# THHE SURPME  

## Molume :

A Joint Project of

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The Survey of Fertility in Thailand was conducted in 1975 as a joint project of the Institute of Population Studies, Chulalongkom University, and the National Statistical Office as part of the World Fertility Survey, an international population research program in human fertility behavior. This report is a preliminary one presenting the basic results of the Survey and utilizing primarily data obtained through the core questionnaire on fertility. The report is issued in two volumes: Volume I contains background information together with a description of the Survey methodology and operations and a presentation of the main findings; Volume II contains the basic statistical tables.

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ABBREVIATIONS USED IN THE TEXT OF THE REPORT

| IPPF | $:$ | International Planned Parenthood Federation, England |
| :--- | :--- | :--- |
| IPS | $:$ | Institute of Population Studies, Chulalongkorn University |
| ISI | $:$ | International Statistical Institute, Netherlands |
| LS I | $:$ | Longitudinal Study of Social, Economic and Demographic Change, Rounds I and II, |
| LS II | $:$ | Institute of Population Studies, Chulalongkorn University |
| MOPH | $:$ | Mirristry of Public Health, Government of Thailand |
| NESDB | $:$ | National Economic and Social Development Board, Government of Thailand |
| NFPP | $:$ | National Family Planning Program, Government of Thailand |
| NSO | $:$ | National Statistical Office, Government of Thailand |
| PPAT. | $:$ | Planned Parenthood Association of Thailand |
| SOFT | $:$ | Survey of Fertility in Thailand |
| SPC | $:$ | Survey of Population Change, National Statistical Office, Government of Thailand |
| UNFPA | $:$ | United Nations Fund for Population Activities, New York |
| WFS | $:$ | World Fertility Survey, England |

As the table titles refer only to "selected background variables", this index is provided to identify the specific variables included in each table.


Codes used :
$h$ : husband
w: wife
f: household or family
for number of children:
1: living
e: ever born

## INTRODUCTION

## SUMMARY OF TME FTNDHES


#### Abstract

The Survey of Fertility in Thailand utilized four questionnaires to collect the basic data through Household, Husband's, Fertility and Community Surveys. The full analysis of the information received will take several years and involve a number of specialized studies. Meanwhile, this report is being issued at an early stage in order to: (i) provide a preliminary assessment of the findings and (ii) make available the basic tabulations of the Survey.


The first stage of analysis was limited to the use of data derived from cross-tabulations in which no more than two or three variables could be controlled at one time. The findings should be considered as tentative in that they are subject to modification and revision in the course of more thorough and detailed analysis, but the basic patterns and trends revealed by this first analysis should remain essentially unchanged.

## Nuptiality

While marriage has been nearly universal in Thailand, the age at marriage of Thai women has traditionally been comparatively high. The trend in recent decades of a gradual rise in age at marriage has been noted previously and is confirmed in this Survey. (4.4.1) $1 /$ For women who marry before the age of 25 years there was no appreciable change in age at first marriage, but an increasing number and percentage had not married by age 25. A significant number marry between the ages of 25 and 50 years, but the data suggest a gradual increase in the proportion of women remaining unmarried throughout the child-bearing years.

Differentials in age at marriage were greatest when related to level of education. (4.4.2) The range, for women married before age 25 , was from a mean age of 17.9 years for women who had never attended school to 22.4 years for those with 11 or more years of school. Smaller differentials were associated with urban-rural residence and with occupation of the husband.

Of ever-married women under 50 years of age, approximately one in eight had the first marriage ended by separation or divorce and one in seventeen by death of the spouse. Remarriage is not uncommon in Thailand, and two-thirds of the women whose first marriages were dissolved had remarried before their fiftieth year of age.

## Fertility

Fertility in Thailand began to decline in the decade

1/ The numbers in parentheses refer to relevant sections and tables in Chapter IV.
of the 1960s and the downward trend has been substantiated by census data and a number of surveys, though precise measures of change are not possible because of the inadequacy of available statistics. (4.5.1) The data of SOFT indicate that the decline continued through the first half of the present decade.

In considering differentials in cumulative fertility, the SOFT results confirm those of earlier studies in identifying differences on the basis of urban-rural residence, region of residence, and education and occupation of both wife and husband. (4.5.2)

Though there has been an overall decline in fertility, early marital fertility maintained a high level. (4.5.3) The mean number of children born in the first five years of marriage was 1.7 for those married 5 to 9 years, 1.8 for those married 10 to 19 years and 1.6 for those married 20 years and over. Further, socio-economic variables such as education of the wife and family income do not show the usual differentials, and the mean number of children born in the first five years of marriage ranges from 1.6 for women at the lowest level of family income to 2.0 for those at the highest level. It is evident that the differentials observed in cumulative fertility result from deliberate control of family size after a number of years of marriage. Spacing of births in the early years of marriage does not appear to be a common practice.

In examining current fertility, three studies provide estimates of age-specific fertility. (4.5.4) SOFT estimates cover the years from 1965 to 1975; the Survey of Population Change (SPC) estimates are based on surveys conducted in 1964-1965 and 1974-1975; and the Longitudinal Study of Social, Economic and Demographic Change in Thailand (LS) estimates are for 1968-1969 and 1971-1972. Because of methodological and other differences the results of the three studies are not readily comparable, but together they confirm a significant decline in the total fertility rate since 1965. The SOFT data suggest that the decrease was of the order of 20 per cent. The age-specific fertility rates show a pronounced decline over the ten-year period for women aged 30 years and over, while there was little change in the rates for women 20 to 24 years of age.

## Fertility preferences and attitudes toward family size

The SOFT questionnaires asked both husbands and wives whether additional children were wanted and, if so, how many. Information was also sought on the total number of children wanted "if you could choose the number".

## CHAPTRER

## RACEGEOUND OR TUTE SURVEZ

### 1.1 JUSTIPRCATMON FOR THR PRODECT

The Government of Thailand, recognizing that a high rate of population increase is a serious obstacle toward achieving economic and social development, made population policies an integral part of the Third National Economic and Social Development Plan (19721976). High priority was given to population programs, with the objective of reducing the population growth rate from about 3 per cent to 2.5 per cent per year by 1976 , the end of the Third Plan period.

While the 1970 Population Census and various sample surveys have yielded much useful information on fertility and mortality, and data have also been collected from family planning centers in recent years, it is necessary for the Government to have accurate and up to-date information on demographic variables, particularly for the mid-censal period. Such data are of great value in assessing the results of the population programs to date and in formulating and monitoring the Fourth National Economic and Social Development Plan.

Participation in the World Fertility Survey (WFS) under the co-ordination of the International Statistical Institute (ISI) was therefore both timely and consonant with the present needs and requirements of the Thai Government.

### 1.2 INSTITUTIONAL FRAMEWORK

The national agencies responsible for the planning, co-ordination and implementation of the Survey of Fertility in Thailand (SOFT), were:
(1) the National Economic and Social Development Board (NESDB), which is the agency responsible for formulating, co-ordinating, monitoring and evaluating the results of the National Economic and Social Development Plan and programs and, in particular, programs related to population activities;
(2) The Institute of Population Studies (IPS), Chulalongkorn University, which has the following major functions: program for the M.A. degree; undergraduate and graduate instruction; Government in-service training; research; dissemination of information and clearing house activities; and provision of consultation services to Government.
(3) the National Statistical Office (NSO), which is the agency responsible for the compilation and collection of statistical data at the national level, and for the co-ordination and development of statistical activities in the Government sector. The NSO also serves as a data
processing center for both governmental and non-governmental agencies. The NSO has field offices in every province outside Bangkok Metropolis, including eight regional field offices.

During the early preparatory stages of the project the Deputy Secretary-General of NESDB played an active role. The technical planning, co-ordination and implementation of SOFT were the joint responsibility of IPS and NSO, with the Directors of IPS and the Population Survey Division, NSO, serving as Co-Directors.

The International Statistical Institute/World Fertility Survey (ISI/WFS) provided consultative and co-ordinating assistance throughout the term of the project. The United Nations Fund for Population Activities (UNFPA) funded the project through ISI. The Thai Government provided technical and field staff, data processing facilities and other logistic support.

### 1.3 OBJECTIVES OF SOFT

The project was designed with five major objectives in mind:
(1) to obtain data on fertility levels and information concerning fertility behavior as a basis for formulating more effective policies with regard to population, economic and social development planning;
(2) to promote the further development of demographic survey methodology, population research, and the scientific study of fertility and related variables;
(3) to provide accurate and timely data on fertility and mortality patterns and levels, as well as information on factors affecting fertility;
(4) to provide the information necessary for evaluating the effect of family planning programs on fertility;
(5) to provide internationally comparable data on fertility patterns and levels.

In seeking to achieve these objectives, SOFT utilized four separate surveys and questionnaires. The Household Survey and the Husband's Survey were conducted by NSO, and the Fertility Survey and Community Survey by IPS. Each organization carried out the two surveys simultaneously.

## Household Survey

This Survey was designed to collect data on
households, their characteristics and their economic status, including family income and household and business assets, for use in the analysis of differential fertility.

## Husband's Survey

The function of this Survey was to provide data on husbands' views on family size, child-rearing conditions and education, advantages and disadvantages of large and small families, the acceptability of wives working and knowledge and use of contraceptives. With the objective of obtaining a more complete analysis of socio-economic and attitudinal variables affecting fertility behavior, the responses of husbands and wives were matched.

## Fertility Survey

As already noted, a major objective of SOFT was to provide comprehensive information on fertility levels and the factors influencing fertility behavior. The Fertility Survey was the primary instrument used to obtain the factual and attitudinal aspects of wives' fertility behavior.

## Community Survey

In view of the importance of the community setting. and services in influencing the views and actions of couples, this Survey sought to provide data on the general characteristics and socio-economic conditions at the village level, including accessibility of information and the availability of organizational and institutional services.

### 1.4 RELATED RESEARCH ACTIVITIES

The SOFT/WFS project was implemented as an integral part of the survey and research activities of IPS and NSO. On the part of IPS, the SOFT results will be examined in relation to those of previous rounds of the Longitudinal Study of Social, Economic and Demographic Change. NSO linked SOFT with its multi-round household survey, known as the Survey of Population Change (SPC), a two-year project begun in July 1974. The SPC project was designed to obtain reliable estimates of births and deaths for Thailand through two independent systems: a multi-round household survey and the existing vital statistics registration system. The SPC field staff participated in the SOFT Husband's Survey and the household listing for the third round of SPC provided the sample frame and the household information needed for SOFT.

An earlier Survey of Population Change was carried out in 1964-67 by NSO in co-operation with the Ministries of Interior and Public Health. It used the same survey methodology as the current SPC. The objective of the Survey was to obtain reliable estimates of annual birth and death rates and also to measure underregistration of births and deaths. One of the main purposes in obtaining these data was to use them in
preparing a series of official population estimates and projections by age and sex, which are in great demand.

Plamning for the Longitudinal Study of Social, Economic and Demographic Change started at IPS in 1968. A national sample of rural households was interviewed in April and May of 1969 and a year later a national sample of urban households was interviewed. Taken together, the two samples constitute a national sample of the Thai population. The rural sample was re-interviewed in April and May 1972 and the urban sample one year later.

The Longitudinal Study served several useful functions. First, it provided needed benchmark data for current and later evaluation of the demographic characteristics of the Thai population, e.g. the assessment of fertility, mortality, and migration in both behavioral and attitudinal dimensions. Second, it was designed specifically to facilitate comparisons between the rural and urban segments of the population with regard to fertility, mortality, migration, and other variables contributing to an analysis of the role of modernization and urbanization in producing demographic, social and cultural change. Third, collecting data for up to three generations in each household permitted analysis of changes that have occurred between the generations.

### 1.5 SOCIAL AND DEMOGRAPHIC BACKGROUND OF THAILAND

Thailand is a tropical country located in Southeast Asia. The total population in mid- 1975 was estimated as nearly 42 million. Thailand ranked as the seventeenth most populous country in the world in 1970. The growth rate until recently was about 3 per cent a year, placing it among the highest in the world. Although the present growth rate remains high, there is evidence that the fertility rate is declining. The Government's target growth rate of 2.5 per cent per year by late 1976 is now considered to have been achieved.

## Density and distribution

Thailand is predominantly an agricultural country with a population density in 1970 of 66.9 persons per square kilometer. At the time of the 1970 Census only about 13 per cent of the population lived in places classified as municipal areas. Of the 120 such places, 83 had fewer than 20,000 persons each. Most of Thailand's urban population is highly concentrated in a single metropolitan center, the Bangkok Metropolis, which had a population of about 3.1 million in 19701. The population of the Bangkok Metropolis accounted for about two-thirds of the nation's total urban population and almost four-fifths of the population living in places of 20,000 persons or more.

Thailand is divided into four main regions: North,

1. The twin provinces of Phra Nakorn-Thon Buri were assigned metropolitan status in 1971 and are now referred to as the Bangkok Metropolis.


Northeast, Central and South. The Northern Region, totalling about 170,000 square kilometers, includes sparsely settled, mountainous, forested areas extending to Burma in the north and west, with densely settled areas of fertile rice cultivation in the valleys. In 1970 the Northern Region had a population density of 44 persons per square kilometer.

The Northeastern Region also has a total area of about 170,000 square kilometers, extending in the north and east to the Mekhong River, which serves as a natural boundary between Thailand and Laos. It is a dry region with relatively infertile soil and insufficient irrigation. The main crops of this region have been glutinous rice and, more recently, maize, kenaf and tapioca. More than one-third of the country's population lives in this region which had a 1970 population density of 71 persons per square kilometer.

The Central Region, within which the capital city of Bangkok is located, is the economic and political center of Thailand, and has a land area of 104,000 square kilometers. Because of the flatness of the alluvial basin and annual floods during the monsoon, the Central Region is one of the most fertile areas for rice cultivation. In 1970, slightly less than one-third of the total population lived in this region, making the Central Region, with about 105 persons per square kilometer, the most densely settled region of Thailand.

The Southern Region, comprising peninsular Thailand, is the smallest in terms of both area, about 70,000 square kilometers, and population. The main crops
cultivated are rubber, coconuts and fruit; rice is raised mainly for family consumption. There are extensive tin mines and some wolfram mining. Four of the fourteen provinces in this region, bordering on Malaysia, are predominantly Malay-speaking Muslims. The population density in 1970 was about 61 persons per square kilometer. The population of the Northern and Southern regions together comprise one-third of the total population.

## Age-sex composition

In 1970 about 45 per cent of the population was under 15 years of age, with another 3 per cent aged 65 years and over. The median age at the time of the 1970 census was 17 years. The youth dependency ratio was 87 and the aged dependency ratio was 6 . The sex ratio showed that there were slightly more females than males; the 1970 census reported 99.1 males per 100 females. The number of married women under 50 years of age was 3.8 million at the time of the 1960 census and had increased to 4.9 million in 1970 .

## Fertility

Thailand's fertility has remained high throughout the twentieth century, with the exception of World War II. Estimates made by the United Nations (1963) placed the gross reproduction rate at 3.2 for 1950-1955, while results of a sample survey conducted by the National Statistical Office in 1964-67 estimated the gross reproduction rate as 3.1 and the crude birth rate as about 42 per thousand over the period.

Table 1. Population of Thailand by regions, 1960, 1970 and 1975

| Region | 1960 |  | 1970 |  | 1975 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Per cent | Number | Per cent | Number | Per cent |
| Whole Kingdom | 26,257,916 | 100.0 | 34,397,374 | 100.0 | 41,869,000 | 100.0 |
| North | 5,723,106 | 21.8 | 7,488,683 | 21.8 | 8,944,000 | 21.4 |
| South | 3,271,965 | 12.5 | 4,271,674 | 12.4 | 5,195,000 | 12.4 |
| Northeast | 8,991,543 | 34.2 | 12,025,140 | 35.0 | 14,789,000 | 35.3 |
| Central1/ | 6,134,867 | 23.4 | 7,534,516 | 21.9 | 8,763,000 | 20.9 |
| Bangkok Metropolis | 2,136,435 | 8.1 | 3,077,361 | 8.9 | 4,178,000 | 10.0 |

[^0]According to the results of the Longitudinal ${ }^{\circ}$ Study of Social, Economic and Demographic Change, marital fertility rates were highest for rural women and lowest for women residing in the Bangkok Metropolis. The provincial urban rate was 29 per cent lower than the rural rate. The rate for the Bangkok Metropolis was 39 per cent lower than the rural rate.

## Mortality

During the first half of this century, Thailand's death rate was estimated to be about 30 per thousand. After World War II, public education and the widespread use of DDT and medicines resulted in a sharp decline in the death rate for malaria, previously a major cause of death. Other diseases also diminished in frequency and by the mid-1950s the death rate was less than 20 per thousand. By the mid-1960s SPC reported an estimated rate of about 11 per thousand. The results of the significant decline in mortality are reflected in the increase in the expectation of life at birth from an estimated 35 years in 1937 to about 50 years by 1947. In 1964-65, it was estimated as 62 years for females and 56 years for males.

Infant and maternal mortality rates have also declined significantly over the past 30 years, decreasing by two-thirds between 1940 and 1970. In 1964-65 SPC estimated the infant mortality rate to be 85 per thousand live births and official Ministry of Public Health figures indicate that maternal mortality was about 4 per thousand live births. Public health efforts are expected to result in further declines in death rates, particularly infant and maternal mortality.

## Religion

The Thai population is predominantly Buddhist. According to the 1970 Census 95.3 per cent were reported as Buddhist, 3.8 per cent Muslim, 0.6 per cent Christian, and 0.3 per cent other or not stated.

## Ethnicity

Thailand is homogeneous with respect to the nationality and citizenship of its population. In 1970, 99 per cent of the population reported that they had been born in Thailand.

## Structure of the economically active population

According to the 1970 Census about 49 per cent of the total population was economically active, including 52 per cent of the males and 46 per cent of the females. The highest rate of economic activity was in the 30 to 49 year age group, with 96.4 per cent reported economically active.

## Literacy and education

In the 1970 Census literate persons were defined as persons 10 years of age and over who were able to read
and write simple statements in any language. The literacy rate for males was 89 per cent and 75 per cent for females in 1970. In gencral, literacy is higher among males and declines for both sexes as age increases. The literacy rate was lowest in the Northern Region, where it was 83 per cent for males and 66 per cent for females. The proportion of literate persons was higher in the municipal areas for all regions and highest in Bangkok Metropolis where it was 95 percent for males and 85 per cent for females.

According to the 1970 Census, 45 per cent of the population 6 years of age and over had completed Grade 4 , or lower primary school, and about 32 per cent of persons aged 6 to 29 years reported that they were still attending school as of January 1970. Of the population 6 years of age and over, 26 per cent reported that they had had no schooling, 62 per cent had attended secondary school, and 0.4 per cent had attended university. Educational attainment was higher for males at every level. Of the population aged 6 years and over, 31 per cent of the females and 21 per cent of the males had never attended school.

## Household and family

Household size in Thailand tends to be large, averaging about 6 persons per household. The 1970 Census reported about 5.9 million households.

Studies on household structure were conducted by IPS as part of the Longitudinal Study. In addition to the single-person household, four basic types of households were defined on the basis of family composition of the members: nuclear, stem, joint and stem/joint. According to this classification, the majority of the households in Thailand can be considered nuclear, i.e. husband and/or wife with unmarried children, if any, and unmarried relatives or unrelated persons at the same generation level as the children; this applies to both the rural and the urban population. The studies also indicated that the types of family composition change with the life cycle of the household head; most of the married couples in both rural and urban areas reported living with their parents immediately following their first marriage.

## Marital status

In the past, marriage has been nearly universal in Thailand. According to the 1970 Census, of all males aged 50 years and over fewer than 2 per cent reported never being married, while in the case of females the comparable figure was slightly over 2 per cent. The median age at marriage was 24 years for males and 21 years for females.

The Longitudinal Study of Social, Economic and Demographic Change in Thailand showed that, on the average, marriage takes place earliest in the rural areas and latest among the residents of Bangkok Metropolis. Among married women, the highest proportion of women married two or three times was found in the
rural population and the lowest proportion in residents of Bangkok Metropolis. For most age groups, the proportion of single men and women was lower in the rural areas than in the urban areas; within the urban population, lower proportions of single persons were found outside the capital city.

## Population policy

In the first half of this century, Thailand's official stance on population was predominantly pronatalist. During the 1960s the Cabinet received a long series of recommendations on the population issue, but only after receiving the recommendations of the Third National Population Seminar in 1968 did the Cabinet refer this question to the National Economic Development Board (now the National Economic and Social Development Board) to prepare a set of final recommendations. In 1967, before a population policy was established, the Prime Minister signed the United Nations World Leaders' Statement on Population. Beginning in 1968, the Cabinet approved the development of family planning services by the Ministry of Public Health (MOPH) on a research basis.

In late 1969 the NESDB, together with MOPH and IPS, prepared a comprehensive report for the Cabinet on the adverse effects on economic and social development of the high rate of population growth and strongly recommended the adoption of a population policy.

In March 1970 the Cabinet accepted the report and announced a national Population Policy. The policy statement gave support to voluntary family planning in order to resolve the various problems related to the high rate of population growth.

## Family planning activities of the Government

After the Government announced a national Population Policy, MOPH established a five-year plan for the

National Family Planning Program (NFPP) to be included in the five-year Social and Economic Development Plan (1972-1976) with the objectives of:
(i) reducing the population growth rate from over 3 per cent to about 2.5 per cent by 1976 ;
(2) informing and motivating eligible women, particularly those living in rural and remote areas, about the concept of family planning and making services readily available throughout the country;
(3) integrating family planning activities and overall maternal and child health services and thus mutually strengthening activities in these closely related fields.

The primary responsibility for the implementation of the national family planning program was assigned to MOPH, while NESDB serves as co-ordinator of all population activities. It was decided that family planning activities would be integrated into the existing health services of MOPH and of other governmental agencies providing health care. Thus 84 provincial hospitals and more than 3,700 rural health centers and municipal health centers in the large municipalities participate fully in the program.

Government activities emphasize three methods of contraception: the IUD, oral contraceptives and female sterilization. In addition, contraceptives are widely and readily available through commercial channels.

## Private family planning groups

Major activities in the field of family planning are carried out by the Planned Parenthood Association of Thailand (PPAT) which has been active for a number of years and became a full member of IPPF in 1975. Its role is primarily in the areas of public information, education and training, and it cooperates closely with the NFPP.

## CREARER 異

## METHODOLOGY: DESIGN, ORGANEATYON AND IMPLEMENTATION

### 2.1 OUTLINE OF THE DESIGN OF THE SURVEY

The sample for SOFT/WFS consisted of 4,465 households selected from 267 clusters. It was based on a subsample of listings of households prepared for Round III of SPC and was approximately an equal probability national sample. $1 /$ However, in the final processing of results, sample clusters were weighted to compensate for small original deviations from equal probability and also for differential non-response.

A total of 4,471 sample households was selected originally for interviews, but six of them were deleted during the data-processing stage due to out-of-coverage error, yielding the final sample of 4,465 households. As one sample block covered a vast area, it was decided that the area would be subsampled and only one-fifth of the 80 households in it were enumerated. These households were later duplicated five times during the data processing phase.

A schedule was used to list the members of every household and to select the women eligible for the fertility interview. To be eligible, a respondent had to be an ever-married woman aged under 50 years who had slept in the household "last night". The sample identified 4,002 eligible women. Any adult who was a usual resident of the household could answer the household schedule. The fertility questionnaire, however, had to be answered by an eligible woman. Field work for the Fertility Survey was conducted by female college students under the supervision of IPS. A Community Survey was also conducted in the rural areas.

Using the same sample of households, NSO conducted a household interview to obtain data on household members, family income, household and business assets and housing characteristics.

In a predominantly agricultural country, based on individual proprietor farming, income data could be obtained only indirectly in terms of farm size, crop yields, etc. A great deal of work was done to convert these into monetary terms to obtain relative income levels for use as additional background variables in the study of differential fertility.

[^1]The household questionnaire was also used to select men eligible for the husband's interview. 2/ The sample consisted of 3,438 males whose wives would be eligible for the fertility interview. The purpose was to match the two interviews case-by-case so that fertility could be studied in relation to the husband's fertility preferences, ideas about costs and benefits of children, perceptions of wife's work opportunity as related to child care, and knowledge and practice of contraception. It also provided an opportunity to compare the husband's and wife's responses on certain items. It was expected that the final number of interviews available for matching would fall short of the original number of eligible husbands due to additivity of non-responses from the two interviews conducted independently, movement of households or of individuals, and due to errors in sample implementation and manual matching to records. $3 /$ Complete and correctly matched interviews were achieved for 2,967 couples. The data presented in this report on household income and assets and from the husband's questionnaire cover only the matched interviews. Further analysis of these data, covering the larger sample of households and husbands, may be carried out later.

