated, but socio-economic differentials were examined separately for urban and rural areas. Table 7.2 shows the differences in various measures of fertility across education and income group in urban and rural areas.

As is generally expected, the number of children ever born and children born in the last five years decrease uniformly with increases in husband's and wife's education and per capita income in urban areas. In addition, the

Table 7.1 Regional patterns of fertility

Region	Children ever born		Children born last five years		Total fertility Rate[a]	Proportion of children surviving	
	Unadj.	Adj.	Unadj.	Adj.		Unadj.	Adj.
Cairo and Alexandria	4.0	3.7	0.9	1.0	3.84	84	85
Lower Egypt — urban	4.0	4.0	1.0	1.0	4.29	86	86
Upper Egypt — urban	4.6	4.4	1.2	1.2	5.87	83	83
Lower Egypt — rural	4.5	4.6	1.2	1.2	6.00	80	81
Upper Egypt — rural	4.5	4.8	1.3	1.3	6.32	71	70
All Egypt	4.3		1.2		5.27	80	

[a]For the five years before the survey.

Source: Tables 4.1, 4.3, 4.5, and 4.6

Table 7.2 Relationship between fertility and development as measured by differences between the highest and lowest groups on each variable

	Education		Per capita income	Per capita income adjusted
	Wife	Husband		
Children ever born				
Urban				
Unadjusted	−2.9 (58)	−2.4 (46)	−3.1 (55)	−2.1*(44)
Adjusted	−2.7 (55)	−2.1 (42)	−2.7 (51)	−2.0 (44)
Rural				
Unadjusted	−2.3*(51)	−1.6*(34)	−1.4 (29)	−1.2 (27)
Adjusted	−2.2*(49)	−1.1*(34)	−1.3*(28)	−1.4 (31)
Children born in the last five years				
Urban				
Unadjusted	−.1*(10)	−.2*(18)	−.7 (50)	−.9 (60)
Adjusted	−.4 (36)	−.4 (33)	−.6 (46)	−.7 (44)
Rural				
Unadjusted	+.2 (15)	+.1* (8)	−.5*(36)	−.8 (44)
Adjusted	+.2*(15)	−.2*(15)	−.4 (29)	−.5 (31)
Total fertility rate			−2.3 (39)	
Proportion of children surviving				
Urban				
Unadjusted	9 (11)	8 (10)	2* (2)	−2* (2)
Adjusted	7* (9)	6 (7)	3* (3)	−1* (1)
Rural				
Unadjusted	15 (20)	14*(18)	−6* (8)	−10*(11)
Adjusted	14 (18)	7* (8)	−6* (8)	−8* (9)

*Pattern is irregular.

Source: Tables 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, and 4.7

differences across income groups equal or exceed those across education groups — perhaps because income's effect on fertility is reinforced by the effect of fertility on per capita income mentioned previously.

In rural areas, differences in fertility across education groups are not as generally expected. The number of children ever born to those with small amounts of schooling is higher than for those without school as expected, however, there are very large and persistent differences between the least educated and the most educated, and these are much larger for wife's education than husband's education. The relationship between per capita income and children ever born in rural areas is very similar to that for husband's education. Patterns such as this have been found in the rural areas of many other developing countries.

In rural areas, the relationship between children born in the last five years and education is also unexpected.

Wives with secondary education or above have had more children in the last five years than uneducated women, even adjusting for age. This unusual pattern may arise because of the fact that educated women marry later. Adjustment for marital duration rather than age eliminates most of this irregularity. The relationship between husband's education and children born in the last five years is not uniform but generally the more educated the man the fewer children his wife has had in the last five years. Per capita income is uniformly inversely related to children born in the last five years.

The inverse relationship between per capita income and cumulative and current fertility persists when wife's education is controlled in both urban and rural areas. These patterns in actual fertility are not easy to interpret causally given that current per capita income is affected by previous fertility. However, the next sections should provide some insight into how current income (as well as education) might affect fertility through its effect on fertility attitudes and preferences, and contraceptive knowledge and access.