### 2.2 ORGANIZATION OF THE TECHNICAL STAFF

In view of the joint responsibility of IPS and NSO in implementing SOFT, Professor Visid Prachuabmoh, Director of IPS, and Mrs. Anuri Wanglee, Director of the Population Survey Division of NSO, were appointed Co-Directors of the project. An administrative committee comprised of representatives of NSO and IPS was organized under the joint chairmanship of the Co-Directors. The functions of this committee were to make decisions on administrative matters and to give technical advice to the Survey staff.

NSO is the Government agency responsible for compilation and collection of statistical data at the

2/ An eligible male was a usual resident of the household who had a wife under 50 years of age who was also a usual resident of the household.
3/ Generally the husband was interviewed about a month before the wife, though in some cases the difference was as much as three to four months. The majority of husband's interviews were conducted over a three-week period in March-April 1975, and the wife's interviews over a six-week period in April-May 1975, although some follow-up cases were interviewed as late as June 1975.


Table 2. Numbers of households, eligible husbands and eligible women; percentages of interviews completed; and numbers of currently married women interviewed and couples matched and interviewed, by region

| Region | Number of households | Household and Husband's Surveys |  |  | Fertility Survey |  |  | Matching of couples |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Per cent of household interviews completed | Eligible husbands |  | Per cent of household interviews completed | Eligible women |  |  | Eligible |
|  |  |  | Number identified | Per cent interviewed |  | Number identified | Per cent interviewed | married women interviewed | matched with completed interviews |
| TOTAL | 4,465 | 96.3 | 3,438 | 96.0 | 93.5 | 4,002 | 94.4 | 3,481 | 2,967 |
| North | 1,096 | 97.5 | 814 | 98.4 | 93.6 | 911 | 93.2 | 778 | 708 |
| Northeast | 1,449 | 97.4 | 1,240 | 96.5 | 96.1 | 1,407 | 92.5 | 1,197 | 1,055 |
| South | 532 | 95.3 | 382 | 96.1 | 91.0 | 440 | 97.5 | 398 | 344 |
| Central ${ }^{1 /}$ | 1,048 | 95.9 | 773 | 97.0 | 91.5 | 928 | 98.6 | 842 | 704 |
| Bangkok Metropolis | 340 | 90.9 | 229 | 80.8 | 91.8 | 316 | 92.4 | 266 | 161 |

Source: SOFT, Unpublished data.
1 Excluding Bangkok Metropolis
national level. It is organized into seven divisions, each with its own responsibilities. For the SOFT project, the Population Survey Division was in charge of the technical planning and co-ordination, in co-operation with related units such as the Statistical Techniques, Field and Data Processing Divisions.

In addition to the Co-Director, the senior staff for the project at NSO consisted of two technical personnel, one of whom worked fulltime throughout the Survey preparing all documents required for the Survey and for processing of the data. Six statisticians from the Population Survey Division assisted in the training of the field staff and in field supervision.

The Field Division at NSO and the provincial and regional field offices were responsible for supervising the field work. During the main field work all field offices in the 35 sample provinces and four regional field offices were used as the focal points for meetings, distribution of supplies and payment of salaries. Supervisors came in for regular consultations and to report their progress.

The Data Processing Division was responsible for coding, editing, punching and tabulation. All divisions provided special groups of staff members to work on this project.

The organizational chart of the Survey personnel from NSO is shown below:


IPS served as the headquarters for the Fertility Survey and Community Survey. All questionnaires, manuals, field work, supplies and operations were handled by IPS which also made available to the Survey its personnel and facilities. Editing and coding of the Fertility Survey were carried out at IPS. The Data

Processing Division at NSO assisted in key-punching and tabulation of the results.

The organizational chart of the Survey personnel from IPS is shown below:


### 2.3 TIME SCHEDULE

A. Preliminary Activities:

## Actual

(1) The Government of Thailand decided formally to participate in the World Fertility Survey.

January 1974
(2) The representatives of the agencies involved made preliminary plans for the project, assisted by ISI/WFS in designing the project and preparing the sample design.

February-May 1974
(3) NSO participated in pretesting an early draft of the Economic Module developed by ISI/WFS.
(1) Preparation of questionnaires and instruction manuals for the pretest
(a) Household and Husband's Surveys
(b) Fertility and Community Suiveys
(2) Pretest
(a) Household and Husband's Surveys
(b) Fertility Survey
(3) Completion of questionnaires, instruction manuals, and other documents required for training and field work
(a) Household and Husband's Surveys
(b) Fertility and Community Surveys
(4) Selection of the SOFT sample and preparation of list of sample households
(5) Recruitment of field staff for the Fertility Survey
(6) Training of field staff
(a) Household and Husband's Surveys
(b) Fertility Survey
(7) Interviewing
(a) Household and Husband's Surveys
(b) Fertility and Community Surveys
(8) Preparation of codes and editing and coding
(a) Household and Husband's Surveys (including transcribing line number of husband and wife from the two surveys)
(b) Fertility Survey
(9) Key punching and verification
(10) Machine editing
(a) Household and Husband's Surveys
(b) Fertility Survey
(11) Preparation of table specifications and computer programming of tabulations
(12) Analysis of data and preparation of First Report

Mar. 1975
Apr.-June
1975
Mar. 1975
Mar. 1975
Mar. 1975
Mar. 1975

| Jan.-Feb. | Jan.-Feb. |
| :---: | :---: |
| 1975 | 1975 |

Feb. 1975 Feb. 1975

| Jan.-Feb. | Jan.-Feb. |
| :---: | :---: |
| $-\quad 1975$ | 1975 |

Feb. 1975
Mar. 1975
Dec. 1974
Oct. 1974
Dec. 1974
Feb. 1975

Jan. Feb. 1975

| June-Oct. | Oct.-Nov. |
| :---: | :---: |
| 1974 | 1974 |
| June-Oct. | Oct.-Dec. |
| 1974 | 1974 |

### 2.4 PUBLICITY

The project was publicized widely through spot news items over radio and television, as well as through articles in both Thai and English in national and local newspapers and through other means of communication (e.g. the municipality public address system). In addition, information was transmitted informally through personal contacts.

### 2.5 TRANSLATION OF QUESTIONNAIRES

The draft questionnaires were translated from English into Thai, translated back into English by persons not involved in the original translation and checked for accuracy against the original.

For the household questionnaire, the wording of questions was discussed with the regional statistical officers of the Field Division of NSO who, on the basis of previous practical experience, suggested alterations and improvements to make the wording more akin to common usage. Further, the interviewers and supervisors had already been working on the SPC project in the same areas (and usually belonged to those areas) and were familiar with the local situation and language. As a result, no particular interviewing difficulties appeared during the main field work, and most of the questions could be easily understood and answered.

Translation of some parts of the husband's questionnaire proved difficult due to the use of attitudinal or hypothetical questions. Perhaps the most difficult concept was that of "expectations" There is no easily understood Thai translation for the word "expect" and the Thai word used is closer in meaning to the English word "hope".

In general there were fewer difficulties in translation of the fertility questionnaire as similar questions had been used in previous surveys by IPS. But special care had to be taken to modify the wording of some questions to suit the particular cultural context of Thai respondents. A literal translation sometimes loses its meaning in the Thai context. In some instances the original "yes-no" categories appeared confusing in relation to the translated version of the question and had to be adapted to the actual form of the responses.

### 2.6 RECRUITMENT AND TRAINING OF FIELD STAFF

### 2.6.1 Household and Husband's Surveys

## Recruitment

These Surveys were conducted by 98 male enumerators and 44 field supervisors. The enumerators were high school graduates, 80 of whom had been recruited for the SPC project; 18 enumerators were permanent field statistical officers, and they replaced those SPC interviewers who, in the light of the results of the pretest,
were not able to conduct household and husband's interviews of the desired quality and were therefore excluded from the field work in the main Surveys. The field supervisors were college graduates, all of whom were recruited from the SPC project.

## Training

All trainees were iNSO statistical officers with previous survey experience. They were instructed by SOFT technical staff using the interviewers' and supervisors' manuals. As the regional statistical officers also participated in the project, the technical staff of the Population Survey Division first briefed them on all aspects of the Surveys. Eight regional statistical officers then trained the provincial statistical officers of the 35 sample provinces.

The training of field supervisors and interviewers was carried out in March 1975 in two training sessions. In the first, two technical staff members trained the supervisors in a seven-day session, with other trainers participating to observe training methods. Following the training, problems and methods of improving the training were discussed. In the second, an eight-day session, the enumerators were instrusted in survey procedure. The supervisors also participated, and each supervisor observed the enumerators in his team to identify any who might require special attention and guidance during field work.

In class the training session emphasized practice interviews. Two days were devoted to practice in the field under the careful supervision of central staff. The final day of training was spent in discussion of all problems encountered in the field and procedures for solving them.

### 2.6.2 Fertility and Community Surveys

## Recruitment

A committee of six IPS staff members established criteria for screening and selection of applicants for positions as interviewers. The committee also prepared a list of possible candidates for supervisory posts on the basis of academic qualifications and experience in supervisory and research work.

The interviewer candidates were undergraduate students from a number of faculties of Chulalongkorn University. Major criteria in selecting applicants were ability to speak the local language, willingness to work, previous field work experience and good health. The numbers of persons involved in the process of recruitment and selection of survey personnel were:

## Training

Five trainers were provided by IPS from its technical staff. A formal training course for supervisors was considered unnecessary as they had already had extensive training and experience in research activities,

| Personnel | Applicants | Accepted for iraining | Passed training | Source of xecruitment |
| :---: | :---: | :---: | :---: | :---: |
| Pretest: |  |  |  |  |
| Supervisors | 3 | 3 | 3 | IPS staff |
| Interviewers | 10 | 10 | 10 | IPS permanent coders |
| Survey: <br> Supervisors | 161/ | 16 | 16 | IPS staff \& University instructors |
| Interviewers | 150 | 60 | 60 | Undergraduate students |
| Both: |  |  |  |  |
| Coders | 15 | 10 | 10 | IPS permanent coders 3 |
| Editors | 10 | 10 | 10 | graduate fellowship students |

1/ Six were invited by IPS to participate in the Survey.
including surveys. Rather, the trainers and supervisors met as a group to discuss the main ideas and concepts of the questionnaire and to arrive at a common understanding of its content and meaning.

The training program for the interviewers comprised five days of lectures and discussions of the topics covered by the questionnaire, followed by two days of role-playing and field practice interviews under the guidance of supervisors. During the training all the rudiments of conducting an interview were fully covered. There was no further training during field work, but a review session ,was held in the middle of the field work period at which the supervisors and interviewers discussed solutions to problems encountered and ways of further improving the quality of the field work.

### 2.7 THE PRETEST

### 2.7.1 Household and Husband's Surveys

The questionnaires for the Household Survey and the Husband's Survey, together with instruction manuals for enumerators and supervisors, were prepared in October and November 1974. As the questions had not been tested previously and as the interviewers lacked experience in asking attitudinal questions, NSO conducted a pretest in December 1974, covering about 1,700 households. The large size of the pretest resulted primarily from the decision to utilize it as an integral part of the training for the final Survey. Due to the fact that the main Survey had to be conducted between two
rounds of SPC, there was not sufficient time available for a full-scale training program prior to the start of field work. Other functions of the pretest were to:
(1) test each question in the questionnaires;
(2) test the suitability of the format of the questionnaires;
(3) test the performance of the enumerators, i.e. their ability to interview respondents and record answers, as the forms differed from those used in SPC;
(4) familiarize the enumerators with the questionnaires and the procedures used;
(5) determine the extent to which respondents understood and reacted favorably when answering questions.

## Training and organization

Training was carried out in two sessions, the first at NSO, Bangkok, from December 2 to 7, 1974, for supervisors and the second at a Training Center in Nakhon Sawan, from December 10 to 20,1974 , for enumerators. In the first session, 39 supervisors reviewed the interviewers' manual and the procedures for interviewing, following which they covered the supervisors' manual, dealing with supervision, checking and control procedures and the forms used.

In the Nakhon Sawan session, the enumerators were divided into four groups of 25 each, with 8 NSO staff members serving as trainers. Ten days were spent in
(3) whether the household had a business and, if so, the amount of net income from business;
(4) income from other sources;
(5) total number of living children.

If the questionnaires were not complete or were inconsistent, the supervisor would complete or correct them by re-interviewing the respondent at the time of checking. The supervisor was required to check two households every day for each enumerator in his team. In the case of incomplete household and husband's questionnaires the supervisor had to visit that household to find out whether or not the recorded result codes of the interview were correct.

## Supervision of field work

The supervisors performed field editing, spot checking, etc., to maintain quality control. The regional statistical officers, provincial statistical officers and officers from the Population Survey Division joined in the observation of the field work, checked questionnaires, instructed enumerators, and solved problems. The project Co-Directors and the trainers of the SOFT project made spot checks in the field and maintained overall supervision of the operation.

## Field follow-up

During the preliminary edit a list was prepared of all cases of non-response. In the Household Survey most of these were due to listing of vacant or demolished houses, or to inability to locate houses. Most of the uncompleted interviews in the Husband's Survey were those where the eligible male was not at home when the enumerator called. (See Section 2.9 for detailed information on response rates.)

Due to high non-response rates in some areas, a special follow-up operation was mounted. It lasted approximately two weeks and was carried out by supervisors and enumerators who had participated in the main Survey; this was carried out in May 1975 after completion of field work on Round IV of SPC. A total of 132 households were contacted in follow-up interviews for the Household Survey, and 381 cases for the Husband's Survey.

In Bangkok Metropolis, an additional sample block of 18 households was selected for interviews, due to the relatively high non-response rates in the Metropolis. These interviews, conducted at the same time as the follow-up, covered the household, husband's and fertility questionnaires and involved both NSO and IPS teams.

### 2.8.2 Fertility and Community Surveys

The field workers were grouped into eleven teams, each with one or two supervisors (or one supervisor and one assistant supervisor), four or five interviewers, one field editor and one driver. Three teams were allocated to the North; three to the Northeast; three to the

Central Region; and two to the South.
During field work, the interviewers were accompanied by local statistical officers who served as guides in locating respondents. As in the pretest, some respondents declined politely to answer questions and others were too shy to divulge what they thought were their private affairs. Some interviews were taped so as to improve the quality of the interviews. The respondents felt at ease with the use of tape recorders and enjoyed listening to the recorded responses. Team members arranged to have discussions almost every night to evaluate and improve performance.

The general indication was that the interviews were well done. The interviewers adjusted easily to their colleagues, to the Government officials and to the local people, and kept to their work schedules. The supervisors provided assistance and guidance. The Co-Directors, accompanied by two field editors, carried out spot checks and observed the field work. As a result of the editing done by the field editors and supervisors, the time required for office editing was reduced considerably.

The Community Survey was conducted simultaneously with the Fertility Survey. A "community" was defined as a non-municipal area, thus limiting the Survey to villages in rural areas. One field supervisor from each team was given responsibility for interviewing the village head man or his assistant.

### 2.9 RESPONSE RATES

### 2.9.1 Household and Husband's Sürveys

After the initial interview operation it was found that non-response rates for the Household and Husband's Surveys were unacceptably high and a follow-up procedure was initiated, as mentioned in the previous section. For the whole country, 96.3 per cent of the households in the sample were successfully interviewed using the household questionnaire. Most of the non-response at this stage, i.e. 2.4 per cent, resulted from houses that became vacant or were demolished between the time of the SPC household listing and the Survey interviews. In about 1.3 per cent of the cases, no acceptable respondent was at home, the interviewer was unable to find the house, or other reasons were cited for non-response. In the 4,301 interviewed households, 3,438 eligible husbands were identified and 96 per cent of these completed the husband's questionnaire. Most of the non-response at this stage was due to eligible husbands not being at home at the time of the enumerators' visits. Refusals to be interviewed were rare. The most serious interviewing problems were encountered in Bangkok Metropolis, where interviews were completed in only 90.9 per cent of the sample households and for only 80.8 per cent of all eligible males. In all other areas the completion rates for both the household and husband's interviews were at least 95 per cent. For data by region, see Table 2.

Non-response on individual questions was generally
small, under 1 or 2 per cent, particularly in relation to household and business assets and housing characteristics. For questions on income, figures on wages and salaries were not available for about 15 per cent of the persons reported as working. This was the only notable case of non-response. Amount of land used and crops raised were obtained from almost all respondents; 1.5 per cent of those who rented land did not specify the amount of rent paid. All but about 2 per cent specified the numbers of various kinds of animals raised and income from raising fish, silkworms, etc. Similarly, income from the first business was available for over 98 per cent of the cases. Seven per cent of the households received rent for land, and all but 8 households specified the amount of rent received.

### 2.9.2 Fertility Survey

For the Fertility Survey, 93.5 per cent of the sample households were interviewed successfully, the highest response rate being in the Northeast ( 96.1 per ceni) and lowest in the South ( 91.0 per cent). For the country as a whole, 94.4 per cent of all eligible women identified were interviewed successfully. A considerable proportion of the non-response rates in almost every region resulted from the fact that no one was at home. This was due partly to the limitation of time, since each team visited a village for only one or two days. In the municipal areas, however, more attempts were made, because the interviewers were based in or near the sample blocks. They were asked to revisit the incomplete or uncontacted sample households in municipal areas every evening after they returned from the sample villages, until the team finished the field work in that province.

When attention is directed to response rates on individual questions, perhaps the most important data are those involving dates. Fifteen per cent of the respondents were unable to name the month of their birth. Less than 1 per cent were unable to give the calendar year of birth, and gave age in years instead. The interviewers were instructed not to compute calendar year from a reply giving years of age.

For first births, month of birth was not available in about 8 per cent of the cases; less than 3 per cent were unable to give the year of birth. Either year of birth or age was reported for all but 0.5 per cent of first births. For second births, month was lacking for about 7 per cent, year for 3 per cent and both year and age for 0.5 per cent. Comparable rates were found for births of higher order, with data tending to be more complete for more recent events.

Age at death was given for all but 29 of the nearly 2,000 deceased children reported in the Survey. However, data on wasted pregnancies was extremely poor, with no dates available for over 40 per cent of the cases reported. The high non-response rate is not important as the analysis is in terms of birth intervals rather than pregnancy intervals.

Dating of marriages was less complete than dating of births. For current marriages, month of marriage was not available for about 22 per cent, but year of marriage was reported for all but 0.5 per cent. For former marriages, i.e. those already terminated, months of beginning and termination of first marriage were lacking for 40 per cent of those reported and years for 1.5 per cent; for second marriages, the figures were 50 per cent and 7 per cent respectively.

Questions on duration of lactation were answered by all but about 0.5 per cent of the respondents. The answer was requested in months, but there was significant rounding to the nearest year. For lactation in the open interval, 10 per cent gave the duration of lactation as one year; 11 per cent reported two years; and 7 per cent gave three years; 30 per cent were currently lactating. For the last closed interval rounding was even more pronounced, with lactation for one, two and three years' reported by 18,22 and 10 per cent respectively.

When asked about ideal family size, 97 per cent of the respondents gave numerical answers, another 2.5 per cent gave answers such as "depends on God", "as many as possible", etc., and 0.5 per cent did not answer. On the number of additional children wanted, 96 per cent gave numerical replies, 2 per cent gave other answers and 2 per cent declined to state.

### 2.10 OFFICE EDITING AND CODING

### 2.10.1 Household and Husband's Surveys

Completed questionnaires were sent to NSO where they were edited by a specially trained team. This was done in two steps. First, preliminary editing was done to check the completeness of the questionnaires and to compare them with the sample list. This check was carried out in the Population Survey Division, and incomplete forms were followed up immediately by enumerators and supervisors who had participated in the main Survey. A second, detailed editing checked all questions and responses preparatory to coding. This operation was carried out by eight editors and four supervisors in the Editing and Coding Unit of the Data Processing Division, NSO.

Most questions in the household and husband's questionnaires were precoded, and a group of eight coders and four supervisors transferred the codes to boxes at the margins of the questionnaires. Coding of occupation and other open-ended questions was done by four coders and two supervisors who were experienced in coding occupation for the NSO Labor Force Surveys.

### 2.10.2 Fertility Survey

As the teams finished field work in each province the completed questionnaires were returned to IPS. Office editing was done by a group of ten editors who were experienced coders. They first checked all items to ensure that the interview had been completed and to see
whether all steps had been followed correctly. Second, consistency checks were carried out, e.g. comparing the date of birth and age of each child as recorded in the household questionnaire and in the matemity history, etc. Corrections were made where appropriate.

Upon completion of office editing, the wife's line number was recorded on the cover sheet of each questionnaire. The questionnaires were then sent to NSO for matching and addition of the husband's line number, while the wife's line number was added to the cover sheet of the husband's questionnaire.

Coding of all items except occupation was done by ten experienced IPS coders. The first step, household coding, required one card and the second, individual coding, eight cards. Due to an oversight in printing no coding boxes were provided on the fertility questionnaire and it was necessary to use separate coding sheets. In order to ensure comparability and quality, the coding of occupation was done by the experienced group of coders at NSO

### 2.11 MATCHING OF RECORDS FROM THE HUSBAND'S AND WIFE'S INTERVIEWS

A major goal of SOFT was to obtain complete interviews from as many married couples as possible within the Survey, and the task of matching questionnaires was assigned to a special NSO team of six coders and one supervisor. The first step was to verify that the respondents in the two Surveys were from the same household. Second, when this had been verified, the line number of the eligible wife from the fertility questionnaire was recorded on the husband's questionnaire and vice versa.

Not all matched cases represented completed interviews, as there were cases of incomplete interviews of either the husband or the wife. Table 2 shows that the matching procedure identified 2,967 . couples for whom both interviews were complete.

It is important to note that this report presents two basic sets of tabulations:
(1) All tables that do not involve any variables from the Husband's Survey refer to all eligible women for whom interviews were completed in the Fertility Survey, whether matched or not.
(2) All tables involving data for currently married males and for couples refer only to matched couples for whom interviews of both husband and wife were complete.

### 2.12 MACHTNE EDHTHG

All punched cards from the Household and Husband's Surveys were edited by computer. The editing instructions were prepared by the technical staff of the project and the editing progxam was written by three programmers of the Data Processing Division of NSO and two IPS research assistants. The editing was carried out immediately after all questionnaires had been punched and verified.

Machine editing involved five steps:
(1) Structural Check A: to list all cards and check the completeness of sample households against the sample list.
(2) Structural Check B: to check the completeness of the number of cards for each household and husband's questionnaire.
(3) Column Check: to insure that all columns that were required to be blank in all interviews had no entries, and that no shifts in columns had occurred during punching.
(4) Range Check: to check that only eligible codes appeared in each column and that no "wild" codes were present.
(5) Consistency Check: to check the consistency of codes between columns and cards. This check tested whether the skip pattern of the questionnaire was followed correctly and whether any logical inconsistencies were present.

The editing was done step by step. Mistakes in each step were corrected before the next step was started. As each stage of the five phases of editing and updating was completed it and the previous edits were rerun. This process continued until the data were completely clean (i.e. no errors were detected in any of the five steps).

While a special edit program was written for the Household and Husband's Surveys, most of the editing of the Fertility Survey was done by the MINITAB program. After machine editing the frequency distributions of all variables were obtained.

Following the matching of the husband's and wife's questionnaires the husband's and wife's files were merged into a single file for tabulations. To avoid errors at this stage a listing of merged households was made from NSO and IPS files and checked for mismatched cases.

## BETHODOLOGY:

## QUESTIONNATRES AND VARIABLES

### 3.1 HOUSEHOLD QUESTIONNAIRE

The household questionnaire was derived in part from WFS Economic Modules (Income and Assets) with modification on a number of significant points. The questionnaire was designed to obtain information on family income, household and business assets and housing characteristics. It also provided lists of household members from which to select eligible males for the husband's interview.

One questionnaire was administered to each sample household. The respondent was preferably the head of the household, or his spouse, although any adult member of the household able to give details was acceptable as a respondent. Very old or sick persons and children were not eligible to be respondents. It was not necessary for the same respondent to answer all questions; other household members could help recall factual information where necessary.