7.4 FERTILITY ATTITUDES AND PREFERENCES

7.4.1 Perceived costs and benefits of children

The attitudes of husbands and wives with respect to the costs and benefits of children are undoubtedly important in determining family size preference. The evidence in chapter 5 indicates that while there are some urban–rural and male–female differences in the perceived short-term benefits of children as measured by the age at which children become useful around the house or in work, one does not observe that men and women who think children are useful at younger ages want more children on average than those who think children become useful at later ages. This lack of importance of short-term benefits of children for family size preferences is consistent with the very low employment rates observed for children in chapter 3.

The long-term benefits of children as measured by parental expectation for old-age support are much more closely related to family size preferences, and show strong regional and socio-economic differentials as shown in tables 7.3 and 7.4. Regional differences in expectations to live with children are sharp, particularly for women, and rural women are much more likely than their husbands to expect to live with their children when they are old. Expectations for financial support show somewhat different variations by region and sex, but over half of the husbands and wives in Egypt expect financial support in their old age from children.

Although the patterns are not completely uniform, the better educated and those in richer households are much less likely to expect financial support or a place to live from their children than the uneducated and poor in urban and rural areas. While education seems more important than income in determining these differential expectations, husbands and wives in richer households are less likely than those in poorer households to expect to depend on their children when they are old, even when an adjustment is made for wife's education.

It is the costs of children as well as the benefits that explain family size preferences. While it is impossible to actually estimate costs in a study such as this, one can get an estimate of the financial burden of children by looking at educational aspirations of parents. While the educational aspirations for sons and daughters show substantial variations by region and socio-economic group, only differences in educational aspirations for daughters are closely related to family size preferences. Table 7.3 shows that rural Upper Egypt displays extremely low aspirations for the education of daughters and 50 per cent or more of husbands and wives there want primary school or less (51 per cent of husbands want no schooling for daughters), and only a quarter or less want university for their daughters. These figures imply very different

Table 7.3 Regional patterns in perceived costs and benefits of children

	Proportion expecting to live with children		Proportion expecting financial support		Proportion wanting primary or less education for daughters		Proportion wanting university education for daughters	
	Wife	Husband	Wife	Husband	Wife	Husband	Wife	Husband
Cairo and Alexandria	12	13	40	34	6	9	82	78
Lower Egypt — urban	28	34	46	48	5	12	81	71
Upper Egypt — urban	37	47	56	65	9	20	66	53
Lower Egypt — rural	59	46	62	52	11	25	65	56
Upper Egypt — rural	76	56	55	73	50	58	25	22
All Egypt	46	39	53	53	18	38	62	55

Table 7.4 Relationship between perceived support from children in old age and educational aspirations for children and development as measured by differences between highest and lowest levels of development

	Education		Per capita income		Per capita income adjusted	
	Wife	Husband	Wife	Husband	Wife	Husband
Proportion expecting to live with children						
Urban	−27 (87)	−34*(76)	−34 (81)	−32 (70)	−24 (73)	−21*(57)
Rural	−59*(83)	−30*(55)	−20 (28)	−18 (33)	−9*(19)	−10*(29)
Proportion expecting financial support from children						
Urban	−36 (68)	−44 (66)	−28*(50)	−32 (61)	−12*(28)	−20*(43)
Rural	−49 (79)	−33*(50)	−8*(13)	−16*(27)	1* (3)	−8*(21)
Proportion desiring primary school or less — daughters						
Urban	−12 (100)	−26 (93)	−6 (67)	−14 (74)	−1*(25)	−5*(45)
Rural	−33 (100)	−44 (85)	−10*(31)	−18*(42)	−4*(27)	−11*(46)
Proportion desiring university — daughters						
Urban	32 (48)	47 (102)	33 (54)	37 (74)	22 (31)	20 (31)
Rural	50 (119)	60 (68)	15 (35)	18 (49)	5 (7)	7 (11)

*Pattern is irregular.

( ) Relative differences.

educational aspirations and thus a lower financial burden of children there than elsewhere in Egypt where educational aspirations are higher.

Table 7.4 shows there are strong and fairly uniform socio-economic differences in the educational aspirations for daughters. The low aspirations, as measured by desired education less than or equal to primary school, are more highly determined by education than income, and when wives' education is held constant, most differences across income groups disappear except for husbands in rural areas. Aspirations for university education for daughters are closely related to income as well as to education in urban areas, but education is more important than income in rural areas.

In summary the benefits in terms of old-age support are greater and the financial burden of high educational aspirations for daughters are less among the rural, the uneducated, and the poor, particularly those in rural Upper Egypt.

7.4.2 Family size preferences

Perceived costs and benefits of children explain differences in family-size preferences to some degree, but these differences also depend on cultural factors as well as idiosyncratic personal factors. Table 7.5 shows that there are very sharp regional differences in fertility preferences, especially for women. The regions fall into three clusters. Urban Lower Egypt and the metropolitan areas have the lowest desired family sizes, desired number of sons and the proportion wanting additional children for both husbands and wives. Rural Lower Egypt and urban Upper Egypt are nearly identical on all these measures of fertility preferences. Rural Upper Egypt, however, stands alone with much higher family size preferences and with an atypical pattern that shows women wanting substantially more children and more sons than their husbands. In the other regions husbands want slightly larger families than their wives, but are somewhat less likely to want to have additional children.

Family size preferences as measured by desired family size and desired number of sons are strongly influenced by education and income. The richer and the better educated want substantially fewer children and fewer sons than the poor and uneducated. Table 7.6 shows that those with secondary or university education want 1.1–1.3 fewer children than the illiterate in urban areas, and 2.6–1.6 fewer children in rural areas. The differences across income quintiles are almost as large or larger than educational differences in urban areas, but substantially less in rural areas. When wife's education is controlled, one finds there are still substantial differences across income groups in urban areas, but much smaller differences in rural areas.

The desire for additional children depends on desired family size as well as on the number of living children and living sons. For this reason the socio-economic differentials in this variable do not follow the same

Table 7.5 Regional patterns in fertility preferences

	Desired family size		Desired number of sons		Proportion wanting additional children			
					Wife		Husband	
	Wife	Husband	Wife	Husband	Unadj.	Adj.	Unadj.	Adj.
Cairo and Alexandria	3.1	3.6	1.9	2.1	29	35	25	26
Lower Egypt — urban	3.3	3.4	1.9	2.0	36	35	29	29
Upper Egypt — urban	4.0	4.1	2.4	2.5	39	41	39	40
Lower Egypt — rural	4.0	4.3	2.3	2.6	42	45	37	40
Upper Egypt — rural	6.4	5.0	3.9	3.3	71	67	62	59
All Egypt	4.3	4.2	2.6	2.6	46		39	

Table 7.6 Relationship between fertility preferences and development as measured by differences between the highest and lowest levels of development

	Education		Per capita income		Per capita income adjusted	
	Wife	Husband	Wife	Husband	Wife	Husband
Desired number of children						
Urban	−1.1 (30)	−1.3*(30)	−1.4 (33)	−1.2 (28)	−1.0 (26)	−.7 (18)
Rural	−2.6 (49)	−1.6*(32)	−.6 (11)	−.8 (17)	−.3 (7)	−.5 (12)
Desired number of sons						
Urban	−1.0 (42)	−.8 (31)	−1.1 (39)	−.7 (28)	−.8 (32)	−.4 (17)
Rural	−1.7 (53)	−1.2*(38)	−.4 (13)	−.5*(17)	−.1* (5)	−.4*(16)
Proportion desiring more children						
Urban						
Unadjusted	17*(57)	1* (3)	23*(92)	17 (81)	20*(74)	19(100)
Adj. for parity	0 (0)	−7*(21)	−3* (8)	−2* (7)	−3 (7)	2* (6)
Rural						
Unadjusted	−10*(18)	2* (4)	16*(33)	18*(41)	21*(62)	20*(56)
Adj. for parity	−25*(44)	−10*(20)	1* (2)	4* (8)	4* (9)	7 (15)

*Pattern is irregular.