### 3.1.1 Contents of the Questionnaire

The household questionnaire, which is reproduced in Appendix II, dealt with five major areas.
(1) Listing of household members and earning from employment. Under question 1 , every usual resident of the household was listed and data on relationship to the head, sex and age were obtained. For persons aged 12 or over, questions were asked on marital status, whether he or she had worked for wages or salary during the past 12 months, and, if so, the amount of average monthly earnings. Finally, males eligible for the husband's interview were selected. These were married men whose wives were under 50 years of age and were usual residents of the household.
(2) Income and assets related to farming and animal husbandry. Questions 2 through 15 related to whether the household was engaged in farming and, if so, the total area of cultivated land, particular crops raised, and area used for each type, including multiple cropping. Also, if any of the land cultivated was not owned but rented, the amount of rent paid was asked. These questions were designed to obtain net income from farming. Similarly, data were obtained on numbers of livestock and poultry of various kinds raised over the past 12 months. For raising of fish or silkworms, etc., approximate net income was obtained directly. Indicators of the size of the farm, e.g. use of power equipment and employment of persons from outside the household, were also obtained.
3) Income and assets related to business. Questions 19 through 25 dealt with whether anyone in the household owned or had partnership in a business and, if so, the net income derived. Since it was possible for a household to engage in a number of businesses, details on up to three businesses were obtained. Also, where net income could not be given directly, gross income together with expenses on specified items (e.g. raw materials, building rent, water and power supply etc.) were asked.

A series of questions was used to obtain other indicators of the size of the business enterprise. These included questions on whether the place of business was separate from living quarters (to distinguish between a more or less substantial business and vendors or homebased artisans), whether motor vehicles and power equipment were used in the business, and finally, whether any persons from outside the household were employed in the business.
(4) Other income and assets. Questions 16 through 18 and 26 through 31 were concerned with income received from rent of land and buildings; miscellaneous sources of income; ownership of the living quarters occupied by the household; and possession of bank accounts, bonds, securities and life insurance.
(5) Housing characteristics and possession of household assets. Questions 32 through 37 were intended to obtain additional indicators of the standard of living. They dealt with source of the water supply, and whether private or public; type of materials used in construction of the living quarters, including flooring and roofing; whether the living quarters had electric fan, air conditioner, television, radio, watches or clocks, sewing machine, bicycle, motorcycle and automobile.

### 3.1.2 Background Variables

A major function of the household questionnaire was to provide data for measuring the economic status of the household. Three variables were defined based on these data, namely, family income, size of family enterprise and family standard of living. The derivation of these variables is presented in detail.

## Family income

Income of all individuals related to the head of the household was summed and, for tabulation, the total family income was ascribed to each eligible couple in the household that was related to the household head. These data were then used to divide the sample into five nearly
equal parts corresponding to five levels of income.
Family income included the following components.
(1) Wages and salaries. This is the sum of the wages and salaries of every household member related to the head of the household.
(2) Net income from farming. This was estimated indirectly from the farm size and crops grown. The method of converting each type of crop into monetary terms was simply to apply a fixed figure for net income per rai (approximately 0.4 acre) for each type of crop farmed by the household; these were summed to obtain total net income from farming. Information on yield per rai, average farm price and cost of farming used in the computation were obtained from independent studies on farm income and cost from the Division of Agricultural Economics, Ministry of Agriculture and Co-operatives.

Since yield per rai and cost for some crops varied from province to province, calculation of net income was made on a provincial basis for some crops (e.g. rice) and on a regional or national basis for others, depending on the type of information available.

For households farming on rented land, the amount of rent paid had to be deducted from the total net income received. Though an attempt was made to obtain directly the amount of land rent paid, these data were not exactly comparable to the data on net farm income estimated indirectly. Hence for the purpose of calculations it was assumed that on the average one half of the net produce from any land not owned constituted the rent paid for that land.
(3) Income from animals raised. A listing of the five categories of animals most commonly raised by the households, i.e. pigs, cows, buffaloes, hens and ducks, was specified in the question on animals raised. Income from animals was then estimated indirectly. Since buffaloes are usually used as work animals rather than for sale, they were not included in the calculation of income.

The procedure for estimating net income in monetary terms from animals raised was the same as that used for estimating the farm income. Data on costs, incurred in raising each type of animal were obtained and subtracted from the average sales price for that type.
(4) Income from selling fish, shrimp or silkworms etc. This was obtained directly from income as recorded in the questionnaire.
(5) Net income from business. This included all types of business of the household. Where the net income could not be obtained directly, gross income and expenses were estimated separately.
(6) Rental income from land. This included direct income from rent of land as well as income obtained in
kind, generally part of the crop raised.
(7) Rental income from house. This was obtained directly.
(8) Other income. This included all other sources of income received by members related to the household, e.g. property rent other than land and house, bonuses, pensions, etc.

## Size of family entexprise

This variable was relevant to all non-municipal families engaged in either agriculture or business, and was applied to each eligible couple related to the household head. If the household had no family enterprise, if the respondent was not related to the household head, or if the household lived in a municipal area the couple was classified as having no family enterprise.

For all other couples the size of family enterprise was derived from the values assigned to each of the components listed. These values, ranging from zero to a maximum of three, are shown in the left margin ( -0 , $-1-$, etc.) and the sum for each family enterprise was the basis for classifying it by size according to five categories with total values of $1-2,3,4,5$ and $6-16$, ranging from smallest to largest. These values were chosen because they resulted in an approximately equal distribution of families among the five categories. For those components including income received, the amounts shown are for annual income.

## Land ownership and cultivation:

-0- household did no farming
-1- household farmed but owned no land, or household farmed and owned less than 10 rai of land $1 /$
-2- household farmed and owned 10 to $19^{\circ}$ rai of land
-3- household farmed and owned 20 or more rai of land

## Use of farm equipment

-0- used no equipment
-1- used one-two pieces of equipment
-2- used three-four pieces of equipment
-3- used five or more pieces of equipment

## Number of farm employees

-0- none
-1- one-two employees
-2- three or more employees

## Animals owned

-0. owned no large animals (cows, buffaloes and horses)

1/ One rai is approximately 0.4 acre or 0.16 hectare.
-1. owned at most one medium sized animal (pigs, goats, etc.)
and up to five birds (chickens, ducks, birds, geese)
-1- owned up to two large animals, up to 10 medium animals, and up to 20 birds
2- cases other than the above
Income from fish and silkworms
-0. did not raise either, or received less than 500 Baht ${ }^{2 /}$ income
received 500-2,000 Baht income.
received 2,000 Baht income or over

## Business income

no net income received
received less than 3,000 Baht net income received $3,000-10,000$ Baht net income received 10,000 Baht net income or over

## Business vehicle

-0- did not use vehicle

1. used vehicle

## Business equipment

-0. did not use any business equipment
-1- used equipment

## Business employees

-0- no employees
1- one or two employees
-2- three or more employees

## Income from a rented building

-0. did not rent out building or received less than 6,000 Baht rent per year.
-1. received 6,000 Baht or more rent

## Standard of living

The standard of living was measured by questions on housing quality and ownership of consumer durable goods. The components and their values are given, and the total of all values for each household was used to assign it to one of six categories. For non-municipal areas, the classification of standard of living was: low (0-4), medium (5-6) and high (7-23). For municipal areas the values were: low ( $0-10$ ), medium (11-15) and high (16-24). It should be noted that the non-municipal and municipal classifications are not comparable due to differences in life styles and levels of living.
2) Twenty Baht $=$ approximately US $\$ 1$.

Banh account
-0. had no bank account
-1- had bank account
Household waier supply
-0- from canal and other sources
public pipe or well
private pipe or well

## Building materials used in construction of house

-0. local and reused materials
-1. wood and other less expensive materials
-2 - cement or wood and cement

## Type of flooring

-0- clay
1- wood and other less expensive materials
-2- cement, rubber tile, and expensive materials

## Type of roofing

-0- thatch
-1- tin or other less expensive materials
-2- cement or cement tile

## Electricity in the household

-0- no electricity
-1- had electricity
Ownership of consumer durable goods. Values of ten items were assigned as follows:
-1- each for electric fan; television; radio; watch (including clock); sewing machine; bicycle; and motorcycle
-2- each for air conditioner; refrigerator; and automobile

### 3.2 HUSBAND'S QUESTIONNAIRE

The husband's questionnaire was based on the WFS Cost and Benefits Module. In addition, questions about knowledge, attitude and practice of contraception and about wanted family size were repeated from the fertility questionnaire to permit a comparison of the responses of husband and wife. A number of modifications were made in the questions, as the Module was designed originally for female respondents.

Completion of the household questionnaire, containing a list of all household members, made it possible to identify the eligible males in the household. An eligible male was a usual resident of the household who had a wife who was a usual resident of the household and under 50 years of age. The husband's questionnaire was used in interviewing all eligible males.

## 3.g. 1 Comenter of the Questionnaire

The husiband's questionnaire, which is reproduced in Appendix II, contained four sections.
(1) Information about age, duration of marriage and living children. Section 1 asked for the month and year of birth of the respondent and his wife. If the year of birth was not known the interviewer was instructed to obtain the current age. Duration of marriage was sought by asking the month and year of marriage. If these data were not available, an estimate of the number of years married was obtained.

Information requested about living children included the number of living children from the respondent's present wife; living children from the respondent's previous wives, if any; if the respondent's wife had been previously married, the number of her own living children with her previous husband; number of adopted living children of the respondent. Information on sex, age and presence or absence in the household of each child was recorded. Marital status for children 12 years old or over was also obtained.
(2) Cost and benefits of children. Questions in this section related to the husband's views on the advantages and disadvantages of children. In the original WFS Module the wording was with ieference to large and small families. In the present study the interviewer was instructed to give a number of six or more as an example of many children and two or less as an example of few children. Views on the financial burden and educational burden resulting from having different numbers of children and the leveb of education necessary for children were also obtained in this section.

Respondents with children aged eight years and over living in the household were asked whether these children helped around the house or in the family enterprise, and the degree of help given. The respondents were also asked about their general views as to whether "these days" parents could expect financial help from employed unmarried and married children. Respondents with unmarried children aged 12 years and over were asked whether those children were working for money and giving financial help to parents.

The last set of questions in this section concerned the respondent's expectation concerning reliance on financial support and expectation of living with children in old age.
(3) Employment of the wife. The questions in this section were adapted from the set of questions on "Opportunity Cost of Wife's Time" in the WFS Economic Modules. The objective of this set of questions was to obtain information to be used in analyzing the relationship of the wife's labor force status to her fertility behavior. The questions were divided into three parts according to the wife's labor force status. The first part was for a
respondent whose wife had not worked during the past year. The eligible male was asked how their children would have been cared for if his wife had worked, and whether she could find suitable work if she wanted to work. For anyone who indicated that his wife could probably find work to earn money, an attempt was made to obtain an estimate of the potential wage rate that his wife would receive for a full-time job. The last three questions of this part asked whether his wife would like to work, his attitude toward her working and the reasons for that attitude.

The second part was to be answered by respondents whose wives had worked only in family enterprises during the past year. This section tried to ascertain whether children adversely affected the wife's ability to work in a family enterprise, how the children were cared for when the wife was working, and how they would be taken care of if the wife were to take up additional work to earn more income outside the family enterprise. Questions were also asked about the possibilities of work outside the family enterprise, the estimated potential wage rate for full-time work for the wife, and lastly, whether the respondent's wife would like to work and his attitude toward her working.

The third part, for respondents whose wives worked outside the family enterprises, asked questions on the type of work and time spent at work, means of child care while the wife worked and cost for that care, and whether children conflicted with the wife's work. Each respondent was also asked about his attitude toward his wife's working, the expectation of finding additional work and payment for full-time work and lastly, whether his wife wished to find additional work.
(4) Family planning. The data obtained in this set of questions provided a comparison of wife's and husband's responses. The questions dealt with the husband's knowledge and use of contraception which could be compared to questions in Section 3 of the fertility questionnaire.

The respondent was asked to report spontaneously on his knowledge and use of contraceptive methods. For those methods not mentioned spontaneously by the respondent, each method was named and described briefly and the respondent was asked whether he had ever heard of and ever used them. Finally, the respondent was asked whether he had ever heard of or used any other method.

Information on desire for more children, the number of additional children desired, and sex preference of the next child was asked. For those whose wives were currently pregnant, the sex preference for the expected child was asked and the number desired in addition to this one was also obtained. The total number of children wanted was asked using the question: "If you could choose the number of children to have during your whole lifetime, how many would you want?" A similar question was asked in the fertility questionnaire.

## 3.2 .2 解ackground Variables

Most of the variables derived from the husband's questionnaire are self-explanatory, but for two variables a brief explanation may be useful.
(1) Husband's expectation of financial help from his children. This variable was assigned four categories: (a) expects help from married and unmarried children; (b) expects help from unmarried children only; (c) expects help from married children only; and (d) does not expect help from children.
(2) Current labor force status of wife. Each respondent was assigned to one of two categories with several sub-categories: (a) husband whose wife was working (i) for wages or salary; (ii) in a family enterprise where children interfered "a great deal" with her work; (iii) in a family enterprise where children interfered "a little" with her work; (iv) in a family enterprise where children "did not interfere at all" with her work; and (b) husband whose wife was not woiking (i) but could find work and was interested in doing so; or (ii) for family or other reasons and was not interested in working.

### 3.3 FERTILITY QUESTIONNAIRE

The fertility questionnaire was almost identical to the WFS Core Questionnaire. The wording of some questions was modified to avoid ambiguous meanings and to provide a form suitable in the Thai cultural context. The questionnaire was designed for ever-married women in the child-bearing years residing in households. "Evermarried" was defined to cover more or less stable marital unions, whether formal or consensual. Though ideally the survey universe for a fertility survey would include all women exposed to the risk of child-bearing regardless of marital status, such a definition of the universe would have been inappropriate in Thailand, where almost all child-bearing takes place within stable marital unions.

Ever-married women under 50 years of. age were selected and interviewed using a de facto criterion: that the woman slept in the selected household "last night".3/ For this purpose, a short schedule was used for each sample household to list all household members (usual residents as well as those who slept in the household the night before). Data on relationship to the head, age, sex, and marital status were obtained for each member, and women eligible for the fertility interview were selected.

### 3.3.1 Contents of the Questionnaire

The fertility questionnaire, reproduced in Appendix II, covered five items.
(1) Socio-economic background. Data on the res-

3/ One per cent of the respondents were not usual residents of the household.
pondent's place of residence and migration status, size of community where she spent her childhood, educational attainment, race and religion were obtained in Section 1. This section also obtained month and year of birth of the respondent; if the year of birth was not available, the interviewer was instructed to ask for and obtain her current age.

In obtaining information on age, the respondent was asked to give the month and year of birth. There were two types of possible answers, the first being month according to the conventional method and year according to the Buddhist era, ( 1975 corresponding to 2518 in the Buddhist era). The second method, more commonly used in the rural areas, was to give the month according to the lunar calendar and year as the animal year in a cycle of twelve years, similar to the Chinese animal years.

In the first case, if month and year, or year only, were given in the conventional manner and year in the Buddhist era, age was not recorded in the field, but calculated by computer. in the latter case, a respondent giving the animal year of birth was also asked the number of cycles and referring to the age conversion table, the age as well as animal year of birth were recorded in the field. If year of birth was unknown, age was asked for and recorded in the field.

Detailed information about the respondent's current work or most recent work since first marriage, as well as usual occupation before marriage, was obtained in Section 6. The questions included a description of the main occupation, place of work, form of payment for work and total duration of employment. In addition, data on whether or not the respondent worked were obtained for each birth interval.

Information on the husband's background was obtained in Section 7. This included educational attainment, size of community where he spent his childhood, and occupation and employment status. For currently married women this related to the current husband, for others, to the last husband. The choice of the last husband rather than first (for women married more than once) was made on the assumption that it should be less difficult to collect information which is more recent.
(2) Maternity history. The primary data included in the maternity history were number of live births by sex and by date of occurrence; incidence of pregnancy wastage; prevalence and duration of lactation in relation to the two most recent births; and proportion of women currently pregnant, with expected birth date and sex preference.

Separate questions were asked about the existence and number of living and dead children, the former divided into four categories distinguishing as to sex and presence/absence in the household. In addition, if any other pregnancy had a gestation period of seven months or more, the interviewer probed to determine whether in fact it had resulted in a live birth.

The birch-history table contained the following items, requestẹ for each live birth in chronological order from first to most recent: month and year of birth (if calendar year was not available, how many years ago the birth occurred; sex of the child; whether it was still alive; if alive, its name (for easier reference in further questioning); and if dead, its age in years and months at death.

The table of other pregnancies consisted of the following items, obtained for each wasted pregnancy, again in chronological order from first to most recent: month and year of termination (if not available, the live birth interval in which it occurred); gestation period, if that was seven months or more, whether baby cried or showed any other sign of life at birth; if so, its sex. A major function of these questions was to identify pregnancies that had resulted in live births but had been forgotten by the respondent during earlier qustioning because the child had lived for only a very short time.

Very few additional births were found through this procedure. About 20 per cent of the respondents reported some pregnancy wastage, the average number being about 0.3 per respondent. Nearly one in five of the reported wasted pregnancies had gestation periods of seven months or more. Of 223 events of the latter type, 215 were still-births and eight additional live births were identified.
(3) Knowledge and use of contraception. Section 3 dealt with levels of acquaintance with and use of contraception. The questions also helped in orientating the respondent to the more detailed questioning on fertility planning in section 5 . To a certain extent, the data collected in section 3 is of descriptive rather than analytic utility, since both the "ever heard of" and the "ever use" questions lack precision.

The respondent first reported spontaneously about her knowledge and use of contraception. Analytically, this provided a lower bound on knowledge, use and salience of different methods. Then, methods not mentioned spontaneously were described and questions on "ever heard of" and "ever use" were asked for each method. Finally, the respondent was asked whether she had heard of or used any other "unscientific" or folk methods.
(4) Marriage history. This Section was designed to obtain information on nuptiality, with special attention given to age at first marriage and total time spent in marital union. The latter served as an approximation of the length of exposure to the risk of pregnancy, as no attempt was made to adjust for prolonged but temporary separation within marital unions.
(5) Fertility regulation. This Section dealt with the desire for more children, the additional number wanted and preference concerning the sex of the next child. For women who were currently pregnant, the sex preference for the expected child was obtained; the current pregnancy was implicitly assumed to be a wanted child,
so the number desired in addition to this was obtained. It was felt that no useful distinction could be made between words such as "wanted", "desired", "planned", etc. While it is possible to argue that these words carry different connotations, to convey these shades of meaning to the respondent is another matter. The Thai word used, "tongkarn", may be approximately translated as "want".

All respondents were asked the total number of children wanted. The question was: "If you could choose the number of children, how many children would you want in all?" The question is similar to one asked in the husband's questionnaire.

This Section also dealt with the risk of conception which is governed by fecundity or infecundity on the one hand, and the use or non-use of contraception on the other. In relation to contraception, the data obtained were, for ever-users, current use and use in open interval, for never-users, intention to use in the future. Infecundity of the couple may occur naturally at any age, or may be associated with menopause, or result from a sterilization operation performed for non-contraceptive reasons. On the other hand, contraceptive sterilization may be treated as a completely effective current use of contraception, at least for younger women.

### 3.3.2 Background Variables

Reference is made here only to those variables derived from the fertility questionnaire for which further explanation is useful.
(1) Contraceptive methods. Two categories were used: (a) efficient methods, including the pill, IUD, injection, condom, male and female sterilization for contraceptive purposes, and "other female scientific methods" (diaphragm, foam and jelly); and (b) inefficient methods, including douche, rhythm, withdrawal, abstinence and other "folk methods".
(2) Birth interval. All interval analysis was based on birth intervals rather than pregnancy intervals. Three categories were used: (a) last closed birth interval; (b) open interval; and (c) birth interval of the first birth.

The last closed birth interval is the most recent interval of exposure which resulted in a live birth or is expected to do so for a currently pregnant woman. It was measured from birth to birth, or to the expected birth for a currently pregnant woman.

The open interval is an interval that has not resulted in a live birth. It was measured from the last live birth and is applicable only to women who are not currently pregnant.

The birth interval of the first birth was measured from first marriage to first birth.

The birth intervals as defined are approximations,
for they may include periods of non-exposure resulting from pregnancy, post partum amenorrhoea, wasted pregnancy between live births, and prolonged iemporary absence of the husband. As the tabulations are limited to women who are currently exposed, infecundity and termination of the marital union are not relevant as factors contributing to periods of non-exposure.
(3) Exposure status. This variable classifies various states of exposure and non-exposure of women into five categories: (a) pregnant, including six women not currently married but pregnant; (b) women not currently married, excluding the six who were pregnant; (c) currently married women with either the wife or husband sterilized for contraceptive purposes; (d) currently married women with either the wife or husband considered infecund, including sterilization for a non-contraceptive purpose; and (e) currently married women fully exposed to the risk of conception.

The last category may include some women who were sterile without being aware of it or who were unwilling to mention sterility in the interview. It may also include some cases of post partum abstinence, i.e. a fecund woman who had not resumed sexual relations following the birth of a child.

The third category, relating to sterilization for contraceptive purposes, also involves difficulties of interpretation. Women in this category were considered as "currently contracepting", though some older women would probably have become infecund due to menopause had they not had the operation in the past. Although including these women as currently contracepting, the report is somewhat inconsistent in excluding them from tabulations of future fertility intentions. Sterilization for contraceptive purposes reflects an intention not to have more children, but the tabulations were limited to currently married fecund women, either exposed or pregnant. This should be kept in mind in interpreting the data on future fertility intentions, as about eight per cent of the couples interviewed were contraceptively sterilized.
(4) Patterns of contraceptive use. This variable has seven categories, with the first two relating to those who had never used contraception and the remaining five to those who had ever used any contraceptive method, including sterilization.

Category 1 includes never-users who intend to use contraception in the future and comprises currently married fecund (exposed or pregnant) women.

Category 2 includes never-users who do not intend to use contraception in the future, if currently married and fecund, or do not need it because of infecundity, non-contraceptive sterilization or being currently unmarried.

Category 3 includes women not currently using contraception but who have used it in the open
interval. 4/
Caiegory 4 includes women not currently using contraception and who have not used it in the open interval but have used it in a closed interval; it includes all currently pregnant ever-users. 4/

Category 5 includes women ever married who have been contraceptively sterilized and currently married women whose husbands have been contraceptively sterilized.

Category 6 includes women exposed to the risk of conception who are current users of contraceptive methods other than sterilization.

Category 7 includes women who were contraceptive users in the past but are not now fecund due to non-contraceptive sterilization or infecundity for other reasons. 5 /

### 3.4 COMMUNITY QUESTIONNAIRE

The Community Survey was conducted simultaneously with the Fertility Survey. As the term "community" was defined to include only non-municipal areas, the questionnaire was designed to' gather information about the general characteristics and socio-economic conditions of the villages included in the Survey. The village headman or his assistant was selected as the respondent in each village.

The community questionnaire, reproduced in Appendix II, covered a wide range of topics.
(1) Location of community [village]. Information regarding the distance between the village and nearest important district town, the nearest provincial center, railway station, highway, etc.
(2) Travel and transportation. Travel and transportation systems in or between the village and other places were also investigated. This included important transportation systems within a radius of five kilometers, means of transport, fare and travel time to the nearest important district town and provincial center and means of transport for agricultural products. The accessibility of the village to outside contacts and services was examined in terms both of villagers' convenience of transport to nearby towns and the availability of transport for provincial and district officials to visit the village.
(3) Availability of certain institutions in the village and accessibility to the institutions. This dealt with general socio-cultural conditions, living conditions and the availability of institutions in the village, such as schools (lower and upper primary and secondary schools),

[^2]iemple, grocery store, health center (first and second class), hospital, market and private companies for selling agricultural products, rice mill, factories and agricultural enterprises with hired workers.
(4) Agricultural conditions. Besides socio-cultural conditions, it was essential to know about agricultural conditions in each village. The supervisors, therefore, asked about the main crop grown by the village and crops which could be grown during the summer months. Various kinds of livestock such as pigs, chickens, ducks or water buffaloes owned or raised by villagers were recorded. Questions asked covered detailed information on size of land holding, inheritance pattern in general, pattern of land inheritance, price of land, etc.
(5) Agricultural development. Detailed information about the development of agriculture in the community was obtained. It included irrigation projects in the planning stage for the village, availability of the imigation system for farms of the village, use of mechanical equipment and fertilizer for farming, etc.
(6) Labor market. The main points covered in this section were the proportion of hired farm workers among the agricultural labor force and proportion of young men working outside the village.
(7) Migration. Questions concerning migration were asked in order to study its impact on village size in the past ten years.
(8) Frequency of contacts with organizations. Questions were designed to obtain information about frequency of contact between people in the community and outsiders from other organizations, such as agricultural officers, medical doctors, public health officers, community development officers, family health workers, mobile pharmaceutical sales teams and other sales workers.
(9) Accessibility to mass media. Information obtained through this section related to the accessibility to the village of all kinds of mass media such as radio, newspapers, television, and of information from the Government.

## CHAPTER TV

## SUBSTANTIVR HINDRNGS OR THE SURWTY

## 

A detailed analysis of the results of a complex survey such as SOFT/WFS is a lengthy process. It requires a careful appraisal of the quality of the data with possible adjustment to correct or minimize deficiencies. It also involves the application of progressively more refined demographic and statistical techniques in order to identify inter-relationships and to permit in-depth studies of specific issues.

As an exhaustive analysis of the data could delay issuance of the findings for several years, WFS has proposed the publication of an initial report based on a preliminary assessment of the Survey results and has provided guidelines for its contents $1 /$. This report on the Survey of Fertility in Thailand provides, in Volume I, a broad and preliminary review of the findings and, in Volume II, detailed tabulations of the Survey data.

The analysis of data has been limited to the use of cross-tabulations, leaving many topics incompletely explored and many questions to be answered in the course of further study. No effort has been made to comment on each of the published tables; rather, the commentary seeks to identify major points that emerge from the data, leaving the reader free to add further detail.

Summary tables are used in this chapter to present some of the key findings of the Survey. Very few of these tables show the frequencies, i.e. number of respondents, on which the percentages, means and medians are based. To identify cells with limited numbers of respondents, an asterisk (*) is entered in the appropriate cell when the frequency was less than twenty respondents and the figure is enclosed in brackets when the frequency was less than fifty. Other symbols used in the tables in this chapter are:

Category not applicable

| Magnitude zero | - |
| :--- | :---: |
| Magnitude not zero, but less than |  |
| half the unit employed | x |
| Not tabulated | n.t. |

The detailed tables in Volume II are presented in seven groups:

[^3]
## preferences

Group 6: Additional tables from the husband's questionnaire

The first digit of the table numbers given in the source notes of the summary tables identifies the group within which the detailed table will be found. Further information on the numbering system is given in the introductory section of Volume II.

### 4.2 CHARACTERISTICS OF THE POPULATION IN THE SURVEY

Data on households were collected through the Household Survey and through the household schedule used in the Fertility Survey. In both instances a major function was to identify persons eligible to respond to the husband's questionnaire and the fertility questionnaire. The Household Survey also provided the basic data on the socio-economic characteristics of the Households, and the household schedule of the Fertility Survey collected information on the age and sex structure of the household and the marital status of its members.

The analysis in this Section is based on the data from the household schedule of the Fertility Survey, covering a population of 24,946 persons in 4,529 households. $2 /$

### 4.2.1 Age and sex structure

Table 3 and Figure 3 show the age and sex structure of the population covered by the Survey and provide a comparison with the results of the 1970 Census of Population and Housing. The Survey data have been weighted to compensate for slightly differing probabilities of selection into the sample as well as for differential non-response. ${ }^{\text {8/ }}$

Agreement between the Survey and Census data is generally close. The sex ratio (males per 100 females) of the Survey population was 99.2, compared with 99.1 in the 1970 Census. There are evident differences, however, in the case of individual age groups, particularly in the 0 to 4 and 5 to 9 year age groups where the proportions reported by the Survey are significantly smaller than those of the Census. While recent declines in fertility are a factor, the rather high sex ratios in these age groups suggest that the Survey coverage was incomplete.

There is no evidence of misreporting of age, such as the shift across the age limit of eligibility for interview. A more detailed examination of data by single years of age shows that there was no age heaping.4/

[^4]Figure 3. Per cent age and sex composition of the population, Thailand, 1970 and 1975.


Table 3. Per cent distribution of age structure by sex, and sex ratios, 1970 and 1975

| Age | Male |  | Female |  | Sex ratio ${ }^{1 /}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1970 <br> (Cenemas) | $\begin{gathered} 1975 \\ \left(\mathrm{SOH} \mathrm{H}^{\prime}\right) \end{gathered}$ | $\begin{gathered} \overline{1970} \\ \text { (Census) } \end{gathered}$ | $\begin{gathered} 1975 \\ (\mathrm{SOFT}) \end{gathered}$ | $\begin{gathered} \overline{1970} \\ \text { (Census) } \end{gathered}$ | $\begin{gathered} 1975 \\ (\mathrm{SOFT}) \end{gathered}$ |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 | 99.2 |
| 0-4 | 16.7 | 14.3 | 16.2 | 13.1 | 102.4 | 108.3 |
| 5-9 | 15.6 | 15.0 | 15.1 | 13.8 | 102.8 | 107.7 |
| 10-14 | 13.5 | 13.8 | 13.0 | 13.6 | 102.5 | 100.7 |
| 15-19 | 10.7 | 11.9 | 10.9 | 12.3 | 97.2 | 96.5 |
| 20-24 | 7.7 | 8.4 | 7.9 | 8.6 | 97.1 | 96.9 |
| 25-29 | 6.4 | 6.3 | 6.6 | 7.4 | 96.0 | 84.3 |
| 30-34 | 6.1 | 5.8 | 6.2 | 5.8 | 97.2 | 99.9 |
| 35-39 | 5.6 | 5.2 | 5.5 | 5.1 | 99.5 | 100.6 |
| 40-44 | 4.5 | 4.5 | 4.4 | 4.7 | 101.0 | 94.8 |
| 45-49 | 3.5 | 4.0 | 3.5 | 3.9 | 100.3 | 102.1 |
| $50-54$ | 2.8 | 3.1 | 2.8 | 3.3 | 96.4 | 94.2 |
| $55-59$ | 2.3 | 2.3 | 2.3 | 2.5 | 96.7 | 91.6 |
| $60+$ | 4.5 | 5.0 | 5.3 | 5.5 | 83.4 | 88.6 |
| Unknown | 0.1 | 0.4 | 0.1 | 0.4 | 99.2 | 102.2 |

Source: 1970, National Statistical Office, 1970 Population and Housing ensus, Whole Kingdom, National Statistical Office, Office of the Prime Minister, Bangkok, 1973.

1975, Table 0.1.1B

1. Males per one hundred females

### 4.2.2 Marital status

Table 4 compares the marital status of the Survey population with data from the 1970 Census. In both cases priests, who comprise a sizeable proportion of the male population, were excluded. The two distributions are similar, particularly for males. There appears to be a slight shift of females toward later marriage since the 1970 Census. The proportion of single women in the age group 15 to 19 years increased from 81.1 per cent in 1970 to 84.7 per cent in 1975 , and for the group aged 20 to 24 years the increase was from 38.0 to 41.4 per cent. For the female population aged 15 years and over the proportion single went from 25.5 per cent to 28.8 per cent over the five-year span. A more detailed discussion of nuptiality trends appears in Section 4.4.

### 4.2.3 Characteristics of women ever married

A brief summary of the characteristics of the women interviewed provides a background for interpretation of the main findings presented in Chapter IV. It
also makes explicit the associations between background variables and contributes to a critical understanding ofthe data.
(1) Age. This is obviously one of the main control variables associated with fertility and related dependent variables. Association of the socio-economic background variable with the dependent variables may be in part an artifact of the former's association with age. For example, in many developing countries a rapid expansion of educational facilities in recent years means that younger women tend to be better educated, thus the lower fertility observed for that group is in part a reflection of its age composition and not simply the direct effect of education on fertility intentions and behavior.

Table 5 examines the relationship of age to several background variables for women ever married. Women with no schooling were somewhat older than the average, reflecting the greater availability and use of educational facilities in recent decades, especially in rural areas. The
structure, the duration of marriage of urban women tended to be shorter due to later age of marriage. In Bangkok Metropolis, a comparison of Tables 4 and 5 shows that later marriage compensated for the difference in age structure.

Significant differences in marriage duration by work status and by occupation of husband were evident. Almost one-third of all women not working had been
married less than 5 years, while the proportion is less than one-tenth for those married 25 years and over. Of the women whose husbands were in the professional, technical, administrative and clerical occupations, 31 per cent had been married less than 5 years, though only 19 per cent are under 25 years of age. By comparison, only 18 per cent of the women whose husbands were in farming had been married less than 5 years, while 21 per cent were younger than 25 years.

Table 6. Per cent distribution of women ever married by number of years since first marriage, for selected background variables

| Variable | Total | Number of years since first marriage |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under |  | 10-14 | 15-19 | 20-24 | 25-29 | $30+$ |
|  |  | 5 | 5-9 |  |  |  |  |  |
| TOTAL | 100.0 | 21.3 | 19.3 | 16.8 | 14.6 | 14.1 | 10.3 | 3.5 |
| Residence: |  |  |  |  |  |  |  |  |
| Urban | 100.0 | 26.2 | 21.0 | 16.5 | 12.1 | 12.3 | 9.0 | 2.9 |
| Rural | 100.0 | 20.5 | 19.0 | 16.9 | 15.1 | 14.4 | 10.5 | 3.6 |
| Region of residence: |  |  |  |  |  |  |  |  |
| North | 100.0 | 19.4 | 17.0 | 17.1 | 14.7 | 16.8 | 10.8 | 4.2 |
| Northeast | 100.0 | 21.5 | 20.2 | 18.3 | 14.0 | 12.8 | 9.9 | 3.2 |
| South | 100.0 | 17.6 | 20.4 | 15.3 | 15.7 | 13.7 | 12.3 | 5.1 |
| Central ${ }^{1 /}$ | 100.0 | 24.4 | 17.5 | 15.9 | 15.2 | 13.9 | 10.5 | 2.8 |
| Bangkok Metropolis | 100.0 | 22.3 | 26.1 | 14.8 | 13.7 | 13.4 | 7.2 | 2.4 |
| Years of school completed: |  |  |  |  |  |  |  |  |
| None | 100.0 | 7.8 | 10.2 | 16.4 | 18.4 | 21.2 | 18.2 | 7.8 |
| 1 to 4 years | 100.0 | 22.3 | 21.0 | 17.3 | 14.5 | 13.1 | 9.0 | 2.7 |
| 5 to 10 years | 100.0 | 43.8 | 22.4 | 14.4 | 6.0 | 8.0 | 4.5 | 1.0 |
| 11 years and over | 100.0 | 43.8 | 28.8 | 11.0 | 7.5 | 6.0 | 2.5 | 0.0 |
| Work status: |  |  |  |  |  |  |  |  |
| Currently working | 100.0 | 19.3 | 18.5 | 17.4 | 15.5 | 14.8 | 10.7 | 3.7 |
| Not working | 100.0 | 30.9 | 23.1 | 14.1 | 10.8 | 10.7 | 8.1 | 2.3 |
| Occupation of husband: |  |  |  |  |  |  |  |  |
| Professional, technical, administrative \& clerical | 100.0 | 30.7 | 18.6 | 14.6 | 9.9 | 13.8 | 9.6 | 2.8 |
| Sales and services | 100.0 | 24.6 | 18.2 | 17.7 | 13.7 | 12.2 | 10.1 | 3.5 |
| Skilled and unskilled manual | 100.0 | 24.9 | 24.1 | 16.0 | 14.9 | 12.0 | 6.0 | 2.3 |
| Farming | 100.0 | 18.4 | 18.4 | 17.2 | 15.6 | 14.9 | 11.6 | 3.9 |
| Family income ${ }^{2 /}$ |  |  |  |  |  |  |  |  |
| Level 1 (lowest) | 100.0 | 19.7 | 20.4 | 25.2 | 15.4 | 9.9 | 7.3 | 2.1 |
| Level 2 | 100.0 | 18.9 | 10.8 | 18.7 | 15.6 | 15.5 | 7.6 | 2.9 |
| Level 3 | 100.0 | 21.9 | 18.5 | 15.2 | 15.0 | 15.0 | 10.3 | 4.1 |
| Level 4 | 100.0 | 17.8 | 17.4 | 17.2 | 16.2 | 14.7 | 13.9 | 2.8 |
| Level 5 (highest) | 100.0 | 31.6 | 16.3 | 11.1 | 10.9 | 16.3 | 11.4 | 2.4 |

[^5](3) Education. The educational attainment of women is generally considered one of the most important variables in analyzing fertility behavior. Table 7 permits examination of the association of other background variables with the number of years of school completed.

The level of school attendance is quite high in Thailand. While 18 per cent of women ever married have not attended school, three-fifths of them were 35 years of age or over (Table 5). Of those reporting one or more years of schooling, less than 10 per cent have attended beyond the fourth year. Three-quarters of the married women in the Survey had had from one to four.
years of school; this preponderance in one category considerably reduces the utility of the educational variable in the study of fertility differentials.

Education of the husband may also play a significant role in shaping attitudes and fertility behavior. In Thailand, the sample reveals that husbands tend to have more years of schooling than their wives, but the difference is much less than in some other Asian countries. In fact, 40 per cent of the wives whose husbands had no schooling have themselves attended school.

Table 7. Per cent distribution of women ever married by educational levels, for selected background variables .

| Variable | Years of school completed |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | None | 1-4 | 5-10 | $11+$ |
| TOTAL | 100.0 | 18.0 | 74.6 | 5.3 . | 2.1 |
| Residence: |  |  |  |  |  |
| Urban | 100.0 | 9.2 | 62.0 | 18.9 | 9.9 |
| Rural | 100.0 | 19.5 | 76.8 | 3.0 | 0.7 |
| Region of residence: |  |  |  |  |  |
| North | 100.0 | 28.5 | 66.7 | 3.3 | 1.4 |
| Northeast | 100.0 | 13.1 | 83.5 | 2.4 | 1.0 |
| South | 100.0 | 27.8 | 66.6 | 4.2 | 1.4 |
| Central ${ }^{1 /}$ | 100.0 | 12.8 | 79.0 | 6.8 | 1.4 |
| Bangkok Metropolis | 100.0 | 10.7 | 55.0 | 21.0 | 13.4 |
| Years of school completed by husband: |  |  |  |  |  |
| None | 100.0 | 60.2 | 38.0 | 1.8 | - |
| 1 to 4 years | 100.0 | 16.5 | 81.5 | 2.0 | - |
| 5 to 10 years | 100.0 | 5.5 | 72.9 | 19.2 | 2.4 |
| 11 years and over | 100.0 | 1.6 | 33.2 | 30.5 | 34.7 . |
| Occupation of wife: |  |  |  |  |  |
| Professional, technical, administrative \& clerical | 100.0 | 4.5 | 56.8 | 20.2 | 18.5 |
| Sales and services | 100.0 | 13.8 | 69.7 | 14.4 | 2.1 |
| Skilled and unskilled manual | 100.0 | 15.4 | 75.6 | 8.0 | 1.0 |
| Farming | 100.0 | 21.3 | 77.7 | 1.0 | - |
| Family income ${ }^{2 /}$ |  |  |  |  |  |
| Total | 100.0 . | 18.4 | 75.3 | 4.4 | 1.9 |
| Level 1 (lowest) | 100.0 | 25.7 | 73.2 | 1.1 | - |
| Level 2 | 100.0 | 22.0 | 77.0 | 1.0 | - |
| Level 3 | 100.0 | 16.6 | 80.4 | 3.0 | - |
| Level 4 | 100.0 | 18.3 | 77.0 | 3.7 | 1.0 |
| Level 5 (highest) | 100.0 | 10.1 | 69.0 | 13.0 | 7.9 |

Source: Tables 2.2.6-2.2.7

1. Excluding Bangkok Metropolis

2/ Currently married women in matched couples

Rural-urban differences are apparent. One in five rural women ever married had had no schooling, compared with about one in 10 urban women. There are also significant regional differences. While 13 per cent of women in the Northeast and Central Regions had not attended school, the figure was 28 per cent in the North and the South. The disparity reflects socio-economic and cultural differences as well as varying degrees of urbanization.

Differentials in terms of husband's occupational group are also evident. Twenty per cent of the husbands in professional and related occupations had wives with five to ten years of schooling and 18.5 per cent had wives who had attended school for 11 or more years. In contrast, only one per cent of those engaged in farming had wives with five or more years of schooling. A similar pattern is seen in family income, where the majority of wives who had had five years of school or more were reported in the two highest levels. Accessibility of schools, particularly in rural areas, and their cost have tended to limit education beyond the fourth year to children of families in the higher income levels, and it is likely that family position and wealth as they influence marriage are even more important than level of education in determining level of family income. That years of schooling play a limited role is also suggested by the fact that ten per cent of the currently married women in the highest income level had never attended school and 69 per cent had attended for one to four years.
(4) Labor force status. Among all currently married women, 82 per cent reported that they were working at the time of the interview, with 8 per cent working for salary and the majority ( 74 per cent) working on family farms or in family enterprises.

Of the 18 per cent not currently working, only 3 per cent had never worked; 7 per cent worked before marriage only and the same proportion had worked both before and after marriage. One per cent had worked only after marriage.

### 4.2.4 Differences in ages of husbands and wives

Using the ages of husband and wife as reported by the husband, 82 per cent of the husbands were older than their wives, 8 per cent were the same age and 10 per cent were younger. The mean difference in ages of husband and wife was 3.8 years. ${ }^{5 /}$ The differentials for selected background variables are shown in Table 8. Higher differentials for urban and metropolitan residents and for the highest educational level of wives, all of which relate to later age of marriage of the women, suggest that differentials in age at marriage for males
were somewhat larger than those for females. This observation conforms with results of previous studies in Thailand. The larger differential for women under 25 years of age is due partly to the fact that, particularly for this age group, women marrying earlier are overrepresented in a sample of women ever married.

### 4.3 COMPARISON OF IESPONSES OF HUSRANDS AND WIVES

Several items were asked separately of both the husband and the wife. Insofar as these can be considered as independent sets of data they are indicative of the reliability of the information obtained. In this discussion gross error, that is, the discrepancies in responses of individual couples, is considered. Net error, which is more relevant to the Survey results, should generally be considerably smaller.

### 4.3.1 Age of the wife

Questions on the month and year of the wife's birth were asked in both interviews. A difference of one year in the age computed from each answer is not necessarily due to mis-reporting as in a number of cases the month of birth was unknown. In other cases only an estimate of age was obtainable. Table 9 shows that 83 per cent of the couples gave the same answer or differed by one year in reporting the wife's age. In 5 per cent of the cases the reply of the husband was two or more years younger than that of the wife, and in 12 per cent the husband gave the wife's age as two or more years older.

Reporting for younger women was only moderately better than that for older women. Rural reporting appeared more consistent than that in urban areas, due primarily to the poor agreement of couples in Bangkok Metropolis. There was a slight positive association between years of schooling and consistency of reporting except for women in the highest educational group, of whom 20 per cent reported ages two or more years younger than did their husbands.

### 4.3.2 Number of living children

For the Fertility Survey the number of living children was obtained by a series of questions asking specifically about children living at home and those not living at home, and separately for boys and girls. For the Husband's Survey these data were obtained through a single question. The results are summarized in Table 10 and are confined to couples in which both the husband and the wife have been married only once. The data have not been corrected for the small number of births which occurred between the husband's and the wife's interviews.

[^6]Table 8 . Mean diference in age of currently married couples, for selected background variables

| Variable | Mean difference in age ${ }^{1 /}$ (yeaxs) |
| :---: | :---: |
| TOTAL | 3.8 |
| Current age of wife: Under 25 years 25 to 34 years 35 years and over | $\begin{aligned} & 4.4 \\ & 3.8 \\ & 3.6 \end{aligned}$ |
| Residence: Urban Rural | $\begin{aligned} & 4.3 \\ & 3.7 \end{aligned}$ |
| Region of residence: <br> North <br> Northeast <br> South <br> Central ${ }^{2 /}$ <br> Bangkok Metropolis | $\begin{aligned} & 3.7 \\ & 3.7 \\ & 4.2 \\ & 3.7 \\ & 4.4 \end{aligned}$ |
| Years of school completed by wife: <br> None <br> 1 to 4 years <br> 5 to 10 years <br> 11 years and over | $\begin{aligned} & 3.9 \\ & 3.9 \\ & 3.8 \\ & 5.1 \end{aligned}$ |

## Source: SOFT; unpublished data

[^7]Table 9 . per cent distribution of diferences in age of wife as reported by husband and wife, for selected background variaoles


Source: SOFT, unpublished data
$\begin{array}{ll}1 / & \text { Based on wife's age as reported by husband } \\ \underline{2} \text { Excluding Bangkok Metropolis }\end{array}$

Table 10. Per cent distribution of differences in number of living children reported by husband and wife

| Number of living children reporied by husband | Compared with husband's report, wife reported |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | fewer children |  | same number | more children |  |
|  | $2+$ fewer | 1 fewer |  | I more | 2+ more |
| TOTAL | x | 1.0 | 95.0 | 3.0 | 1.0 |
| 0 | . | .. | 91.6 | 7.2 | 1.2 |
| 1 | .. | 1.0 | 97.1 | 1.2 | 0.7 |
| 2 | - | 0.7 | 94.9 | 2.8 | 1.6 |
| 3 | 0.3 | 0.7 | 95.7 | 3.0 | 0.3 |
| 4 | 1.6 | 0.4 | 94.6 | 3.1 | 0.3 |
| 5 | - | 1.1 | 93.9 | 2.4 | 2.6 |
| 6 | 0.5 | 2.3 | 90.5 | 4.6 | 2.1 |
| 7 | - | - | 94.6 | 2.7 | 1.3 |
| 8 | - | - | 96.0 | 4.0 | .. |
| $9+$ | 2.2 | 1.2 | 96.0 | : | $\cdots$ |

Source: SOFT, unpublished data

Ninety-five per cent of the couples agreed in their reporting of the number of living children. It may be assumed that the more detailed questioning of the wife contributed to the four per cent of cases where the wife reported one or more children than did the husband.

### 4.3.3 Occupation of the husband

Determination of occupation through a survey is a problem, particularly where the interviewers are not specialists in eliciting information and the coding must be based on the descriptions obtained in the field. In this instance two surveys were involved, with two sets of interviewers differing in qualifications, experience and training.

The same group of coders handled the processing of the Husband's Survey and the Fertility Survey. Replies were first coded according to a two-digit classification based on the standard ISCO code. For tabulation this was collapsed into a single-digit code specially developed by WFS. Comparison of the husband's and wive's
responses was poor when done directly in terms of the single-digit code, with the main cause of discrepancies found to be shifting within the following pairs of classifications:
professional, technical and administrative vs. clerical sales vs. services
skilled and semi-skilled manual vs. unskilled manual self-employed farming vs. non-self-employed farming

These classifications were therefore combined into a four-fold structure of occupational groups.

The results are summarized in Table 11, where it may be seen that the highest percentage of agreement was in reporting farming as the husband's occupation. The poorest agreement was on sales and services, where only two-thirds of the wives gave the same replies as their husbands. Though the information has been consolidated into only four broad occupational groups, it is still meaningful when used in cross-tabulations with dependent variables as is demonstrated in several tables in this chapter.

Table 11. Occupation of husband by major occupational group, as reported by husband and wife

| 甭eported by husband | Total | Reported by wife |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Professional, technical. administrative \& clerical | Sales \& services | Skilled \& unskilled manual workers | Farming |
| TOTAL | 2,930 | 225 | 267 | 481 | 1,957 |
| Professional, technical, administrative \& clerical | 190 | $\begin{gathered} 158 \\ (83.1 \%) \end{gathered}$ | 9 | 12 | 11 |
| Sales and services | 271 | 24 | $\begin{gathered} 180 \\ (66.4 \%) \end{gathered}$ | 32 | 35 |
| Skilled and unskilled manual workers | 448 | 24 | 27 | $\begin{gathered} 339 \\ (75.7 \%) \end{gathered}$ | 58 |
| Farming | 2,021 | 19 | 51 | 98 | $\begin{gathered} 1,853 \\ (91.7 \%) \end{gathered}$ |

Source: SOFT, unpublished data

### 4.4 NUPTIALITY AND EXPOSURE TO CHILDBEARING

In this study marriage is defined as any sexual union involving cohabitation. This definition is distinct from religious or legal definitions, for the start of such a union need not coincide with religious or legal marriage ceremonies nor with first sexual experience. Though reliable data on illegitimate births are not available, it appears that in Thailand childbearing takes place largely within marriage and there are strong social sanctions that function to discourage illegitimacy.

### 4.4.1 Trends in age at first marriage

As the date of first marriage ordinarily indicates the onset of exposure to sexual intercourse, the age at which a woman marries has a direct bearing on her reproductive performance. Figure 4 and Table 12 show the percentages single and married by specified ages, for five-year birth cohorts. They are based on data on never-married women from the household schedule, and data from the fertility questionnaire on age at first marriage of women ever married. The last entry in each row of Table 12 is the percentage ever married for a particular cohort at the time of the Survey. The percentage marrying within an interval is the difference between entries in the column corresponding to that age interval and the one immediately before it.

The top entry in each column suffers from truncation bias, as does the entire column for those marrying between
the ages of 30 and 49 years. An examination of the remaining entries shows a gradual tendency toward later marriage in recent years, with the trend influenced also by the increased proportion of women remaining single through the childbearing years.

Table 12 shows a significant decline among married women in the proportion married before age 15 from about 5 per cent for women over 30 years to 2 per cent in the current 15 to 19 age group. Among all women 45 to 49 years of age only one in ten was single at age 25 , while one in four was single in the cohort currently aged 25 to 29 years.