( ) Relative differences.

pattern as those for desired family size or number of sons. When one adjusts for current number of living children, one finds few if any systematic socio-economic differentials in urban areas. In rural areas, the more educated are less likely to want to continue childbearing than the uneducated. In rural areas, one finds that the higher the level of income, the more likely husbands and wives are to want to have additional children, even adjusting for parity. This effect is even stronger when the wife's education is controlled. This is one of the few positive effects of income on fertility observed in this study and this has implications for the potential effect on fertility of income growth unaccompanied by improved education of women. Thus, this evidence suggests that both more educated and higher income families generally want smaller families, but education has a more negative impact on fertility preferences than does income in rural areas.

Family size preferences and existing family size are major determinants of the desire to continue or cease childbearing, which in turn is an important motivating factor in contraceptive use.

7.5 CONTRACEPTIVE KNOWLEDGE AND ACCESS

Contraceptive use depends not only on motivation to limit fertility or to space children, but also on knowledge and access to efficient contraceptives. There are substantial regional and socio-economic differences in knowledge and access across regions and across socio-economic groups in Egypt.

7.5.1 Contraceptive knowledge

The pill is almost universally known by men and women in all areas of Egypt except rural Egypt where a quarter of the men and women are ignorant of it. As shown in table 7.7, differentials in knowledge of the other three efficient methods — IUDs, condoms and sterilization — are great across regions and between men and women.

Female sterilization is almost unknown among men in Egypt (only 11 per cent know of it) and only 28 per cent of the women know of the condom. The IUD is known by a majority of men and women in all regions except rural Upper Egypt, but female sterilization is known to a majority of women only in metropolitan areas and urban Lower Egypt. In no area do more than 20 per cent of men know of it. Condoms are known only to a majority of men and women in metropolitan areas and to a majority of men in urban lower Egypt. Thus, except for pill, and to a lesser extent the IUD, contraceptive knowledge is limited in Egypt.

There are substantial socio-economic differentials in contraceptive knowledge, except with respect to the pill in urban areas. As shown in table 7.8, differentials in knowledge are greater across educational, than across income groups in urban and rural areas.

Differentials are greater for husbands than for wives across education in rural than urban areas, and for the lesser known methods of sterilization and condoms. Thus, education serves an important function in increasing access to knowledge about efficient contraceptive techniques. As shown in the next section, it is less significant in increasing knowledge of access among those who know the various methods.

7.5.2 Contraceptive access

Tables 7.7 and 7.8 show differentials in access to contraception by region among those who are aware of the various methods. Access can be measured by knowledge

Table 7.7 Regional patterns in knowledge of and access to efficient contraceptives

	Proportion knowing of							
	Pill		IUD		Condom		Sterilization	
	Wife	Husband	Wife	Husband	Wife	Husband	Wife	Husband
Cairo and Alexandria	98	98	92	80	56	62	66	17
Lower Egypt — urban	97	97	88	76	39	59	57	15
Upper Egypt — urban	97	90	80	50	36	31	41	19
Lower Egypt — rural	95	91	79	57	18	26	44	7
Upper Egypt — rural	71	75	28	22	6	11	15	5
All Egypt	90	89	70	56	28	35	43	11

	Proportion of those knowing method knowing location for				
	Pill		IUD		Condom
	Wife	Husband	Wife	Husband	Husband
Cairo and Alexandria	94	93	72	75	82
Lower Egypt — urban	94	90	65	71	84
Upper Egypt — urban	89	88	60	72	94
Lower Egypt — rural	81	87	46	64	67
Upper Egypt — rural	66	73	48	59	77
All Egypt	84	86	58	69	79

	Perceived travel time (in minutes) to efficient contraceptives				
	Pill		IUD		Condom
	Wife	Husband	Wife	Husband	Husband
Cairo and Alexandria	12	10	22	20	8
Lower Egypt — urban	16	12	24	20	10
Upper Egypt — urban	14	11	18	26	8
Lower Egypt — rural	23	20	34	26	20
Upper Egypt — rural	28	22	53	51	36
All Egypt	18	16	28	25	13

Source: Tables 6.2, 6.5, and 6.7

Table 7.8 Relationship between knowledge of an access to efficient contraceptives and development as measured by differences between highest and lowest levels of development