If the analysis is limited to women first married before 25 .years of age, no trend toward later marriage is discernible. The following figures give the mean age at marriage by current age for women marrying before age 25 :

| Age group | Mean age at <br> marriage <br> (years) |
| :---: | :---: |
| $25-49$ | 18.7 |
| $25-29$ | 18.7 |
| $30-34$ | 18.7 |
| $35-39$ | 18.7 |
| $40-44$ | 18.4 |
| $45-49$ | 18.8 |

Figure 4. Per cent of women married before specified ages, by ags sroup

50

25


Figure 4 shows, for each fiveyear age group, the per cent married before specified ages. The vertical scale is in per cent and the horizontal scale is in years.

For each age group the base point of the curve is the per cent married before age 15 . Thus, at the time that all women who were 45 to 49 at the time of the Survey had reached age $15,4.9$ per cent were married. Three years later, when all had reached age $18,30.3$ per cent were married and, another 12 years later when all women in this age group had reached age $30,94.3$ per cent had married.

The five-year span between base points indicates the time required for all women in each succeeding cohort to reach the specified age. Thus, five years after all women in the 45 to 49 age group had reached age 15 , with 4.9 per cent married, all women in the 40 to 44 age group had achieved age 15 and 5.9 per cent had married. By the time the latter group had reached age $30,92.2$ per cent had married.

The final point of each curve marks the per cent ever married at the time of the Survey, and the broken line indicates that mot all women in the cohort have reached the specified age (with age 50 as the maximum; see Table 12).

The dotted lines connecting per cent married before specified ages show the downward trend over time in the proportion of women married. The percentages for younger ages in the 40 to 44 and 45 to 49 age groups reflect the impact of World War II on age at marriage.

Table 12. Per cent of women simgle, and married before specified ages, by age ${ }^{1 /}$

| Age growe | Single | Married before |  |  |  |  |  |  | Age at which |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 15 | 18 | 20 | 22 | 25 | 30 | 50 | 50 per cent married | 75 per cent married |
| Under |  |  |  |  |  |  |  |  |  |  |
| 15 | 99.48 | 0.52 | .. | . | . | - | . | .. | $\cdots$ | . |
| 15-19 | 84.72 | 2.09 | 11.46 | 15.28 | .. | .. | .. | .. |  | .. |
| 20-24 | 41.47 | 3.57 | 25.19 | 41.83 | 53.49 | 58.53 | .. | .. | $21.4{ }^{2 /}$ | .. |
| 25-29 | 19.13 | 3.80 | 26.93 | 46.10 | 63.00 | 76.18 | 80.87 | .. | 20.5 | 24.7 |
| 30-34 | 10.05 | 4.76 | 28.67 | 48.80 | 67.04 | 79.89 | 87.53 | 89.95 | 20.1 | 23.9 |
| 35-39 | 6.42 | 4.86 | 28.54 | 51.75 | 68.13 | 83.29 | 90.59 | 93.58 | 19.8 | 23.4 |
| 40-44 | 3.93 | 5.86 | 31.90 | 56.02 | 73.79 | 85.32 | 92.23 | 96.07 | 19.5 | 22.3 |
| 45-49 | 3.23 | 4.93 | 30.26 | 52.40 | 73.48 | 89.62 | 94.26 | 97.77 | 19.8 | 22.3 |

Source: Table 0.1.2 and 1.1.1-1.1.3
1/ This table, together with Tables 2, 3 and 22, are the only tables in this chapter that include. women never married.
2/ This figure suffers from truncation bias; the ultimate median age at marriage will be slightly lower.

The absence of any trend is confirmed by the data in Table 13 which summarizes, for women married before 25 years of age, the percentage distribution by age at marriage for women currently 25 to 49 years of age.

The gradual rise in the age at marriage in Thailand results, not from a change in the age at marriage of those married by age 25 , but from the growing proportion of women still single at that age. The median age at marriage, in Table 12, gives the age by which half the women in each age cohort were married and confirms the upward trend. 6 /

The pattern of nuptiality in Thailand shows no change for those marrying before the age of 25 , but is changing to the extent that an increasing number of women remain unmarried at that age and, of these, a growing proportion may remain single throughout their childbearing years. Further research is needed to examine these trends in relationship to demographic and socio-economic variables.

### 4.4.2 Differentials in age at first marriage

For women married before age 25 , differentials in
mean age at first marriage have been calculated for selected background variables. The data indicate a strong relationship between level of education and age of first marriage. For women married before age 25 , those with no schooling had a mean age of 17.9 years; comparable figures were 18.7 years for those with 1 to 4 years of school, 20.4 years for those with 5 to 10 years, and 22.4 years for women with 11 or more years of school. The last figure is based on less than 50 cases. For women raised in rural areas and still living there the means age at marriage was 18.5 years, while for women raised and residing in urban areas the mean was 19.9 years. The nature of employment before marriage influences mean age at first marriage, as the following figures show:

> Work status before marriage

Mean age at first marriage (years)

Did not work 18.2

Unpaid family worker 18.5

Self-employed 19.4

Employee

[^8]Table 13. Per cent distribution by current age and age at first manriage of women maried before 25 years of age.

| $\begin{aligned} & \text { Age } \\ & \text { group } \end{aligned}$ | Total | Age at first marriage |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under 15 | 15-17 | 18-19 | 20-21 | $22=24$ |
| 25-29 | 100.0 | 5.1 | 30.3 | 25.1 | 22.1 | 17.4 |
| 30-34 | 100.0 | 6.0 | 30.0 | 25.3 | 22.8 | 16.1 |
| 35-39 | 100.0 | 5.8 | 28.4 | 27.9 | 19.7 | 18.2 |
| 40-44 | 100.0 | 6.9 | 30.5 | 28.2 | 20.8 | 13.6 |
| 45-49 | 100.0 | 5.5 | 28.3 | 24.7 | 23.5 | 18.0 |

Source: SOFT, unpublished data

A comparable pattern of difference was found when the women were classified in terms of the occupation of the husband:

## Occupation of husband

| Mean age at |
| :---: |
| marriage |
| (years) |

19.9
19.0
18.8
18.4

Finally, there was a slight increase observed in mean age at marriage when related to family income, with a mean age of 18.2 years for those at the lowest level and 19.2 years for those at the highest level of income.

### 4.4.3 Marital stability

The subject of marital stability is not dealt with in detail in this report, but the data are summarized in the following figures showing, by number of years since first marriage, the percentage of women whose marriages were dissolved and the proportion remarrying:

Twelve per cent of ever married women under 50 years of age had first marriages terminated by separation or divorce, and 6 per cent ended in widowhood. Remarriage is fairly common, and two-thirds of the women whose first marriages were dissolved had remarried. Remarriages tend to compensate for marriages termination and the proportion currently married remains fairly stable, with a slight decline in later years of life.

Though no data concerning differentials in the stability of the first marriages are available, some

| Years since <br> first <br> marriage | Death | First <br>  <br> Separation <br> or divorce | Remarried |
| :---: | :---: | :---: | :---: |
| TOTAL | 5.6 | 12.3 | 65.7 |
| $0-4$ | 1.0 | 6.8 | 33.3 |
| $5-9$ | 1.1 | 11.4 | 56.0 |
| $10-14$ | 4.1 | 11.6 | 70.0 |
| $15-19$ | 7.4 | 14.6 | 75.4 |
| $20-24$ | 11.1 | 16.6 | 73.5 |
| $25+$ | 13.2 | 16.4 | 67.5 |

differentials in the proportion currently married are shown in Table 14. For the mrre recent marriage cohorts women with some schooling were more likely to be currently married than those who have never attended school. A similar but less pronounced difference exists between the urban and rural sectors. This finding suggests a higher incidence of marital separations and divorces early in marriage among women with no schooling and to a lesser extent among rural women.

For longer durations of marriage, both differentials were reversed. This may be caused in part by a higher prevalence of widowhood among the educated and the urban since they tend to marry later and therefore tend to be older (and have older husbands) at any particular marriage duration than their rural counterparts.

### 4.4.4 Exposure status

This composite variable was defined and its limitations noted in Section 3.3.2. One interpretive use of data on exposure status is to indicate the contribution of sterilization and some of the important noncontraceptive

Table 14. Per cent of women ever maried who are curently married by years since first marriage, for selected background variables

| Variable | Total | Years since firse marriage |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $0-4$ | 5-9 | $10-14$ | $15-19$ | 20-884 | $25+$ |
| TOTAL | 92.2 | 94.7 | 93.7 | 94.0 | 92.2 | 88.9 | 87.1 |
| Residence: |  |  |  | * |  |  |  |
| Urban | 91.3 | 97.9 | 94.0 | 91.2 | 88.1 | 82.4 | 84.8 |
| Rural | 92.4 | 93.9 | 93.5 | 94.7 | 92.8 | 90.1 | 87.7 |
| Years of school complėted: |  |  |  |  |  |  |  |
| None | 90.6 | 86.8 | 90.0 | 95.5 | 95.2 | 93.1 | 83.6 |
| 1 or more | 92.8 | 95.3 | 93.9 | 93.5 | 91.3 | 87.4 | 89.2 |
| Work status: |  |  |  |  |  |  |  |
| Currently working | 91.8 | 95.0 | 93.1 | 93.7 | 91.3 | 89.4 | 86.8 |
| Not working | 93.4 | 93.2 | 94.8 | 96.8 | 97.2 | 87.3 | 88.4 |

Soruce: Table 1.4.2
factors to current protection from risk of conception.
Table 15 summarizes the distribution according to exposure status by the demographic 'control variables' of age, duration of marriage and parity.

About 10 per cent of the women reported a current pregnancy. Though a certain amount of underreporting may have occurred, this figure implies a moderate rather than a high current level of fertility. Sixty per cent of all women ever married were exposed, 30 per cent were not exposed due to termination of marriage, sterilization or self-reported fecundity impairment while the currently pregnant account for the balance. There was a rapid decline in the percentage exposed after the age of 35 in spite of a fall in the proportion pregnant. This decline was mainly due to self-reported fecundity impairment. The proportion contraceptively sterilized declined after a marriage duration of 20 years, due to the relative recency of the widespread introduction of this method in Thailand.

The proportion of women belonging to any category of exposure status changes more slowly with parity than with marriage duration; this is to be expected since at a given age higher parity tends to go with higher fecundity and exposure.

The proportion reporting fecundity impairment did not vary greatly between urban and rural areas. Since large rural-urban differentials are not expected, these data indicate that there is perhaps no great divergence in subjective assessment of fecundity between rural and urban women. This says nothing about the absolute levels reported.

Thirteen per cent of urban women were sterilized, a rate twice that for rural women. The percentage exposed did not vary much, as in urban areas the lower proportion currently pregnant compensated for the higher proportion sterilized.

Table 15. Fex cent distribution of wonen ever maried by curxent exposure status, for selected background variables

| Variabie | Total | Preganat | Not pregnant |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Living with spouse |  |  | Widowed, divorced, separated |
|  |  |  | Fecund | Contraceptive sterilization | Other impairment |  |
| TOTAL | 100.0 | 9.7 | 59.8 | 7.6 | 15.3 | 7.7 |
| Current age: |  |  |  |  |  |  |
| Under 25 years | 100.0 | 19.1 | 72.0 | 1.7 | 1.5 | 5.7 |
| 25-34 | 100.0 | 11.7 | 69.4 | 8.7 | 5.2 | 5.2 |
| 35-44 | 100.0 | 4.7 | 54.9 | 11.3 | 19.4 | 9.6 |
| 45-49 | 100.0 | x | 21.8 | 5.3 | 59.1 | 13.8 |
| Duration of marriage: |  |  |  |  |  |  |
| Less than 5 years | 100.0 | 20.5 | 73.1 | 0.7 | 1.0 | 4.7 |
| 5-9 | 100.0 | 9.9 | 72.3 | 7.1 | 4.5 | 6.2 |
| 10-14 | 100.0 | 10.2 | 64.2 | 11.9 | 7.7 | 6.0 |
| 15-19 | 100.0 | 7.8 | 57.1 | 12.9 | 14.3 | 8.0 |
| 20-24 | 100.0 | 3.0 | 50.9 | 9.9 | 24.9 | 11.2 |
| $25+$ | 100.0 | 1.2 | 27.8 | 5.4 | 52.8 | 12.7 |
| Number of living children: |  |  |  |  |  |  |
| 0 | 100.0 | 28.4 | 52.2 | 0.6 | 12.3 | 6.5 |
| 1 | 100.0 | 12.2 | 70.0 | 0.4 | 5.5 | 11.9 |
| 2 | 100.0 | 7.9 | 68.1 | 5.7 | 9.7 | 8.6 |
| 3 | 100.0 | 6.7 | 61.8 | 12.2 | 12.4 | 6.9 |
| 4 | 100.0 | 9.2 | 52.7 | 15.3 | 15.3 | 7.5 |
| 5 | 100.0 | 6.6 | 54.4 | 13.5 | 19.8 | 5.8 |
| 6 | 100.0 | 5.1 | 55.8 | 9.4 | 23.2 | 6.5 |
| $7+$ | 100.0 | 5.7 | 50.5 | 5.7 | 33.0 | 5.1 |
| Residence: |  |  |  |  |  |  |
| Urban | 100.0 | 6.9 | 57.0 | 18.0 | 13.9 | 9.2 |
| Rural | 100.0 | 10.3 | 60.1 | 6.6 | 15.5 | 7.5 |

Source: Tables 1.5.1 through 1.5.3

### 4.5 PEPTILTTY

The decline in fertility in Thailand has not been as dramatic as that in mortality. Throughout the first sixty years of this century, with the exception of the period of World War II, fertility remained at traditionally high levels and the crude birth rate was estimated at between 45 and 50 per thousand in the decade of the 1950's. A decline became evident in the 1960's, resulting in a lower rate of population growth. The rate of increase in 1974 was estimated at 2.7 per cent, compared with an estimated average of 3.2 per cent yearly between 1947 and $1960 \mathrm{I}^{\prime}$. The decline in fertility is considered a significant factor in the effort to achieve an accelerated rate of economic and social development.

The fertility questionnaire, discussed in detail in Section 3.3.1, asked for information on each live birth, the sex of each child and whether and when each child died or left home. It included special probes intended to obtain data on stillbirths, miscarriages and abortions. The initial analysis of these data has focussed on three aspects: cumulative fertility, fertilily during the first five years of marriage and current fertility.

### 4.5.1 Demographic aspects of cumulative fertility

(1) Age, Table 16 compares, by age of women ever married, the mean number of children ever born as reported by the Census in 1970 and by SOFT/WFS in 1975. The methods used in collecting these data were quite different and the results should be interpreted with caution. The data for the 45 to 49 year age group suggest that there may have been more complete reporting of fertility in the 1975 Survey and the implication that completed fertility for that age group has risen is probably misleading.

The figures for the younger age groups, on the other hand, indicate a substantial decline in birth cohort fertility and it is unlikely that this is a spurious product of the differing methods used. The mean parities of the 20 to 24 , 25 to 29 and 30 to 34 year age groups show declines between 1970 and 1975 of 17 per cent, 13 per cent and 9 per cent respectively. These results corroborate other evidence of declining marital fertility in Thailand 8 /
7) See, for example, Royal Thai Government, "Thailand Country Statement" ESCAP Committee on Population, Bangkok 20 June 5 July 1976; see also Nibhon Debavalya, "Fertility Transition in Thailand", paper presented at the Seventh Summer Seminar in Population, East-West Center, Honolulu, Hawaii, June 1976.
8/ Utilizing the data from the first and second rounds of the Longitudinal Study in Social, Economic and Demographic Change in Thailand, conducted by the Institute of Population Studies, Chulalongkorn University, Knodel and Pitaktepsombati found out that general marital fertility (of women aged 15 to 49) in Thailand declined iny 12 per cent between the two survey rounds. See, John Knodel and Pichit Pitaktepsombati, Fertility and Family Planning in Thailand: Results of the Second Round of. A National Survey (Paper No. 19, Institute of Population studies, Chulalongkorn University, Bangkok, 1975). The preliminary results of the SOFT data indicate a continued reduction in marital fertility.
(2) Duration of marriage. The number of years since first marriage provides a general measure of the length of exposure to contraception. The relationship between marital duration and cumulative fertility is summarized in the left hand column of Table 17. That childbearing continues at a substantial rate through later years of marriage was indicated by the increase in the mean number of children ever born to women married 25 to 29 years compared to those married 20 to 24 years. It may be noted that the prevalence of primary infertility in Thailand was low, as only 3 per cent of women ever married in the age group 45 to 49 years reported no live births.
(3) Age at first marriage. Age of entry into marriage is usually an important determinant of a woman's cumulative fertility. Table 17 shows, for women ever married, the mean number of children ever born by age at first marriage and by years since first marriage. A slight negative association between age at marriage and fertility is discernible, a finding that may reflect the more likely uiban background and higher educational status of women who marry later in life.

This negative association tends to become more pronounced with increasing marital duration. An exception is the pattern for women marrying before the age of 15 years. The fertility of this group was lower in most of the marriage cohorts. A number of factors may contribute to this pattern, including the possibility of adolescent sterility, misreporting of the date of marriage, and the fact that the results are based on a small number of observations and are subject to considerable sampling variance.

Table 16. Mean number of children ever born to women ever married, by age, 1970 and 1975.

| Age <br> group | 1970 <br> (Census) | 1975 <br> (SOFT) |
| :---: | :---: | :---: |
|  |  |  |
| $15-49$ | 4.0 | 3.9 |
| $15-19$ | 0.7 | 0.7 |
| $20-24$ | 1.8 | 1.5 |
| $25-29$ | 3.0 | 2.6 |
| $30-34$ | 4.3 | 3.9 |
| $35-39$ | 5.5 | 5.0 |
| $40-44$ | 6.4 | 6.1 |
| $45-49$ | 6.5 | 6.8 |
|  |  |  |

[^9]1975, SOFT, unpublished data

Table 17. Mean unuber of children ever born to women ever maxried, by age at first marviage and years since first mariage

| Years since firsi manciage | Total | Age at first maxiage |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under 15 | 15-17 | 18-19 | 20-21 | 22-84 | 24. |
| TOTAL | 3.9 | 4.6 | 4.4 | 4.1 | 3.8 | 3.3 | 2.5 |
| Less than 5 | 1.0 | (0.8) | 1.0 | 1.0 | 0.9 | 0.8 | 0.9 |
| 5-9 | 2.5 | (2.6) | 2.6 | 2.6 | 2.6 | 2.4 | 2.3 |
| 10-14 | 3.8 | (3.5) | 4.0 | 3.9 | 3.8 | 3.7 | (3.1) |
| 15-19 | 5.0 | (4.6) | 5.3 | 5.1 | 5.4 | 4.4 | (4.6) |
| 20-24 | 6.1 | (5.5) | 6.5 | 6.1 | 5.8 | 6.1 | * |
| 25-29 | 7.2 | (7.2) | 7.7 | 7.1 | 6.6 | (6.8) | .. |
| $30+$ | 7.5 | (7.0) | 7.2 | (9.3) | .. | .. | . |

Source: Table 2.2.3

### 4.5.2 Differentials in cumulative fertility

There is evidence in Census and Survey results of differential fertility among Thai women of different demographic and socio-economic characteristics. These include differences according to place of residence, educational attainment, female labor force participation, occupation, income and standard of living. The study of these differences is important not only for an understanding of the current and possible future levels of fertility, but also as a first step in seeking an explanation of fertility patterns. This discussion is based on two sets of tables in Volume II. In Tables 2.2.4 A-D, the background variables are examined singly and in Tables 2.2.5 A- $P$ they are examined in pairs. The main results are summarized in Table 18.
(1) Residence and region of residence. Research work on fertility in Thailand indicates that there are marked rural-urban differences in the level of recent fertility9/. For example, Goldstein, utilizing data from a

[^10]one per cent sample of the 1960 Census, calculated the average number of children ever born to women ever married for several rural-urban categories. After standardizing for age, he found 3.38 children ever born to Bangkok women. He divided the provincial urban women into non-agricultural and agricultural categories and found averages of 3.78 and 4.00 children ever born respectively. Rural women were also divided into nonagricultural and agricultural categories, with averages of 3.98 and 4.46 children ever born 10 . The 1970 Census and the Longitudinal Study on Social, Economic and Demographic Change in Thailand have produced similar results 1 -

The 1975 SOFT/WFS data also indicate that there are marked rural-urban differences in cumulative fertility. The average number of children ever born was 4.0 and 3.3 for rural and urban women respectively. This pattern holds true for all three broad marriage cohorts, as shown in Table 18.

To what extent do these differences in fertility between rural and urban women reflect the fact that the latter group tend to be better educated? The answer, sought in Table 2.2.5B; is not clear-cut. For the most recently cohort, those first married less than ten years ago, the small differential in rural-urban fertility disappeared when educational level of the wife was controlled. There was no consistent rural-urban difference for the three cohorts, when attention was focused solely on women who have never attended school.

[^11]The results from the Longitudinal Study indicate that the education of the husband is another significant variable associated with the wife's fertility. The educational attainment of the wife was found in the Longitudinal Study to be closely associated with the educational attainment of her husband. The coefficients of correlation between the two variables were $.698, .657$ and .565 for Bangkok, provincial urban and rural areas respectively. All are significant at the .001 level.14/

The results of the analyais in Table 2.2.5 C support previous findings. The highest fertility level was characteristic of those husbands and wives with no schooling. In contrast, the group in which both spouses have had 11 or more years of schooling had the lowest fertility.

The general impression from Table 2.2.5 C is that the association between husband's education and fertility is similar in shape and strength to that between wife's education and fertility. Furthermore, as a greater proportion of husbands than wives have received five or more years of formal education, husband's education may be the more important factor in determining the level of Thai fertility.
(3) Occupation. Many studies have been concerned with the association between occupation of women and fertility. In general it has been found that women in white collar and professional occupations have smaller families than women in blue collar and service occupations, while agricultural occupations are characterized by relatively high fertility.

In Thailand, the agricultural sector has always been the largest, but has been decreasing gradually relative to other sectors. For both sexes, the occupations of farmers, craftsmen, and sales persons account for the overwhelming majority of employed persons.

Utilizing the Longitudinal Study data, Debavalya found that the majority of females engaged in farming and sales work, both occupations with high fertility levels, were classified as "own account" or "uhpaid family worker", statuses in which the roles of mother and worker are reasonably compatible. Women engaged in professional, administrative, and clerical work have the lowest level of cumulative fertility and the highest level of role incompatibility. The levels characterizing service and craft workers were intermediate. Differences were more pronounced in urban than in rural areas.15/ In general, these findings from the Longitudinal Study are similar to Goldstein's analysis in 1960.16 .

[^12]The evidence from his analysis led Debavalya to suggest that the relationship between labor force participation and fertility in Thailand is a product of several causal relationships, and that there is remarkably little "pure" relationship between cumulative fertility and current work status.

Nevertheless, there is an "employee-white collar" effect; that is, women in the modern labor force do tend to have lower fertility, presumably because the opportunity cost of children is high and work and childcare are not compatible in urban areas. These women, with high levels of education, tend to work outside the home and the nature of their work not only makes for a conflict of maternal and occupational roles but also may influence attitudes towards practising contraception and toward reproductive behavior in general. 17

The findings of SOFT (see Table 18 and Table 2.2 .5 N ) accord with results of earlier studies. For the two earlier cohorts the fertility of women engaged in agricultural activities was markedly higher than for other categories. Clearly this reflects their exclusively rural background. The fertility of women in sales and service occupations was also high; women in manual work with marriage durations of ten or more years experienced similar levels of fertility to the sales and service categories but for the most recent cohort fertility was lower. The professional, clerical and allied workers were distinguished by their low fertility. Finally, it is interesting to note that women who report that they have never worked tended to have low fertility, though it should be noted that only three per cent of the women in the sample fall in this category.

Later studies will oe concerned with the extent to which these associations between women's occupations and fertility persist when education, rural urban residence and other variables are introduced into the analysis.

Occupation of the husband has probably been the most widely utilized index of socio-economic status in the study of fertility differentials. It should be noted that, in all SOFT tabulations that relate a woman's cumulative fertility to characteristics of her husband, the number of children ever born to the wife includes children from her present marriage and also children from any previous marriages. However, children of a woman's present husband from his previous marriage (if any) are not included as the cumulative fertility measure is derived exclusively from the present wife's pregnancy history. Another general problem which affects the crosstabulation of occupation and cumulative fertility and indeed many other tabulations stems from the fact that a current characteristic is being related to a product of many years' experience. Insofar, as these current characteristics have changed during the reproductive history of the respondents, any analysis of the relationship is subject

17/ Debavalya, op.cit., pp. 239
to qualification. However, it is unlikely that occupational mobility or other changes have been sufficiently widespread to cause major distortions in the findings.

The relationship between husband's occupation and fertility was similar to that of the wife's occupation; women whose husbands were engaged in agriculture were characterized by the highest mean number of children ever born. In contrast, wives of professionals, technicians, administrators, and clerks were consistently characterized by substantially fewer children ever born, while the wives of manual workers were intermediate. The association. between fertility and husband's occupation generally persisted, even when place of residence and wife's educational level were controlled (see Tables 2.2 .5 M and 2.2 .5 K , for details).
(4) Standard of living and family income. Economic characteristics of individuals or family units are notoriously difficult to measure through social surveys, both because of their complexity and because of the likelihood of inaccurate responses. Three indices family income, standard of living, and size of family enterprise - were derived from the household questionnaire and details of their construction are described in Section 3.1.2. Because of the problems involved a cautious approach in interpreting the findings is essential.

In the case of family income, a negative association with fertility was apparent for the most recent marriage cohort, but the strength of the association lessened for the two earlier cohorts. When interest was confined to the rural sector only (see Table 2.2 .5 H ), the relationship between income and fertility persisted, but when the education of the wife was controlled (see Table 2.2.5A) the relationship was somewhat attenuated; it appears that, among couples where the wife had received no education, income bore little relation to fertility.

An examination of the inter-relationship between standard of living and fertility shows, in Table 2.2.4G, that there was a consistent inverse relationship in the rural sector over all three cohorts, which was rather more pronounced than the income/fertility relationship. However, for the urban sector no clear pattern emerged. Further study, controlling for education, occupation and other variables is needed before any firm conclusions can be drawn.

Finally, Table 2.2.5P reveals no stable relationship between size of family enterprise and fertility for the three marriage cohorts. Fertility appeared lower in the larger enterprises for women married less than ten years, but higher among those married between 10 and 19 years, while for the earliest cohort no trend can be observed.

### 4.5.3 Fertility in the first five years of marriage

(1) Levels of fertility. The topic of fertility in the first five years of marriage is examined in Tables 2.1.2A to 2.1 .2 H and summarized in Table 19. The levels of
early marital fertility were constant for the three cohorts, indicating that the decline in Thai marital fertility has been confined to the later years of marriage.

Women marrying before the age of 15 reported markedly lower fertility in the first five years of marriage than other women: 1.0 live births compared to about 1.7 live births. Among women who first married after 15, there was a tendency for early fertility to increase as age at marriage rises, except for the most recent marriage cohort. In addition to adolescent sterility, the lower figures for women marrying before the age of 15 may also be due to under-reporting of the age at marriage, which would result in inflating the duration of marriage.
(2) Differentials in fertility. Fertility in early marriage analyzed by selected background variables is reported in Table 20 , but considerably greater detail may be found in Tables 2.1 .2 A to 2.1 .2 H . The most interesting feature to emerge was the higher tempo of fertility among the better educated. Even when age at marriage is taken into account, this relationship persists. The reason for this unexpected finding is speculative, though Section 4.4.3 suggests one possible reason, namely that women with no schooling may be more likely to experience marriage dissolution early in marriage 18/. In any case it is clear that the lower cumulative fertility of better educated women, is achieved not by spacing of births in early marriage but by a relatively greater reduction in fertility in the later years of marriage.

Similarly, slightly higher fertility over the same time period was recorded for the highest income group (see Table 2.1.2B), the higher occupational categories (see Table 2.1 .2 H ), and those with a high urban standard of living (see Table 2.1.2G). In contrast, the work experience of the wife before marriage appears to be unrelated to fertility.
(3) Timing of the first birth. Study of the first birth interval in SOFT/WFS was complicated by the fact that calendar month of marriage and/or first birth was not stated in about 20 per cent of cases. Rather than discard these respondents, it was decided to impute missing months. Usually the imputation was a random procedure but in cases where marriage and first birth fell in the same calendar year or where the birth was in the year following marriage, the month was assigned in such a way as to minimize the prevalence of premarital conceptions and births.

The relevant data presented in Table 2.1.1 and summarized in Table 21 must therefore be regarded with caution. The pattern of findings is highly susceptible to mis-statement of dates of first births and, even more so, of marriages. Results show that 4.5 per cent of all women reported that their first birth preceded their first marriage, and an additional seven per cent indicated a lapse of seven months or less. Comparison of the three

18/ Another possible factor is the use of broad 10 -year cohorts in the tabulations.

Table 19. Mean number of children born in first five years of marriage by age at first marriage and years since first maxriage, for all women married five years and over

| Years since first marriage | Total | Age at first marriage |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Unden 15 | 15-19 | 20-24 | $25+$ |
| TOTAL | 1.7 | 1.0 | 1.7 | 2.0 | 1.8 |
| 5-9 | 1.7 | 1.5 | 1.7 | 1.9 | 1.6 |
| 10-19 | 1.8 | 1.2 | 1.7 | 1.9 | 2.0 |
| $20+$ | 1.6 | 0.8 | 1.6 | 2.0 | * |

Source: Table 2.1.2

Table 20. Mean number of children born in first five years of marriage to women married five years and over by years since first marriage, for selected background variables

| Variable | Total | Years since first marriage |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 5-9 | 10-19 | $20+$ |
| TOTAL | 1.7 | 1.7 | 1.8 | 1.6 |
| Years of school completed: |  |  |  |  |
| None | 1.5 | 1.6 | 1.7 | 1.4 |
| 1 to 4 years | 1.8 | 1.7 | 1.8 | 1.7 |
| 5 to 10 years | 1.9 | (1.9) | (1.9) | (1.8) |
| 11 years and over | (2.0) | (1.8) | * | * |
| Work status before first marriage: |  |  |  |  |
| Did not work | 1.7 | (1.7) | 1.7 | 1.6 |
| Unpaid family worker | 1.7 | 1.7 | 1.8 | 1.7 |
| Self employed | 1.8 | (1.9) | 1.8 | 1.7 |
| Employee | 1.7 | 1.7 | 1.9 | 1.5 |
| Family income: 1 |  |  |  |  |
| Total | 1.8 | 1.8 | 1.9 | 1.7 |
| Level 1 (lowest) | 1.6 | 1.7 | 1.8 | 1.3 |
| Level 2 | 1.7 | 1.9 | 1.8 | 1.4 |
| Level 3 | 1.8 | 1.8 | 1.9 | 1.8 |
| Level 4 | 1.7 | 1.7 | 1.8 | 1.7 |
| Level 5 (highest) | 2.0 | 2.0 | 2.2 | 2.0 |

## Source: Table 2.1.2A-B, D

1. Currently married women in matched couples
 bixth, by age at first marriage

| Age at first maxriage | Chidices 1 | Intexval from marriage to hirst birth, in months |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Negas tive $2 /$ | 0-7 | $8=11$ | 18-28 | 24-35 | 36-59 | Mear length $3 /$ |
| TOTAL | 9.0 | 5.4 | 7.1 | 23.8 | 32.2 | 13.0 | 10.3 | 18.8 |
| Under 15 | 27.0 | 1.5 | 4.0 | 15.5 | 25.0 | 13.5 | 14.5 | 22.9 |
| 15-19 | 8.5 | 3.8 | 7.3 | 21.2 | 34.2 | 14.3 | 10.7 | 19.3 |
| 20-24 | 6.2 | 6.0 | 6.9 | 30.0 | 30.5 | 11.4 | 8.9 | 17.5 |
| $25+$ | 8.2 | 8.2 | 9.9 | 24.7 | 30.2 | 9.3 | 9.9 | 17.4 |

Source: Table 2.1.1
1/ No child born in first five years of marriage
2/ First birth preceding marriage
3/ Bascd on post marital births in first five years of marriage
marriage cohorts yields no evidence of historical change in the prevalence of premarital fertility or conceptions. (see Table 2.1.1)

A slight positive association between age at marriage and premarital births and conceptions is apparent, and the mean interval between marriage and first birth (calculated only for women who had a birth in the first five years of marriage) tended to shorten with increasing age at marriage. Overall, nine per cent of women remained childless in the first five years of marriage. The prevalence of childlessness in this period was much higher ( 27 per cent) for those marrying before the age of 15 years, indicating considerable overlap of adolescent sterility and early marriage.

### 4.5.4 Current fertility

In view of the changes in fertility now occurring in Thailand, recent trends and current levels of fertility are of considerable interest and importance. Three measures of current fertility have been used in analyzing the SOFT/WFS data: age-specific fertility rates; mean number of live births in the past five years; and the proportion of currently married women who are pregnant. Age-specific fertility rates also provide a basis for evaluation of fertility trends as the SOFT data permit calculation of retrospective rates.
(1) Age-specific fertility rates. The computation of age-specific fertility rates involved two steps: first, all births recorded in birth histories were classified by calendar year of occurrence and by age of mother at the time of birth; second, the 'person-years lived' by all women, regardless of marital status, was calculated by single years of age for each calendar year, using the data for women ever married and then adjusting the totals to take into account never-married women. Age-specific
rates by calendar years were computed by dividing the number of live births reported in year ' $x$ ' to women of a specified age range by the number of person-years of that age range for the year ' $x$ '.

The rates are subject to error due to possible understatement of the number of births and misreporting of dates at the time of interview. In view of the relatively small sample size the sampling error for single-year rates may be excessively high and aggregation by five-year intervals has been used in the calculations. The age-specific fertility rates presented here should be considered as preliminary, pending a thorough appraisal of the quality of the birth history data on which they are based.

Because of the inadequacy of Thailand's vital registration system, a number of surveys have sought to estimate trends and levels of Thai fertility. Age-specific fertility rates for 1965 to 1969 and 1970 to 1974 have been derived from SOFT/WFS data. These estimates are shown in Table 22, together with the estimated rates of the 1964-1965 and 1974-1975 rounds of the Survey of Population Change and the 1968-1969 and 1971-1972 rounds of the Longitudinal Study.

It is important to note that the three surveys SOFT, SPC and LS - involved significant methodological differences, with the result that the age-specific fertility rates presented in Table 22 cannot be aligned chronologically to define 1964-1975 trends. In addition there were some differences in areas of coverage. Thus, the 1964-1965 SPC excluded the cities of Bangkok and Thonburi, hence is not strictly comparable with the 1974-1975 SPC. A major limitation to comparability of SPC rates with those of other studies is methodological: only the SPC rates are based on matching of events from two different sources, i.e. quarterly retrospective surveys and vital registration, with application of the Chandra-

Table 22. Estimated age-specific fertility rates, Thatand, 196A to 1975

| Age | Survey of Ferilicy in Thailand 1 |  | Survey of Population Charge ${ }^{2 /}$ |  | Longitudimal Study $3 /$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1965-1969 | 1970-1974 | 1964-1965 | 1974-1975 | 1968-1969 | 1971 191972 |
| TFR 4/ | 6.25 | 4.85 | 6.25 | 5.10 | 6.10 | 5.35 |
| 15-19 | . 07 | . 07 | . 07 | . 08 | . 07 | . 07 |
| 20-24 | . 25 | . 22 | . 26 | . 25 | . 26 | . 23 |
| 25-29 | . 29 | . 22 | . 30 | . 25 | . 29 | . 29 |
| 30-34 | . 26 | . 18 | . 27 | . 20 | . 23 | . 18 |
| 35-39 | . 21 | . 17 | . 22 | . 15 | . 20 | . 17 |
| 40-44 | . 15 | . 08 | . 11 | . 08 | . 15 | . 12 |
| 45-49 | . 02 | . 03 | . 02 | . 01 | . 03 | . 03 |

1/ Based on data collected by SOFT in 1975.
2/ From The Survey of Population Change, 1964-1967, (Bangkok; Nationa! Statistica! Office, 1969) and Preliminary Report, the Survey of Population Change, 1974-1975, (Bangkok: National Statistical Office, Office of the Prime Minister, 1976). The Bangkok Metropolis was not included in the 1964-1965 survey.
3/ Derived from marital fertility rates reported in John Knodel and Pichit Pitaktepsombati, Fertility and Family Planning in Thailand: Resilts of the Second Round of a National Survey (Paper No. 19, Institute of Population Studies, Chulalongkorn University, Bangkok, 1975) Table 13.
4/ Total Fertility Rate per woman.
sekar-Deming formula to estimate events missed in both systems. SOFT and LS utilized single sources of data, retrospective surveys, and no adjustments were made for possible under-reporting.

The Longitudinal Study involved still other methodological differences. In the 1968-1969 and 1971-1972 surveys the rural areas were surveyed the first year and the urban areas the following year; the samples were assigned weights and combined to provide an approximate national total, as some areas of the country were not included in the sampling universe. The report on the 1971-1972 LS stresses the need for "particular caution" in interpreting age-specific fertility trends on the basis of its results because of inconsistencies in the datal9/. The report itself limits its conclusions on current fertility to noting that: i) rural fertility "declined more among women aged 30 or above than among younger women"; ii) rural fertility was substantially higher than urban fertility; and iii) the total fertility decline as measured by the two rounds was "not implausible".

It is therefore necessary to restrict the initial assessment of fertility based on SOFT, SPC and LS data to consideration of patterns of change rather than trying to provide a precise statistical statement of levels and trends. Within the limits imposed by differences in methodology and the possible effect of sampling errors, some general comments may be made.

Directing attention first to the total fertility rate, i.e. the average completed fertility if age-specific rates prevailing at the time were to remain constant, the studies are consistent in portraying a downward trend from 1964 to ${ }^{\circ}$ 1975. The SOFT total fertility rate declined 22 per cent from 1965-1969 to 1970-1974. The SPC estimate for 1974-1975 was 18 per cent lower than that for 1964-1965, and the Longitudinal Study total fertility rates showed a 12 per cent decrease from 1968-1969 to 1971-1972. The three series are in agreement in portraying a significant reduction in fertility rates from the mid-1960s to the mid-1970s.

The pattern of decline may also be observed by charting the age-specific rates, as in Figure 5A. The most dramatic changes shown by the SOFT and SPC estimates were the rapid declines since the mid-1960s in the rates for the 25 to 29,30 to 34 and 35 to 39 year age groups relative to those of the 20 to 24 year olds. LS II fails to show this decline for the 25 to 29 group, and it is hoped that a further round of the Longitudinal Study, planned for 1979, will clarify some of the questions arising from the second round.

Charting of the age-specific rates for time intervals, as in Figure 5B, shows a general uniformity of pattern for the 1964-1969 period. The shape of the curves, with the highest fertility rates reported for the 25 to 29 age group, is typical of many developing countries. The curves for 1970 to 1975 reflect the significant declines recorded by SOFT and SPC in the fertility rates of the 25 to 29 and 30 to 34 age groups. These rapid declines,

Figure 5A. Age-specific fertility rates, Thailand, 1964 to 1975


Figure 5B. Age-specific fertility rates, Thailand, 1964-1969 and 1970-1975


Figure 5C. Age-specific fertility rates, Thailand, 1965-1969 and 1970-1974,


Table 23. Mean number of live births in the past five years to currently married women married five years and over by number of years since first marriage, for selected background variables

| Variable | Total | Years since first marriage |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5-9 | 10-14 | 15-19 | 50-54 | 25-29 | $30 \div$ |
| TOTAL | 1.0 | 1.6 | 1.2 | 0.9 | 0.7 | 0.4 | 0.2 |
| Residence: |  |  |  |  |  |  |  |
| Urban | 0.8 | 1.5 | 0.9 | 0.4 | 0.4 | (0.2) | * |
| Rural | 1.0 | 1.6 | 1.2 | 1.0 | 0.8 | 0.4 | 0.2 |
| Region of residence: |  |  |  |  |  |  |  |
| North | 0.7 | 1.3 | 0.9 | 0.7 | 0.5 | 0.2 | (0.1) |
| Northeast | 1.3 | 1.9 | 1.5 | 1.3 | 1.0 | 0.68 | (0.1) |
| South | 1.1 | 1.6 | 1.3 | 1.2 | 0.8 | (0.5) | * |
| Central ${ }^{1}$. | 0.7 | 1.4 | 1.0 | 0.7 | 0.6 | 0.3 | * |
| Bangkok Metropolis | 0.8 | 1.6 | (0.5) | (0.5) | (0.3) | * | * |
| Yearis of school completed: |  |  |  |  |  |  |  |
| None | 0.9 | 1.6 | 1.2 | 1.1 | 0.9 | 0.3 | (0.2) |
| 1 to 4 years | 1.1 | 1.6 | 1.2 | 0.9 | 0.7 | 0.5 | 0.2 |
| 5 years and over | 0.8 | 1.2 | (0.8) | * | * | * | * |
| Occupation of husband: |  |  |  |  |  |  |  |
| Professional, technical, administrative and clerical | 0.6 | 1.2 | 0.7 | (0.4) | (0.2) | (0.2) | * |
| Sales and services | 0.8 | 1.5 | 0.8 | 0.6 | (0.6) | (0.2) | * |
| Skilled and unskilled manual | 1.0 | 1.5 | 1.1 | 0.8 | 0.6 | (0.4) | * |
| Farming | 1.1 | 1.7 | 1.3 | 1.1 | 0.8 | 0.4 | 0.2 |
| Standard of living 2/: <br> Non-municipal |  |  |  |  |  |  |  |
| Non-municipal Low | 1.4 | 1.8 | 1.4 | 1.3 | 1.2 | 0.6 | * |
| Medium | 1.1 | 1.8 | 1.3 | 1.2 | 0.9 | 0.5 | (0.3) |
| High | 0.7 | 1.3 | 1.0 | 0.6 | 0.4 | 0.3 | (0.1) |
| Municipal 0.8 |  |  |  |  |  |  |  |
| Total | 0.8 | 1.5 | 0.9 | 0.4 | (0.4) | (0.2) | * |
| Family income ${ }^{\text {2/ }}$ : |  |  |  |  |  |  |  |
| Level 1 (lowest) | 1.3 | 1.6 | 1.5 | 1.3 | 1.0 | (0.6) | * |
| Level 2 | 1.2 | 1.7 | 1.4 | 0.9 | 0.9 | (0.5) | * |
| Level 3 | 1.0 | 1.7 | 1.0 | 0.8 | 0.7 | 0.5 | (0.3) |
| Level 4 | 0.8 | 1.4 | 1.0 | 0.9 | 0.7 | 0.2 | * |
| Level 5 (highest) | 0.8 | 1.4 | 0.8 | 0.7 | 0.6 | 0.2 | * |

Source: Tables 2.4.2
1/ Excluding Bangkok Metropolis
2/ Currently married women in matched couples
while the rate for the 20 to 24 year olds decreased only slighty from mid-1960s levels, has altered the shape of the curves. As already noted, the failure of the LS II rate for the 25 to 29 age group to show a decline requires some clarification. Meanwhile, the basic similarity of the 1970-1974 SOFT and 1974-1975 SPC curves tends to support the conclusion that Thai fertility has declined rapidly since the mid-sixties, and the five per cent difference in total fertility rates may be due largely to the methodological differences already noted.

The age-specific fertility rates shown in Table 22 are indicative of recent trends, but only general comments are warranted until a detailed analysis of the data is completed. For the 20 to 24 age group the three studies suggest a slight decline, though differing in the amount. Further analysis is needed of the extent to which this resulted from the trend toward later marriage (see Table 12). SOFT and SPC data indicate a decline in the rates for 25 to 29 year olds, but with differences in magnitude. The downward trend in rates is evident for the 30 to 34,35 to 39 and older age groups. Further evaluation will depend in part on a determination of the effect of methodology on the SPC rates for 1974-1975.

A great deal of work remains to be done in deriving accurate measures of fertility in Thailand and it is hoped that the information collected by SOFT will assist in defining the extent to which such factors as later marriage, more years of schooling, changes in occupation and other demographic and socio-economic variables are influencing age-specific fertility.

At a later stage of analysis it may be feasible to undertake a comparative study of age-specific fertility, using data of other developing countries that have recently experienced or are now experiencing lower levels of fertility. The comparison in Figure 5C of changes since 1965 in age-specific fertility rates estimated for Thailand and Colombia, for example, raises interesting questions regarding inter-country similarities of pattern in fertility decline $\underline{20}$.
(2) Mean number of live births in the past five years. This measure of current fertility is based on births reported by 2,632 women who had been continuously in the married state throughout the five years immediately preceding the Survey.

Using selected background variables, differentials in recent fertility are summarized in Table 23. These may

20/ The age-specific fertility rates for Colombia are from Joseph E , Potter, Myriam Ordonoz G. and Anthony R. Measham, "The Rapid Decline in Colombian Fertility", Population and Development Review, Volume 2, Nos. 3 and 4 (September and December 1976), pp. 509-528.
be compared with the differentials in cumulative fertility shown in Table 18, keeping in mind that cumulative fertility increases with longer duration of marriage while recent marital fertility tends to decline as the number of years married increases.

In general, a comparison of the data in Tables 18 and 23 suggests that fertility differentials are increasing in Thailand. This is not unexpected in a situation where a significant, but comparatively recent, change in levels of fertility is occurring. The differences are particularly evident for two socio-economic variables: occupation of husband and family income. Relatively high levels of fertility were reported for 25 years or more after first marriage for categories such as the two lowest income levels, farmers, women with no schooling and the groups with the two lowest rural standard of living levels. Regional differences were also pronounced, with the highest fertility sustained in the Northeast and South.

A further comparison may be made between Tables 23 and 20 , the latter reporting on the mean number of children born in the first five years of marriage. Data for two socio-economic variables are given: years of schooling and family income. In both categories there is a slight positive relationship between higher education or income and fertility during the first five years of marriage. Table 23, which reports on births in the last five years to couples married five to nine years, suggests that fertility declined more rapidly among women in higher income levels and with 5 or more years of schooling.
(3) Proportion of currently married women who are pregnant. As a measure of current fertility, the proportion of women currently pregnant is subject to inaccurate reporting due to uncertainty, especially during the first trimester of pregnancy, and to deliberate concealment out of shyness or for other reasons. It should be noted that a high degree of consistency was found in the reporting of current pregnancies by husbands and wives.

Just over 10 per cent of all currently married women in the sample reported a current pregnancy. This figure implies a moderate rather than a high current level of fertility, and is also not inconsistent with a value of 1.0 for the mean number of live-births in the past five years. The prevalence of pregnancy fell from about 20 per cent in the age groups 15 to 19 and 20 to 24 to 12 per cent for the next two quinquennial age groups. No woman over the age of 44 years reported that she was pregnant.

The following figures show the percentage pregnant by age groups for currently married women.

| Age Group | Per cent <br> pregnant |
| :---: | :---: |
| Total | 10 |
|  |  |
| $15-19$ | 21 |
| $20-24$ | 20 |
| $25-29$ | 12 |
| $30-34$ | 12 |
| $35-39$ | 8 |
| $40-44$ | 3 |

A tabulation of the percentage of currently married women reporting a current pregnancy by duration of marriage and age at first marriage showed a marked decline in the percentage pregnant after the first five years of marriage. The percentage currently pregnant of women marrying at ages 25 years and over was considerably lower for even the most recent marriage cohort, as the following figures show:

| Years since <br> first <br> marriage | Total | Per cent pregnant <br> Age at first marriage |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Under <br> $\mathbf{2 0}$ | $\mathbf{2 0 - 2 4}$ | $25+$ |
| TOTAL | 10 | 11 | 11 | 7 |
| $0-4$ | 21 | 20 | 24 | 15 |
| $5-9$ | 11 | 13 | 8 | 4 |
| $10-14$ | 11 | 13 | 9 | $(\mathrm{x})$ |
| $15-19$ | 9 | 11 | 6 | $(2)$ |
| $20-24$ | 4 | 5 | 2 | $*$ |
| $25-29$ | 2 | 2 | 0 | . |
| 30 or over | 0 | 0 | .. | . |

### 4.5.5 Survivorship of children

A brief reference to child survivorship may be useful in the consideration of fertility patterns and trends. Further analysis is needed prior to the computation of infant and child mortality rates from birth histories, but a considerable among of relevant data is provided in Tables 2.3.1 to 2.3.3. The mean number of children ever born to women ever married was 3.9 , of whom 3.4 were living. Of all live-born children, 13 per cent had died. Table 24 summarizes data on survivorship and shows that infant and child mortality were widely experienced. One-third of the women who had borne four children reported that one or more had died. The percentage increased rapidly for those with five or more children ever born. The table also shows the mean number of living children by number of children ever born.