	Education		Per capita income		Per capita income adjusted	
	Wife	Husband	Wife	Husband	Wife	Husband
Proportion knowing of						
Urban						
Pill	4 (4)	10 (11)	2* (2)	9 (10)	0* (0)	7* (8)
IUD	16* (20)	47 (98)	7 (8)	40 (69)	0* (0)	16 (23)
Sterilization	29 (59)	32 (640)	26 (60)	17*(155)	19*(43)	15* (2)
Condom	46 (144)	64 (278)	38*(141)	40 (118)	12*(35)	2* (9)
Rural						
Pill	20 (25)	21 (27)	1* (1)	1* (1)	−1* (1)	−1* (1)
IUD	47 (96)	57 (190)	8* (14)	9* (23)	2* (3)	0* (0)
Sterilization	31*(119)	28 (967)	5* (17)	6 (100)	1* (2)	1* (5)
Condom	49 (613)	53 (482)	11 (110)	11* (61)	3* (9)	−1* (2)
Proportion knowing location for						
Urban						
Pill	11 (12)	12* (15)	6* (7)	6 (7)	−1* (1)	1* (1)
IUD	15* (28)	20 (32)	5* (8)	13* (20)	−5* (7)	1* (1)
Condom	–	28* (43)	–	26 (40)	–	12*(16)
Rural						
Pill	25 (35)	23 (31)	11 (15)	1 (1)	7* (9)	−4 (4)
IUD	18 (41)	34 (64)	16* (42)	14 (25)	11*(22)	2* (3)
Condom	–	39* (75)	–	12 (28)	–	7 (8)
Travel time (minutes)						
Urban						
Pill	−4 (27)	−4 (31)	−7* (39)	−5 (38)	−4*(25)	−4 (33)
IUD	+2* (9)	−6 (23)	−3* (12)	−1 (5)	−5 (24)	−1* (5)
Condom	–	−2* (20)	–	−4 (33)	–	−4 (33)
Rural						
Pill	−17* (63)	+1* (5)	−3* (5)	+1* (5)	+2*(11)	+2*(11)
IUD	−20* (50)	−3* (10)	0 (0)	−1 (3)	+4*(13)	+5 (17)
Condom	–	−1* (4)	–	+1 (4)	–	+3 (12)

*Pattern is irregular.

( ) Relative differences.

of a source of supply, travel time to the source of supply, and costs of the method. Since little variation was observed in the costs of methods, this variable is not included in the tables presented in this chapter.

Urban and metropolitan areas have excellent access. The vast majority of those who know of a method know where it can be obtained, and are in most cases within 20 minutes of a source of supply for pills and condoms. For IUDs, a somewhat lower proportion (60–75 per cent) of those in urban and metropolitan areas know where it can be obtained, and the travel times are somewhat greater — between 18–26 minutes.

Rural areas have less access, and there are differences between Lower and Upper Egypt. Access is more difficult in rural Upper Egypt, especially with respect to travel times for all three program methods.

There are differences by education and, to a lesser degree, income, in knowledge of location and, to a lesser extent, travel time to source but these differences are much smaller than differentials in knowledge of methods across groups. These differences in access and in knowledge of contraception and in motivation to use contraception are factors explaining differentials in contraceptive use and will be summarized in the next section.

7.6 CONTRACEPTIVE USE

Contraceptive use is relatively high in Egypt, with over 40 per cent of the husbands and wives reporting that they have used efficient methods of contraception — mostly the pill — at some time, and approximately one-third reporting current use. There are four broad regions of usage. In Cairo/Alexandria and urban Lower Egypt, more than half of the men and women report current use of efficient contraceptives, and two-thirds of the husbands and 70 and 64 per cent of the wives report usage at some time. (See table 7.9.) In urban Upper Egypt, about

Table 7.9 Regional patterns in use of efficient contraceptives

	Ever use			Wife's report		Husband's report	
	Wife's report	Husband's report	Parity of first use	Unadj.	Adj.	Unadj.	Adj.
Cairo and Alexandria	70	67	2.6	56	53	53	50
Lower Egypt — urban	64	67	2.8	53	52	57	57
Upper Egypt — urban	54	48	2.9	39	39	40	38
Lower Egypt — rural	35	36	3.6	25	26	30	31
Upper Egypt — rural	15	12	4.3	9	10	8	9
All Egypt	43	42	3.1	33		35	

Source: Tables 6.11, 6.13, and 6.16.