Table 24. Per cent of women reporting one child or more deceased, and mean number of living children, by number of children ever borm

| Childrea <br> ever born | Per cent reporting <br> deceased children | Mean number of <br> living children |
| :---: | :---: | :---: |
|  |  |  |
| 1 | 3 | 1.0 |
| 2 | 12 | 1.9 |
| 3 | 22 | 2.8 |
| 4 | 34 | 3.6 |
| 5 | 46 | 4.4 |
| 6 | 53 | 5.2 |
| 7 | 57 | 6.1 |
| 8 | 64 | 6.8 |
| $9+$ | 61 | 7.9 |

Source: Tables 2.3.3

### 4.6 PREFERENCES IN NUMBER AND SEX OF CHILDREN

As part of the effort to gain a better understanding of fertility and contraceptive behavior, the SOFT/WFS questionnaires asked both husbands and wives the number and sex of children wanted. The major question in analysis concerns the reliability and predictive value of stated preferences and attitudes. This question was examined in detail by Knodel and Prachuabmoh:21/ and their conclusion, though qualified, was that inquiries in developing countries regarding family size preferences brought meaningful responses. In this preliminary assessment of SOFT data, some of the reasons for qualification are noted.

### 4.6.1 Preferences in total number of children wanted

Each man and woman interviewed in SOFT/WFS was asked how many children he or she would want "if you could choose the number". Answers to questions of this kind should only be interpreted keeping in mind that the widely differing circumstances of the respondents are crucial factors influencing the replies. For those recently married, responses may have tended to reflect long-term plans and goals that can change significantly over time. For those who were ending or have ended their reproductive life, the question was hypothetical since preferences, however strongly felt, cannot alter the past. An element of rationalization may also have influenced the replies of older respondents.

[^13]Table 25 Per cent distribution of women ever maried according to total number of children wanted and mean total number of children wanted, by years since first marriage

| Years since <br> fist marriage | Total | Total number of children wanted |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $0=1$ | 2 | 3 | 4 | 5 | $6 \div$ | Other answers | Mesm |
| TOTAL | 100.0 | 3.0 | 20.0 | 24.3 | 26.3 | 12.1 | 10.8 | 3.4 | 3.7 |
| Under 5 | 100.0 | 7.1 | 33.5 | 27.6 | 19.4 | 6.3 | 3.8 | 2.2 | 3.0 |
| 5-9 | 100.0 | 2.9 | 23.8 | 32.5 | 27.5 | 7.7 | 3.8 | 1.9 | 3.3 |
| 10-14 | 100.0 | 2.0 | 17.0 | 24.3 | 29.4 | 15.7 | 9.3 | 2.2 | 3.7 |
| 15-19 | 100.0 | 1.5 | 13.5 | 19.5 | 26.9 . | 18.4 | 15.8 | 4.6 | 4.1 |
| 20-24 | 100.0 | 1.3 | 16.0 | 17.5 | 28.9 | 13.9 | 17.4 | 5.0 | 4.2 |
| 25-29 | 100.0 | 1.6 | 8.1 | 21.1 | 27.9 | 15.9 | 19.8 | 5.7 | 4.4 |
| $30+$ | 100.0 | 1.6 | 10.1 | 16.3 | 28.7 | 10.0 | 27.8 | 5.5 | 4.7 |

Source: Table 3.4.2B
(1) Demographic aspects. The responses of all ever-married women to the question on the number of children wanted are summarized in Table 25. For all women the mean number wanted was 3.7 children, while in terms of marital duration the mean ranged from 3.0 children wanted by those married less than five years to 4.7 children for those married thirty years and over. While a part of this difference may reflect some decline in desired family size, it is likely that an important determinant was the fact that women who have been married longer had larger families and had adjusted their expressed desires to accord more closely with achieved family size.

One of the most interesting features of Table 25 is that only a very small proportion of women gave non-numerical answers, such as "up to God" or "as many as possible".

The mean numbers of children desired, tabulated by number of living children, current age, years since first marriage and age at first marriage, are found in Tables 3.4.3 to 3.4.5. Again there is the suggestion that actual family size is a major determinant of desired size but, as is shown in the top row of Table 26 , women with five or more children were willing to report a desired family size less than that achieved. The detailed tables show that as the number of living children rose from five to nine the mean total number of children wanted rose only from 4.3 to 4.9 children, indicating that a large number of high parity women would have preferred smaller families.

Women with small families at present showed a mean desired family size of about three children. It is possible to compare the responses on total number of children wanted with the figures obtained by adding the number of living children and the number of more
children wanted. The figures that follow show a slight but consistent discrepancy.

| Number <br> of <br> living children | Total of living <br> and mean of more <br> children wanted | Mean total <br> number of <br> children wanted |
| :---: | :---: | :---: |
| 0 | 2.8 | 3.0 |
| 1 | 2.6 | 2.8 |
| 2 | 2.9 | 3.2 |

The reason for the discrepancy appears to be that a surprisingly high proportion of low parity respondents said that they did not want more children. Some of these women, when asked the total number of children wanted if they could choose, may have given a number higher than the number of living children, thus raising the mean for the group. Further tabulations and analysis are needed to clarify this point. Meanwhile, it is evident that younger women have expressed a preference for relatively small families.
(2) Differentials in the total number of children wanted. The data in Tables 26 and 27 present differentials for a number of demographic and socio-economic variables and, in general, follow expected patterns.

Rural-urban differentials reveal a preference expressed by rural women for a larger number of children. There are apparent discrepancies between these results and the responses summarized in Table 29, showing the proportion of women who said they did not want any more children, and in Table 32, giving the mean number of more children wanted. The former suggested a smaller family size preference among rural women and the latter showed little difference. it is possible that the interpretation given by rural women to the question: "Do

Table 26 Mean total number of children wanted by currently married women by number of living children, for selected background variables

| Variable | Total | Number of living children |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 3 | 4 | 54 |
| TOTAL | 3.7 | 3.0 | 2.8 | 3.2 | 3.6 | 4.0 | 4.6 |
| Residence: |  |  |  |  |  |  |  |
| Urban | 3.4 | (2.7) | 2.7 | 3.1 | 3.3 | 3.8 | 5.1 |
| Rural | 3.7 | 3.0 | 2.8 | 3.2 | 3.6 | 4.1 | 4.6 |
| Region of residence: |  |  |  |  |  |  |  |
| North | 3.3 | 2.6 | 2.4 | 3.0 | 3.2 | 3.7 | 4.1 |
| Northeast | 4.1 | 3.2 | 3.4 | 3.4 | 3.9 | 4.1 | . 4.9 |
| South | 4.1 | (3.3) | 3.5 | 3.9 | 4.1 | 4.1 | 4.8 |
| Central $1 /$ | 3.4 | (2.9) | 2.5 | 2.9 | 3.2 | 4.1 | 4.5 |
| Bangkok Metropolis | 3.4 | (2.8) | (2.7) | 3.0 | (3.1) | (3.8) | 4.6 |
| Years of school completed: |  |  |  |  |  |  |  |
| No education | 4.1 | (2.8) | 3.0 | 3.6 | 3.8 | 4.0 | 4.6 |
| 1 to 4 years | 3.7 | 3.0 | 2.8 | 3.1 | 3.6 | 4.1 | 4.6 |
| 5 to 10 years | 3.2 | (2.9) | 2.7 | 3.2 | * | (3.6) | * |
| 11 years and over | 2.9 | * | (2.8) | (3.0) | * | * | * |

Source: Table 3.4.5
1/ Excluding Bangkok Metropolis
you want to have another child sometime?" may have associated it with wanting to have another child immediately or soon, in which case the question on total number of children wanted provides a better measure of differentials in fertility preferences.

The differentials based on region of residence, years of schooling and occupation of the husband are consistent with those observed in connection with cumulative and current fertility. The economic indices in Table 27 do not reveal any clear association with family size preferences and suggest that more refined indices may be needed.
(3) Comparison of preferences of husbands and wives for the total number of children wanted. The detailed data are presented in Table 6.1.2. The mean total number of children wanted by husbands was 3.9 , compared to 3.7 children as the mean total wanted by wives. Thirty-two per cent of the husbands wanted a larger number than did their wives, and 28 per cent of the wives wanted the larger number. Only 40 per cent of husbands and wives agreed on the total wanted.

Table 28 compares the responses of husbands and wives, and it is evident that closest agreement was among couples with three or four children. For couples with two
or less children, presumably in the earlier years of marriage, there appeared to be less agreement. Among couples where one spouse wanted six or more children, the wishes of the other were on the average more moderate.

### 4.6.2 Respondents not wanting more children

(1) Demographic aspects. The proportions of currently married fecund women who do not want more children are tabulated by age of women and number of living children in Table 3.1.1 and the data are summarized in Table 29. A tabulation by age at first marriage and duration of marriage is found in Table 3.1.2. The data indicate that the major determinant of the attitude toward future childbearing is the number of living children and suggest that, for a given family size, current age, age at marriage and duration of marriage make little difference.

The majority of Thai women appear to prefer relatively small families. Of those with no living children, only five per cent said they did not want a child, but the percentage rose rapidly as the number of living children increased. The approximate proportions who said they did not want more children were one-fifth of the women with one living child, one-half of those with two and

Table 27. Mean total number of children wanted by currenty married women in matched couples by number of living children, for selected background variables

| Variable | Total | Number of living children |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 8 | 4 | $5 \cdot 4$ |
| TOTAL | 3.8 | 3.0 | 2.9 | 3.2 | 3.6 | 4.1 | 4.6 |
| Standard of living: |  |  |  |  |  |  |  |
| Non-municipal |  |  |  |  |  |  |  |
| Low | 4.0 | (3.3) | 3.2 | 3.4 | 3.8 | 4.1 | 4.8 |
| Medium | 4.0 | (2.9) | 3.1 | 3.3 | 3.8 | 4.2 | 4.6 |
| High | 3.5 | 2.9 | 2.6 | 3.1 | 3.3 | 4.0 | 4.3 |
| Municipal |  |  |  |  |  |  |  |
| Low | 3.7 | * | * | * | (3.3) | * | (5.1) |
| Medium | 3.4 | * | $\stackrel{*}{*}$ | (2.7) | * | * | (4.7) |
| High | 3.6 | * | (2.8) | (3.3) | * | (3.9) | * |
| Family income: |  |  |  |  |  |  |  |
| Level 1 (lowest) | 4.0 | (3.2) | 8.3 | 3.8 | 3.8 | 4.2 | 4.8 |
| Level 2 | 3.8 | (2.7) | 3.2 | 3.3 | 3.5 | 3.9 | 4.6 |
| Level 3 | 3.8 | (2.8) | 2.8 | 3.1 | 3.5 | 4.0 | 4.7 |
| Level 4 | 3.7 | * | 2.8 | 3.2 | 3.4 | 4.0 | 4.3 |
| Level 5 (highest) | 3.7 | (3.1) | 2.6 | 3.3 | 3.7 | 4.1 | 4.4 |
| Size of family enterprise: |  |  |  |  |  |  |  |
| None 1/ | 3.5 | (3.2) | 2.6 | 3.1 | 3.3 | 3.9 | 4.7 |
| Level 1 (smallest) | 3.8 | (3.0) | 2.9 | 3.1 | 3.4 | 4.2 | 4.6 |
| Level 2 | 3.7 | * | 2.7 | 3.4 | 3.5 | 3.9 | 4.4 |
| Level 3 | 3.9 | * | 3.1 | 3.0 | 3.7 | 4.0 | 4.6 |
| Level 4 | 4.1 | * | 3.1 | 3.6 | (3.9) | (4.1) | 4.7 |
| Level 5 (largest) | 3.8 | (2.6) | 3.1 | 3.3 | 3.9 | 4.4 | 4.4 |

Source: Table 3.4.5
1/ No family enterprise or residing in municipal area

Table 32. Mean number of more children wanted by currently married fecund women, by age and number of hiving children.

| Age group | Total | Number of living children |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 5 | 4 | $5+$ |
| TOTAL | 0.8 | 2.8 | 1.6 | 0.9 | 0.5 | 0.2 | 0.1 |
| Under 20 | 1.9 | 2.7 | 1.7 | (0.9) | * | * | * |
| 20-24 | 1.4 | 2.9 | 1.7 | 1.0 | 0.6 | * | * |
| 25-29 | 0.9 | (3.1) | 1.6 | 0.8 | 0.6 | 0.2 | 0.2 |
| 30-34 | 0.5 | * | (1.2) | 0.9 | 0.5 | 0.3 | 0.1 |
| 35-39 | 0.3 | * | (1.2) | (0.7) | 0.4 | 0.2 | 0.2 |
| $40+$ | 0.2 | * | * | (0.9) | (0.3) | (0.1) | x |

Source: Table 3.3.2A

### 4.6.3 Respondents wanting more children

(1) Demographic aspects. The data in Tables 3.3.1 to 3.3 .4 on numbers of more children wanted are based on replies by currently married fecund women and are summarized in Table 32.

As was the case with women not wanting more children, family size is the major determinant of preferences expressed for more children. When the number of living children is taken into account, age of the respondent is only slightly associated with the mean number of more children wanted. Similarly, marriage duration and age at marriage appear to have little effect.

By adding to the number of living children the additional number wanted a measure of the total number of children wanted is obtained. The mean totals for women with no, one and two living children were $2.8,2.6$ and 2.9 children respectively, indicating a consensus among lower parity groups for less than three children. The use of this measure is limited by the fact that it makes no allowance for preferences for a family size smaller than that already achieved. Thus, for women with five or more children, Table 26 shows the mean number of children wanted as 4.6 , indicating that some women would have preferred smaller families.
2) Differentials in the number of more children wanted. Detailed data are given in Tables 3.3 .5 A to 3.3 .5 J , with a summary of key differentials in Table 33 , As was noted in Section 4.6.2, the most pronounced differences are those between regions. The higher mean
totals of more children wanted by women living in the Northeast and South are in agreement with other indicators of preference and behavior.
(3) Comparison of preferences of husbands and wives for numbers of more children wanted. Some aspects of this subject have been touched upon in the previous section. Table 34 provides a comparison, as family size increases, of the tendency of husbands and wives to agree on the number of more children wanted. During the earlier years of marriage the extent of agreement appears moderate, and less than half of the childless and one-child couples indicated the same number of additional children wanted. At this stage couples could be expected to have flexible views, but as the size of the family increases the tendency to agree becomes more pronounced. The fact that 91 per cent of the couples with five or more children agreed suggests strong unanimity of opinion that they did not want more children.

There was a slight tendency for husbands to want a larger number of children as the overall picture showed 18 per cent of the husbands and 16 per cent of the wives wanting a larger number than their spouses.
(4) Sex of living children as a factor affecting attitudes toward having more children. The hypothesis that the sex of living children is a key determinant of the wife's attitude toward limiting family size is examined in Tables 3.2 .1 and 3.2.2. Table 35 provides a comparison of the attitudes of husbands and wives with two living children.

Table 33. Mean number of more childrea wanted by currenty married fecund women by number of living children, for selected background variables

| Variable | Total | Number of living children |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 9 | 3 | 4 | $5+$ |
| TO'「AL | 0.8 | 2.8 | 1.6 | 0.9 | 0.5 | 0.2 | 0.1 |
| Residence: |  |  |  |  |  |  |  |
| Urban | 0.9 | (2.8) | 1.5 | 0.7 | 0.5 | (0.2) | 0.2 |
| Rural | 0.8 | 2.8 | 1.6 | 0.9 | 0.5 | 0.2 | 0.1 |
| Region of residence: |  |  |  |  |  |  |  |
| North | 0.6 | (2.8) | 1.0 | 0.6 | 0.2 | 0.1 | 0.1 |
| Northeast | 0.8 | (3.0) | 2.1 | 1.1 | 0.6 | 0.2 | 0.1 |
| South | 1.2 | * | 2.3 | (1.6) | 1.0 | (0.5) | 0.3 |
| Central 1 / | 0.7 | (2.4) | 1.2 | 0.6 | 0.3 | 0.1 | 0.1 |
| Bangkok metropolis | 1.0 | * | (1.6) | (0.6) | (0.3) | * | (0.1) |
| Years of school completed: |  |  |  |  |  |  |  |
| None | 0.6 | * | (1.7) | (1.1) | 0.7 | 0.2 | 0.2 |
| 1 to 4 years | 0.8 | 2.8 | 1.6 | 0.8 | 0.5 | 0.2 | 0.1 |
| 5 to 10 years | 1.3 | (2.9) | 1.5 | (0.9) | * | * | * |
| 11 years and over | 1.4 | * | (1.4) | * | * | * | * |

Source: Table 3.2.4
1/ Excluding Bangkok Metropolis

Table 34. Per cent distribution of couples according to views expressed on number of more children wanted, by number of living children.

| Number of <br> living <br> children | Wife wants <br> greater <br> number | Both want <br> same <br> number | Husband <br> wants <br> greater <br> number |
| :---: | :---: | :---: | :---: |
|  |  |  | 18 |
| TOTAL | 16 | 66 | 27 |
| 0 | 32 | 39 | 35 |
| 1 | 26 | 54 | 24 |
| 2 | 22 | 68 | 17 |
| 3 | 15 | 83 | 9 |
| 4 | 8 | 91 | 6 |
| $5+$ | 3 |  |  |

Source: Table 6.1.4

Table 35. Per cent distribution of couples with two living children according to views expressed on wanting more children, by number of living sons

| Number of living soms | Views expressed by husband and wife |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Neither want more children | Wife only wants more children | Husband only wants more children | Both want more children |
| TOTAL | 30 | 15 | 15 | 39 |
| 0 | 15 | 15 | 22 | 50 |
| 1 | 38 | 15 | 14 | 33 |
| 2 | 23 | 17 | 12 | 47 |

Source: Table 6.1.2

The data for all women ever married show a moderate association between the sex of living children and the proportion wanting more children. Of women with two living children, 49 per cent of those with one child of each sex wanted more children, compared with 58 per cent of those with no daughter and 66 per cent of those with no son. A desire for both $a$ son and a daughter appears to be a more important influence than an exclusive preference for sons. The fact that only 37 per cent of women with three or more daughters and no sons said they wanted more children further supports the view that a strongly felt need to have at least one son is not common in Thailand. This accords with earlier research findings.

The data in Table 35 suggest that husbands are slightly more biased in favor of sons. Of couples with two living children, the proportions of husbands wanting more children rose from 47 to 59 to 72 per cent for those with one son, two sons and no son, respectively. For wives the equivalent figures were 48,64 and 65 per cent.

Further evidence pertinent to the study of sex preference was obtained through a question asked of respondents wanting more children: "Would you prefer your (next) child to be a boy or a girl?" The following percentages summarize the replies:

|  | Sex preference <br> (per cent) <br> Girl |  |  |
| :--- | :---: | :---: | :---: |
| Boy |  | Either |  |
| Husband | 52 | 28 | 21 |
| Wife | 51 | 35 | 14 |

The answers indicate that, while husbands were slightly more biased than wives toward sons, both husbands and wives showed a definite preference for a boy. It appears that a preference for sons exists but it is
not strong enough to markedly affect decisions regarding limitation of family size.

### 4.7 ATTITUDES ON ADVANTAGES AND DISADVANTAGES OF CHILDREN

As part of the effort to identify factors influencing fertility behavior the Husband's Survey included a number of questions relating to the advantages and disadvantages of large and small families. This does not imply that family size is assumed to be the result of a conscious process of adding up costs and benefits of children. A wide range of customary and traditional pressures, exerted through family and community relationships, enter into the process and are seldom articulated in a formalized survey interview. The questions asked were intended to identify those considerations recognized by the respondents as being associated with family size, though their effect on fertility behavior could not be measured. Further, it was hoped through the study of demographic and socio-economic differentials to gain better insight into factors affecting attitudinal changes.

In interpreting the responses, it is important to keep in mind that the interviewers were instructed to mention two or less children as an example of a small family and six children as an example of a large family 22 .

### 4.7.1 Advantages and disadvantages of large and small families <br> Attitudes toward family size were sought through four open-ended questions on advantages and disadvantages and the husbands' responses are summarized in

[^14]Table 36. Number and per cent of husbands expressing views on advantages of large families and disadvantages of small families, by residence $\sqrt{ } /$

| Advantage or disadvantage | Total | Residence |  |
| :---: | :---: | :---: | :---: |
|  |  | Urban | Ruxal |
| Advantages of Large Families |  |  |  |
| Economic benefit and security: |  |  |  |
| Help in family business or on farm | 34.5 | 7.9 | 38.8 |
| Care when parents are ill or old | 24.3 | 33.0 | 23.2 |
| Financial help when parents are old | 21.3 | 29.8 | 20.2 |
| Help in housework | 16.0 | 12.0 | 16.6 |
| Additional income for family | 13.4 | 9.1 | 14.0 |
| Unspecified help $\quad$ | 1.1 | 0.6 | 1.1 |
| Happiness, love and companionship | 4.7 | 8.5 | 4.2 |
| Continuity of family name : | 3.4 | 7.3 | 2.9 |
| Do not know or never thought about it | 2.5 | 1.8 | 2.6 |
| Disadvantages of Small Families |  |  |  |
| Lack of economic benefit and security: |  |  |  |
| Lack of help in family business or on farm | 18.3 | 3.5 | 20.2 |
| Insufficient care when parents are old | 20.3 | 20.2 | 20.3 |
| Lack of financial help when parents are old | 11.0 | 9.7 | 10.5 |
| Lack of help in housework . | 6.8 | 4.1 | 7.2 |
| Not enough income earners | 0.9 | 0 | 1.0 |
| Lack of help in general | 0.8 | 0.1 | 0.8 |
| Loneliness for parents or children | 5.9 | 10.3 | 5.3 |
| Too few to continue family name | 11.0 | 14.7 | 10.5 |
| Anxiety about child mortality | 10.9 | 16.1 | 10.3 |
| Do not know or never thought about it | 5.2 | 4.1 | 5.4 |

[^15][^16]1/ Totals exceed 100 per cent because up to two responses were recorded.

Tables 36 and 3723 . In recording the replies, up to two responses were written down by the interviewer and these were later coded into categories $\frac{24 / \text {. As a husband who }}{}$ gave two responses falling in different categories would be counted twice, the percentage totals exceed 100 per cent. The mean number of responses to each of the four questions ranged from 1.3 to 1.5 . From the present tabulations it is not possible to tell the extent of overlap of responses such as, for example, the same respondent mentioning 'care when ill or old' as an advantage of large families and also mentioning 'lack of care when ill or old' as a disadvantage of small families. As the same respondent may have mentioned two of the categories under 'economic benefit and security', these categories cannot be consolidated into an overall total.

That the questions are meaningful ones is strongly implied by the small proportion - five per cent or less - of husbands who replied that they did not know or had not thought about the subject.
(1) Advantages of large families and disadvantages of small families. Over 20 per cent of the husbands saw no advantages of large families and 35 per cent saw no disadvantages of having small families. By comparison, less than five per cent could give no advantages of small or no disadvantages of large families. The percentages, classified by rural-urban residence, were as follows:

|  | Residence |  |  |
| :---: | :---: | :---: | ---: |
|  | Total | Urban | Rural |
| No advantages to: |  |  |  |
| Large families | 21.5 | 34.2 | 19.2 |
| Small families | 4.8 | 2.9 | 5.1 |
|  |  |  |  |
| No disadvantages to: |  |  |  |
| Large families | 3.7 | 1.5 | 4.0 |
| Small families | 34.9 | 41.1 | 34.1 |

The most frequently mentioned advantage of large families was the economic benefit that children provided as a source of labor on the farm or in the family enterprise, referred to by over one-third of the husbands. This was primarily a rural concern, mentioned by 39 per cent of rural but only eight per cent of urban husbands. The advantage of large families specified most frequently by urban respondents was care when parents are ill or old, mentioned by one-third of them.

It is evident from Table 36 that the economic benefit and security deriving from large families were considered their greatest advantage. In a developing country where the main occupation is farming and where

23/ Tables 86 through 40 and the relevant tables in Volume II include only the responses of husbands for whose wives' interviews were completed and matched.
24/ Several categories mentioned by only one or two per cent of the respondents are omitted from Table 36 and 37.
much of the population is self-employed, hence lacking institutional support in illness and old age, the economic role of children becomes predominant. Psychological factors such as happiness, love and companionship for parents or other children were mentioned by only about five per cent of the respondents. While only three per cent mentioned continuity of the family name as an advantage of large families, 11 per cent referred to it as a disadvantage of small families. A comparable proportion specified anxiety about child mortality as a disadvantage.

There may be some question on the tendency of respondents to wish to appear 'rational' by giving economic factors as the main determinants of family size. The traditional role of children in the economy and society does accord with the attitudes expressed. Further, though urbanization as an aspect of modernization may be 'expected to alter attitudes, traditional views on children as sources of security in illness and old age are likely to continue until adequate institutional alternatives are established. That urbanization has some effect on attitudes is suggested by the fact that twice the proportion of urban husbands mentioned psychological considerations.
(2) Advantages of small families and disadvantages of large families. Keeping in mind that two or less children were cited as few children and six as an example of many children, the responses presented in Tables 36 and 37 suggest a tendency to favor smaller rather than larger families. Thirty-five per cent of the husbands gave no disadvantages of small families, while less than five per cent mentioned no advantages. Less than four per cent saw no disadvantages of large families, while 21 per cent saw no advantages.