40 per cent of the men and women report current use of efficient contraceptives, and about a half report use at some time. Rural Lower Egypt, which showed motivation to limit fertility as high as urban Upper Egypt, has substantially lower usage than that region — probably due to the poorer access of that area to contraceptive supplies. Rural Upper Egypt, which showed the least motivation to limit family size and the poorest access, has the lowest usage rate, less than one-half that of rural Lower Egypt.

These regional patterns reflect in part regional differences in motivation, and in part regional differences in usage among the motivated. While between 57 to 75 per cent of the wives and husbands who don't want more children are currently using contraceptives in the most developed areas, only 20–24 per cent of those so motivated use contraceptives in rural Upper Egypt. There are also male–female differences in reported usage among the motivated: more males than females who don't want additional children report current usage of efficient contraceptives. This pattern exists even when both husband and wife agree that they don't want additional children. For those couples, only 57 per cent of the wives report contraceptive use compared with 64 per cent of the husbands. These discrepancies must therefore reflect confusion on the meaning of contraceptive use or lack of communication between husbands and wives on contraceptive practice. It should be mentioned, however, that these differences are not much greater than differences in use reported by women between original and follow-up surveys in other countries.

Contraceptive use has sharp socio-economic differentials, particularly in rural areas, as shown in table 7.10. Current use is of most interest. In urban areas, higher education and higher income substantially increase reported usage to about the same degree. When usage is adjusted for age, however, income shows a sharper effect on usage than does education. Differences across income groups persist even when wife's education is adjusted. In rural areas there are extremely large differences in current use across educational groups, and much smaller differences across income.

In urban and rural areas differences in usage across education groups exceed differences in the motivation to cease childbearing across these same groups. Differences in usage by education and income in general also exceed differences across the same variables in knowledge of the most commonly used contraceptives — pill and IUD. These stronger differentials in usage result from the cumulative effect of socio-economic variables on motivation, knowledge of and access to contraceptives.

7.7 POLICY IMPLICATIONS OF THE FINDINGS

The ultimate purpose of studying fertility and its determinants is to provide policy guidance. There are two basic types of policies that have received considerable attention in Egypt as elsewhere: those which focus on the delivery of family planning services, and those that focus on socio-economic development to stimulate fertility decline. There is undoubtedly need for both types of policies, but the effectiveness in terms of time and money of various policies differs, depending on many factors. The preliminary results of the Egyptian Fertility Survey may help target interventions in ways that increase effectiveness. In the framework outlined above, contraceptive use depends on both the motivation to use contraceptives and knowledge of and access to contraceptives. Finally planning programs can most directly affect knowledge and access, but through information, communication and education efforts they might also affect motivation. Socio-economic development will tend to affect the underlying characteristics that affect the motivation for large families and have indirect effects on contaceptive knowledge and access. Therefore the emphasis on each strategy should depend on what factors appear to be constraining usage most and may differ in different parts of Egypt.

Table 7.10 Relationship between use of efficient contraceptives and development as measured by differences between highest and lowest levels of development

	Education		Per capita income		Per capita income adjusted	
	Wife	Husband	Wife	Husband	Wife	Husband
Proportion reporting ever use						
Urban						
Under 25	23* (85)	30*(158)	11* (4)	8* (24)	−6*(15)	−5* (11)
25–34	13* (19)	25* (47)	7*(11)	7* (12)	−2* (3)	7* (1)
35–44	21* (32)	29* (53)	12*(15)	14* (25)	5* (7)	5* (7)
45+	13 (21)	31* (72)	5* (8)	15* (39)	−5* (7)	0* (0)
Total	17* (29)	28 (61)	7*(12)	10* (19)	−5* (7)	−3* (5)
Rural						
Under 25	54(1000)	23 (329)	12*(92)	15*(107)	6*(21)	8* (31)
25–34	63*(263)	58 (305)	15*(48)	4* (10)	−1* (2)	−4* (6)
35–44	70 (233)	68 (283)	0* (0)	−1* (3)	−14*(21)	−12* (19)
45+		20 (154)	−13*(62)	−15 (100)	−9*(50)	−11*(100)
Total	57 (73)	41 (241)	6*(23)	5* (19)	−3* (5)	−4* (7)
Parity at first use						
Urban	−2.2 (63)	−1.8*(50)	−1.6 (47)		−.6*(21)	
Rural	−2.5*(63)	−1.6*(39)	−1.4*(36)		−.6*(18)	
Proportion reporting current use						
Urban						
Unadjusted	19* (43)	18* (46)	18*(45)	19* (53)	10*(21)	10* (23)
Adj. for Age	13* (30)	14* (33)	22*(58)	23* (70)	11*(24)	11 (26)
Rural						
Unadjusted	61 (469)	32 (229)	13 (81)	14* (74)	4*(10)	4* (10)
Adj. for Age	66 (508)	34 (262)	14 (93)	15* (83)	4* (9)	3* (7)

*Pattern is irregular.

( ) Relative differences.

7.7.1 Programs to increase contraceptive knowledge and access

While a study of this type cannot document the effectiveness of actual family planning delivery systems, or the constraints on use imposed by family planning personnel attitudes and competence, or the conditions under which contraceptives are available, it can suggest some directions of program development.

Family planning programs can increase knowledge of and access to contraception; and information, education, and communication programs can help husbands and wives who are motivated to cease childbearing make decisions about family planning more effectively and implement contraceptive use more efficiently. These programs may also encourage couples who want additional children to use contraception for spacing.

The evidence presented above suggests that several types of improvement may be needed in the family planning program. First, knowledge of contraception is restricted to the pill and, to a lesser extent, the IUD. Knowledge of the condom is clearly deficient and needs to be expanded. Increased knowledge of sterilization might bring about substantial reductions in fertility, given the large proportion of couples who are not using contraception and do not want additional children.

Secondly, males need to be included to a greater extent in the family planning program and in related information, education, and communication programs. There are several reasons for this: (1) Males are generally less likely to want additional children than females, particularly in rural Upper Egypt. Although the differences between men and women on this dimension are not generally large, there is untapped motivation on the part of husbands to limit fertility; (2) Males are much less knowledgeable than females about IUDs and sterilization and are also surprisingly ignorant about the condom; (3) Husbands and wives in rural areas do not frequently discuss family-size preferences; and (4) Husbands and wives disagree in a surprising number of cases on whether contraception is currently being used even when both say they do not want additional children. In this case, husbands are more likely than wives to report that contraception is currently being used. All these

factors affect contraceptive use, and the effectiveness of that use might increase if the husbands were made more aware of and responsible for contraception.

Thirdly, the data show that usage increases as distance to family planning services decreases, and contraceptive access is more limited in rural than urban areas. This suggests that more access is needed in rural areas. Given the program costs of increasing access, it is important to be sure that increased access would increase usage. There appear to be substantial differentials in the potential demand for contraception for family limitation which is not currently being met. In urban and metropolitan areas, 22–29 per cent of the fecund couples do not want additional children but are not practicing family planning. In rural Lower Egypt, 32–42 per cent of the husbands and wives fall in this category. In rural Upper Egypt, only 8 per cent of these women and 28 per cent of their husbands do not want additional children and are not using contraception. The strategies should differ in these areas. Increased access would have high benefits in rural Lower Egypt, but the cost of increasing access in rural areas is higher than in urban areas. Therefore, careful consideration must also be given to determine why those in urban and metropolitan areas who want no more children are not using contraception. In rural Upper Egypt motivation is clearly a limiting factor as long as programs and methods are directed to women, and there is little potential for increased usage from this source.

Fourthly, contraception for spacing is not practiced widely in Egypt. Only about 14 per cent of the couples who want additional children are contracepting. There are, however, large urban–rural differences in spacing and 36–38 per cent of the couples who want additional children in metropolitan areas are using contraception for spacing compared with only 2–3 per cent in rural Upper Egypt. The current program does not attempt to encourage contraception for spacing and a reorientation of the program may well substantially decrease the parity of first use of contraception.

These general suggestions for expanding the family planning program are consistent with the findings in this study. The exact magnitude of the impacts cannot be predicted with data of this kind, but increased knowledge of various methods and increased access can be expected to have some fairly immediate impacts on contraceptive usage and thus on fertility in certain areas of Egypt. In other areas, particularly rural Upper Egypt, there is little unmet demand for contraception for family limitation at least among women. The potential for child spacing cannot be assessed from these data.

7.7.2 Socio-economic development and fertility reduction

Improved levels of education and income are a major objective of government policy in Egypt and as such must continue to be pursued. Whether attention should be focused on development as 'the best contraceptive' is another matter. While development will probably eventually bring about reductions in fertility, it is a time-consuming and expensive process and its effects on fertility are not unambiguous in rural areas in the short run. The data in this survey show that higher levels of income and education are associated with uniformly lower fertility in urban areas, but in urban areas fertility is already fairly low and contraceptive use quite high. Likewise, female labor participation is not necessarily associated with lower fertility in rural areas.

In rural areas, the most educated have much lower fertility rates than the least educated, but fertility appears to be somewhat higher at intermediate levels of education than at the lowest levels. This implies that perhaps development will only reduce fertility after an initial rise or after a threshold level is reached. In addition, the analysis above shows that in rural areas income is not as closely related to fertility as the wife's education, and there is some indication that increases in income unaccompanied by increases in female education may not lead to reduced fertility. Therefore, the type of development will have a critical effect on fertility. Further analysis on these relationships is needed before definitive answers are possible.

What is clear, however, is that at the current time there is little motivation to limit fertility among women in rural Upper Egypt, and major changes will be needed before contraceptive use is likely to increase or fertility is likely to fall in this region. One clear factor keeping fertility high in rural Upper Egypt is the much higher levels of infant and child mortality prevailing there (infant and child mortality is twice that of metropolitan areas). This is clearly a high priority problem. The results of the survey on infant and child mortality show that in rural areas those households with piped water inside the house had about half as many of their children dying as those without piped water. Given the high incidence of diarrhoea disease in Egypt, prevention and cure of gastro-intestinal disease is critical.

In all of Egypt a case can also be made that educating daughters through primary school will eventually bring about reductions in desired family size and fertility. Increasing the education of daughters in rural Upper Egypt will not necessarily be easy, however, since 51 per cent of the fathers and 45 per cent of the mothers in rural Upper Egypt do not want their daughters to have any

education. This fact suggests that increasing access to schools will not be sufficient to limit fertility in this area.

Although the effect of female employment on fertility needs much more research, it appears that those women who work for others have lower fertility, want fewer children and are more likely to be using contraception than other women. Women who work for themselves and the family do not necessarily have lower fertility or higher contraceptive use than other women, however.

The analysis in this report suggests several other things about the relationship between development and fertility. The rather simple analysis of the perceived benefits of children combined with the data on child labor participation suggests that child labor does not appear to be a major factor motivating parents to have large families. While further analysis and other studies are needed on this topic, it does appear that parents are more concerned about old-age support than the short-term economic benefits of children. Designing programs to reduce this motive for large families needs attention.

7.7.3 Summary of policy implications and direction for further research

Thus long-term structural changes can be considered for reducing fertility. These include reductions in infant and child mortality, increased education and income, and the development of old-age security systems. These are unquestionably needed for fertility to decline to replacement. In all areas, except perhaps rural Upper Egypt, there appears to be considerable potential for reducing fertility more quickly, by some expansion of the family planning program.

While further analysis of these data is clearly needed to refine these recommendations, and other types of studies of fertility, and family planning delivery systems, are clearly needed, this analysis does provide insights that should be of use to policy makers, both with respect to the design of family planning programs and socio-economic development.

The most important topics on which further research is needed for this data set to address these policy questions are: (1) the role of female work opportunities and fertility; (2) the relationship between infant and child mortality and fertility; (3) the relative importance of access to contraception and the motivation of husbands and wives in the determination of contraceptive use; and (4) the consequences of large families for the household. Other research is needed as well that goes beyond the scope of this data set. More needs to be understood about the determinants of age at marriage, the details of the family planning delivery system and how it affects the adoption, effectiveness and continuation of contraceptive use.