Where the primary advantage of large families was seen as economic benefit and security, the most commonly mentioned advantage of small families was the lower economic cost and financial burden. As might be expected, the cost of educating children was assigned greater importance by urban husbands. The fact that almost two-thirds of the rural respondents mentioned financial cost as a disadvantage of large families suggests that the rising cost of living has had an immediate impact on rural families, tending to over shadow the longer-term economic benefits of more children. A comparison in Tables 36 and 37 of the proportions mentioning various aspects of economic costs and benefits is illustrative of the problem of defining attitudes most likely to affect behavior.

The factors mentioned as advantages of small families were, to a much greater degree than those of large families, social and psychological in nature, including better opportunities for rearing, educating and disciplining children and giving them care and attention. Less than five per cent of the husbands referred to problems of inheritance and, perhaps because the question was asked of husbands rather than wives, an even smaller percentage noted any effect of family size

Table 37. Number and per cent of hushands expressing views on advantage of small families and disadvantages of large families, by residence $1 /$

| Advantage or disadvantage | Total | Residence |  |
| :---: | :---: | :---: | :---: |
|  |  | Uxbax | Inmal |
| Advantages of Small Families |  |  |  |
| Lower economic cost (excluding education) | 57.9 | 49.8 | 58.9 |
| Less costly to educate children | 36.8 | 55.7 | 34.4 |
| Ease in rearing children | 33.2 | 35.0 | 32.9 |
| More care of and attention to children | 6.4 | 14.0 | 5.4 |
| No inheritance problems | 3.5 | 0 | 3.9 |
| Ease in disciplining children | 2.7 | 1.5 | 2.9 |
| Less restriction on working career | 2.6 | 2.3 | 2.7 |
| Do not know or never thought about it | 2.2 | 1.5 | 2.3 |
| Disadvantages of Large Families |  |  |  |
| High economic cost (excluding education) | 64.8 | 58.8 | 65.6 |
| High cost of educating children | 29.6 | 45.9 | 27.5 |
| Difficulties in rearing children | 34.2 | 38.3 | 33.6 |
| Not enough care and attention for children | 5.4 | 10.2 | 4.8 |
| Problems of inheritance | 3.8 | 0.3 | 4.3 |
| Problems of disciplining children | 4.9 | 3.5 | 5.0 |
| Restrictions on working career | 0.5 | 0.6 | 0.5 |
| Do not know or never thought about it | 2.2 | 0.9 | 2.5 |

Number of Respondents

| Advantages of small families | $\cdots$ | $\cdots$ | 2,955 | 343 | 2,612 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Disadvantages of large families |  |  | 2,958 | 342 | 2,616 |

Source: Tables 6.4.3 - 6.4.4

1/ Totals exceed 100 per cent because up to two responses were recorded.
on working careers. Additional detailed tabulations are given in Tables 6.4.3 and 6.4.4.
4.7.2 Attitudes on specific costs and benefits of children

Husband were asked a number of questions about their attitudes on specific costs and benefits of children, of which the most important were:
(1) Can people in the respondent's circumstances expect financial help from their unmarried children ad from children after they marry? 25/
(2) Can they expect support from their children in sickness and old age?
25) The Thai word used in the questionnaire was neared to 'hope' than to 'expect'.
(3) How many children does the respondent consider a heavy economic burden to raise?

Analysis of responses in terms of demographic and socio-economic differentials may suggest ways in which the background variables influence attitudes and expectations related to family formation, particularly in a society undergoing relatively rapid demographic change.

Table 38 presents a cross-tabulation of replies with selected background variables. Almost two-thirds of the respondents expected financial support from their children, though the percentage not expecting it was slightly higher for husbands under 35 years of age. Virtually nine in ten husbands expected support in illness and old age, and this attitude was shared equally by younger and older respondents. As might be anticipated, the percentages not expecting financial help or support were higher
among urban husbands, and those with higher income and more years of school completed. The urban-rural differential may be compared with relevant responses in Table 36, where urban residents mentioned financial help and care in old age as an advantage of large families more often than did the rural respondents. The two findings are not necessarily contradictory.

More than half the respondents saw four or fewer children as being a heavy economic burden. The extent to which answers were influenced by current level of income is suggested by the differential responses of those in the lowest and highest income levels.

### 4.7.3 Value of children vs. achieved fertility

A comparison of attitudes on costs and benefits of children with fertility behavior does not imply a simple causal relationship but it may suggest that, within the total complex picture, attitudes tend to influence achieved fertility.

Table 39 presents the mean number of children born to wives of husbands classified by their atticudes on costs and benefits of children. It is evident that husbands with more children also emphasized the benefits of children. Introduction of the demographic control of duration of manriage does not alter the pattern, supporting earlier observations that in the aggregate attitudes regarding the advantages and disadvantages of large and small families do not show great differentials by age or parity. In consequence, the attitudes expressed cannot be explained as being simply rationalizations for existing family size.

Table 40 compares the mean number of living children with the mean number of children wanted by husbands classified by general attitudes towards advantages and disadvantages of large and small families. Again, the pattern is consistent. Husbands who saw no advantages in large families wanted and average of 3.4 children and had 3.0 children living, while those who saw no advantages in small families had a mean of 4.1 children living and wanted an average of 5.8 children.

Table 38. Per cent of husbands expressing views on costs and benefits of children, for selected background variables

| Variable | Expect no financial htelp from married or unmarried children | Expect no support from children in old age | Four or fewer children a heavy economic burden |
| :---: | :---: | :---: | :---: |
| TOTAL | 35.8 | 11.8 | 54.8 |
| Current age of husband: |  |  |  |
| Under 35 years | 38.9 | 11.1 | n.t. |
| 35 years and over | 33.5 | 12.4 | n.t. |
| Residence: |  |  |  |
| Urban | 41.3 | 19.9 | 52.4 |
| Rural | 34.9 | 10.8 | 55.2 |
| Years of school completed: |  |  |  |
| None | 26.6 | 7.0 | 53.3 |
| 1 to 4 years | 33.3 | 10.0 | 56.0 |
| 5 years and over | 51.8 | 23.9 | 49.7 |
| Family income: |  |  |  |
| Level 1 (lowest) | 27.7 | 7.3 | 59.4 |
| Level 3 (middle) | 36.1 | 10.0 | 56.5 |
| Level 5 (highest) | 44.4 | 20.8 | 45.5 |

Table 39. Mean number of children ever born to wives of husbands expressing views on costs and benefits of children, by duration of marriage from 10 to 14 years.

| Variable | Total | Married <br> 10 to 14 <br> years |
| :--- | :---: | :---: |
|  |  |  | | Expectation of financial help |
| :--- |
| from married and unmarried |
| children: |

[^17]Table 40 . Mean total number of children wanted by husbands and mean number of living children of wives of husbands expressing views on advantages and disadvantages of laxge and small families.

| Attitude toward |  |  |
| :---: | :---: | :---: |
| large families | Mean <br> number <br> of living <br> children | Mean total <br> number of <br> children <br> wanted |
| TOTAL | 3.4 | 3.9 |
| No advantages of large fami- <br> lies or no disadvantages of <br> small families | 3.0 | 3.4 |
| High economic costs as dis- <br> advantage of large families | 3.3 | 3.7 |
| Emotional costs and difficul- <br> ties in rearing children as <br> disadvantages | 3.3 | 3.8 |
| Continuity of family name <br> and compensation for child <br> mortality as advantages | 3.3 | 3.9 |
| Economic benefit and security <br> as advantages | 3.6 | 4.1 |
| No disadvantages of large fa- <br> milies or no ad"antages of <br> small families | 4.1 | 5.8 |

Source: Tables 6.4.1-6.6.1
Note : Means are weighted by the number of responses, which differ from the number of respondents.

### 4.8 ENOWTEDGE AND USE OF CONTRACRPTION

As a family planning program has been implemented officially in Thailand since 1970, information on contraceptive knowledge and use among Thai women should be helpful in assessing the impact of the program as well as in explaining fertility levels and differentials.

This section presents the findings on knowledge of contraception and past, present and intended use, based on responses to the fertility and husband's questionnaires. It also includes a brief discussion of the relationship of breast-feeding to fertility.

Knowledge of contraception was defined as having heard of any method or of a specific method. It did not require knowledge of how to use a method or where to obtain it.

In analyzing the Survey data a distinction is made between 'efficient' and 'inefficient' methods of contraception. Efficient methods are those ordinarily offered in official family planning programs and include the pill, intra-uterine device (IUD), condom, injection, other scientific female methods (e.g. foaming tablet, diaphragm) and female and male sterilization. Inefficient methods include douche, rhythm, withdrawal, abstinence and folk methods.

### 4.8.1 Knowledge of contraceptive methods

(1) Knowledge of any method. Ninety-six per cent of the women interviewed had heard of at least one efficient contraceptive method and less than one-half of one per cent had heard of an inefficient but not of an efficient method. These figures contrast sharply with the findings of the first round of the Longitudinal Study in 1968-1969 that only 48 per cent of currently married rural women and 74 per cent of urban women had heard of any method of contraception $\underline{26}$. It is evident that there was a very substantial increase in awareness during the interval.
(2) Knowledge of specific methods. As shown in Table 41, nearly all married women had heard of the pill and substantial majorities were aware of the IUD, injection and female and male sterilization. About one-half of them knew of the condom and less than one-quarter had heard of foaming tablets, the diaphragm and related methods of contraception. Just over one-half of the women had heard of one or more of the inefficient methods, including douche, rhythm, withdrawal and abstinence.

Details concerning the extent of knowledge among

[^18]different age groups are given in Table 4.2.A. The age group 15 to 19 years had seven per cent who said they had not heard of any contraceptive method and four per cent of those aged 35 and over disclamed any knowledge. Awareness of methods was highest in the middle age groups.
(3) Differentials in knowledge of contraception. The proportions of women who did not know of any method, classified by urban-rural residence, region of residence and educational level, are shown in Table 4.2 .2 and summarized in Table 42. The differentials are in the expected directions but are relatively small. Where the 1968-1969 Longitudinal Study, referred to earlier, reported about one-half of the rural women and one-quarter of the urban women interviewed had not heard of any method, the SOFT figures show four per cent and one per cent respectively. One in ten of the women with no formal schooling were unaware of any method of contraception, as were one in ten of those living in the Southern Region. The data suggest that, for major segments of the female population, at least elementary knowledge of contraceptive methods is now virtually universal.
(4) Comparison of husband's and wife's knowledge of contraception. As can be seen in Table 43, the wife tended to be more knowledgeable about most methods and there were major differences between spouses in the level of awareness of the IUD, injection and rhythm and abstinence. However, this may reflect a slight difference in methodology as interviewers for the Fertility Survey were instructed to read out fairly elaborate descriptions of various methods, while for practical reasons interviewers for the Husband's Survey mentioned only names of methods and were instructed to read out a short description only as a probe if the initial response was negative. The husband was slightly more likely to have heard of the two specifically 'male' methods, the condom and vasectomy.

Table 41. Per cent of women ever married who had heard of specific contraceptive methods.

## Method

Per cent

| Pill | 92 |
| :--- | :---: |
| Intra-uterine device (IUD) | 86 |
| Injection | 70 |
| Condom | 48 |
| Female sterilization | 87 |
| Male sterilization | 70 |
| Douche, rhythm, withdrawal or abstinence | 54 |
| Other female scientific methods | 22 |
| Other folk methods | x |

Source: Table 4.2.1A

Table 42. Der cent of women ever married who had not heard of any method of contraception, by selected background variables
Variable
Per cent

TOTAL 3.5

Residence:
1.1

Urban
4.0

Rural

Region of residence:
North 4.5
Northeast 3.2
South 9.4
Central 1/ 1.3
Bangkok Metropolis 0.7

Years of school completed:
None 10.4
1 to 4 years 2.2
5 to 10 years 0.5
11 years and over -

Source: Table 4.2.2
1/ Excluding Bangkok Metropolis

Table 43. Per cent distribution of husbands and wives by knowledge of specific contraceptive methods

| Method | Total | Had heard of method |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Neither | Wife only | Husband only | Both |
| Pill | 100 | 3 | 10 | 4 | 82 |
| Intra-uterine device (IUD) | 100 | 7 | 19 | 6 | 68 |
| Injection | 100 | 18 | 28 | 10 | 44 |
| Condom | 100 | 29 | 15 | 23 | 34 |
| Female sterilization | 100 | 5 | 12 | 7 | 76 |
| Male sterilization | 100 | 11 | 14 | 17 | 58 |
| Other female scientific methods | 100 | 34 | 31 | 11 | 23 |
| Rhythm and abstinence | 100 | 64 | 16 | 13 | 6 |
| Other methods | 100 | 99 | x | 1 | - |

Source: Table 6.2.1

### 4.8.2 Ever-use of contraception

(1) Ever-use of any method. As was expected, the proportion of women who had ever used any method of contraception was much lower than that of women professing knowledge of the methods. Fifiy-five per cent of women ever married had never used any method and another six per cent had used only an inefficient method of contraception. The association between age, family size and ever-use of contraception is shown in Table 44. The pattern is similar to that found in many other developing countries, with ever-use relatively low among the younger and older age groups and among women with very small and very large families. Women between the ages of 25 and 34 years with two to four children had the highest proportions of ever-users.
(2) Ever-use of specific methods. It can be seen from Table 45 that the pill has been the most widely used method of contraception. Over one-quarter of all women ever married had used this method, while nine per cent had used the IUD, six per cent had had tubal ligations, five per cent had had injections, four per cent
had used the condom and smaller percentages had used other methods. Further details are given in Table 4.3.1.
(3) Differentials in ever-use of contraceptive methods. These differentials are summarized in Table 46 and charted in Figure 6. There is a marked rural-urban gap that is particularly large for women under 25 years of age, suggesting that urban women are more likely to initiate contraception relatively early in life. Sixty-one per cent of urban women under 25 reported ever=use of contraception, only slightly below the 66 per cent in the 25 to 34 age group.

Differences according to the extent of formal education received by the women were also clearly apparent. In all age groups the minority of women with five or more years of schooling reported much greater experience with contraception than the less educated. The difference between those with no education and those with one to four years of schooling was minor for young women but was substantial among the older age groups, as can be seen in Table 4.3.2A. Even when the number of living children was controlled there was little difference in the 15 to 24 age group.

Table 44. Per cent of women ever married who had used any contraceptive method by age and number of living children

| Age group | Total | Number of living children |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | $9+$ |
| TOTAL | 45 | 16 | 41 | 50 | 54 | 55 | 48 | 45 | 44 | 46 | 30 |
| Under 25 | 38 | 16 | 42 | 48 | 52 | * | * | * | - | - | - |
| 25-34 | 56 | 22 | 49 | 60 | 62 | 59 | 55 | 48 | (57) | * | * |
| 35-44 | 47 | (6) | 20 | 37 | 46 | 59 | 52 | 52 | 52 | 50 | 38 |
| $45+$ | 25 | * | * | (17) | (24) | 34 | 23 | 26 | (13) | . 40 | 24 |

Source: Table 4.3.2

Table 45. Per cent of women ever married who had ever used a specific contraceptive method

## Method

## Per cent

Pill ..... 26
Intra-uterine device (IUD) ..... 9
Injection ..... 5
Condom ..... 4
Female sterilization ..... 6
Male sterilization ..... 2
Douche, rhythm, withdrawal or abstinence ..... 15
Other female scientific methods ..... 1
Other folk methods ..... x

Source: Table 4.3.1

Table 46. Per cent of women ever married who had ever used a contraceptive method by age, for selected background variables


[^19]1/ Excluding Bangkok Metropolis

Figure 6. Per cent of women ever married who had ever used a contraceptive method by age, by residence, region of residence and education.


For the group with one to four years of school, which constitutes 75 per cent of the sample, the considerable increase in the proportion of ever-users after the age of 25 may be associated with the possibility that the recent fertility decline is occurring in the later rather than in the earlier years of married life. It is possible that women with no formal education are not participating in this trend, but further analysis of the data is needed to confirm or invalidate the hypothesis.

Regional differences are apparent. In the South, ever-use was particularly low, as was the level of knowledge of contraception. The Northeast was characterized by lower than average figures for ever-use of any method. The increase in use after age 25 in the Northeast was similar to that in other regions 27 . However, the level of use after age 25 continued to be low in the South.
is not so high. Seventy-five per cent of the couples indicated an identical pattern of ever-use. It is clear therefore, that close aggregate similarity was only maintained by the fact that under-reporting by the husband was almost exactly counterbalanced by under-reporting by the wife. Close inspection of Table 47 reveals a low level of agreement concerning ever-use of inefficient methods. This is due in part the fact that wives but not husbands were questioned about withdrawal. In addition, designating abstinence as a contraceptive method is highly arbitrary and a low level of consistency was to be expected. In view of these considerations, it is justifiable to combine the 'none ever used' and the 'used only inefficient method' cells. When re-computed on this basis, the level of consistency between individual husbands and wives rises from 75 to 82 per cent.

Another way of viewing the data in Table 47 is to

Table 47. Number of husbands and wives reporting use of contraception

| Reported by husband | Total | Reported by wife |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | None ever used | Only inefficient method(s) used | Efficìent method(s) used |
| TOTAL | 2,352 | 1,202 | 141 | 1,009 |
| None ever used | 1,185 | 929 | 92 | 164 |
| Only inefficient method(s) used | 100 | 68 | 17 | 15 |
| Efficient method(s) used | 1,067 | 205 | 32 | 830 |

Source: Table 6.2.2B
(4) Comparison of husband's and wife's reporting of ever-use. This comparison is limited to the responses of 2,352 matched couples with both spouses married only once. This was done to eliminate possible references to ever-use in previous marriages and, though it was still possible for a spouse to report use with a premarital or extramarital partner, reporting of use other than in the current marriage is believed to be negligible.

The summary data are shown in Table 47. It can be seen that 1,067 or 45 per cent of the husbands reported ever-use of an efficient method, compared to 1,009 or 43 per cent of the wives. An additional 100 or 4 per cent of the husbands, compared to 141 or 6 per cent of the wives, reported use of an inefficient method only. Such close correspondence in the aggregate levels of reporting contraceptive use is remarkable and serves to enhance confidence in the data.

Consistency between individual husbands and wives

[^20]assume that there has been no false over-reporting of methods and to re-estimate the level of ever-use on that basis. In a total of 1,246 couples, either the husband, the wife or both reported ever-use of an efficient method and this represents 53 per cent of all couples. This implies that the true level of ever-use may be about ten per cent higher than the estimates based on the testimony of wives only or husbands only. This figure of ten per cent under-reporting can only serve as a crude approximation. To the extent that false over reporting has taken place, it is too high; conversely, to the extent that both husband and wife forgot or deliberately concealed use, the figure is too low. The conclusion that these two possible sources of error cancel out each other is tempting but unjustifiable.

It is also appropriate to apply this mode of analysing the data to the comparison of husband's and wife's reporting of ever-use of particular methods. The percentages in Table 48 for the more important methods are not immediately comprehensible because of the generally low levels of reported use. But if the number of cases where the wife alone (or both husband and wife)

The association between current use and economic variables is examined in Table 54. The index of standard of living suggests that a high standard of living was associated with a higher rate of current use. In the rural sector the difference between low and medium categories was minor, while in the urban sector the small number of respondents precludes more detailed analysis. The association between family income and current use is evident and reporting of use was generally consistent in relation to family size. On the other hand, size of family enterprise appears unrelated to current contraceptive use.
(4) Current use and sex of living children. In Section 4.6 .3 the possible influence of the sex of living children on willingness to limit family size was examined. The tentative conclusion reached, namely that preference for sons existed but was not sufficiently strong to affect attitudes toward family limitation, is supported by a consideration of sex composition of the family and current contraceptive use. Table 55 displays no consistent association between the number of sons at any specific family size and the proportion of women who were current users of contraception.

Table 51. Per cent distribution of currently married non-pregnant women by current contraceptive status and current use of a specific contraceptive method.

## Status and method

Infecund ..... 18.7
Fecund and not using contraception ..... 44.2
Fecund and using contraception ..... 37.1
Pill ..... 15.3
Intra-uterine device (IUD) ..... 6.6
Injection ..... 2.1
Condom ..... 0.5
Female sterilization ..... 6.8
Male sterilization ..... 2.4
Douche, rhythm, withdrawal or abstinence ..... 2.8
Other female scientific methods ..... 0.1
Other folk methods ..... 0.5

Source: Table 4.4.1

Table 52. Per cent distribution of current users of contraception by specific method used, by number of living children

| Method | Total | Number of living children |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0-2 | 3 | 4 | $5+$ |
| TOTAL | 100 | 100 | 100 | 100 | 100 |
| Pill | 41 | 55 | 35 | 28 | 35 |
| Intra-uterine device (IUD) | 18 | 14 | 22 | 18 | 19 |
| Injection | 6 | 8 | 3 | 5 | 5 |
| Condom | 1 | 2 | x | 2 | 1 |
| Female sterilization | 18 | 6 | 20 | 28 | 28 |
| Male sterilization | 6 | 4 | 12 | 11 | 3 |
| Douche, rhythm, withdrawal or abstinence | 8 | 8 | 5 | 8 | 8 |
| Other female scientific methods | x | x | - | 1 | - |
| Other folk methods | 1 | 2 | 2 | - | 1 |

Table 53. Per cent of curnently married non-pregnant women currenty usimg any contraceptive method, including sterilization, by number of living children, for selected background variabies

| Variable | Total | Number of living children |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | $7 \%$ |
| TOTAL | 37 | 9 | 36 | 42 | 45 | 48 | 39 | 33 | 27 |
| Residence: |  |  |  |  |  |  |  |  |  |
| Urban | 49 | (12) | (49) | 52 | 51 | 49 | (61) | * | (53) |
| Rural | 35 | 8 | 33 | 40 | 44 | 47 | 36 | 81 | 25 |
| Region of Residence: |  |  |  |  |  |  |  |  |  |
| North | 44 | 7 | 53 | 52 | 60 | 44 | 42 | (40) | 23 |
| Northeast | 30 | 5 | 19 | 31 | 34 | 46 | 37 | 27 | 26 |
| South | 18 | 4 | (19) | 8 | 22 | 32 | (24) | (23) | (8) |
| Central $1 /$ | 45 | (17) | 36 | 52 | 56 | 60 | 43 | 41 | 37 |
| Bangkok Metropolis | 50 | (13) | (60) | 53 | (52) | (47) | (56) | * | * |
| Years of school completed: |  |  |  |  |  |  |  |  |  |
| None | 27 | (7) | 21 | 41 | 30 | 39 | 27 | 19 | 20 |
| 1 to 4 years | 38 | 7 | 35 | 42 | 47 | 49 | 43 | 39 | 30 |
| 5 to 10 years | 43 | (17) | (43) | (44) | * | * | * | * | + |
| 11 years and over | 53 | * | (70) | (38) | * | * | * | * | * |

Source:
Table 4.4.2D.I
1/ Excluding Bangkok Metropolis

Table 54. Per cent of cuxcenty married non-pregnant women in matched couples currently using any contraceptive method, including stexilization, by number of living children, for selected background variables

| Vaxiable | Total | Number of living children |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 3 | 4 | 5 | 6 | $7+$ |
| TOTAL | 37 | 10 | 37 | 41 | 45 | 47 | 39 | 34 | 27 |
| Standard of living: Non-municipal |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Low | 27 | (4) | 25 | 36 | 26 | 38 | 23 | 22 | 22 |
| Medium | 30 | (2) | 25 | 34 | 44 | 38 | 32 | 29 | 20 |
| High | 46 | 17 | 45 | 46 | 56 | 62 | 53 | 41 | 33 |
| Municipal |  |  |  |  |  |  |  |  |  |
| Low | 36 | * | * | * ${ }^{*}$ | 46 | * | * | * | * |
| Medium | 59 | * | (62) | (57) | * | * | * | * | * |
| High | 50 | * | (46) | (47) | * | (58) | * | * | * |
| Family Income: |  |  |  |  |  |  |  |  |  |
| Level 1 (lowest) | 28 | 0) | 24 | 32 | 34 | 35 | 30 | (27) | 18 |
| Level 2 | 34 | (7) | 35 | 42 | 40 | 32 | 33 | (35) | 26 |
| Level 3 | 37 | (8) | 37 | 36 | 43 | 54 | 47 | (35) | 23 |
| Level 4 | 42 | (10) | 41 | 46 | 52 | 54 | 47 | (30) | 28 |
| Level 5 (highest) | 45 | (12) | 44 | 48 | 61 | 57 | (43) | 42 | 39 |
| Size of family enterprise: |  |  |  |  |  |  |  |  |  |
| None $1 /$ | 47 | (15) | 45 | 50 | 51 | 51 | 56 | (59) | 44 |
| Level 1 (smallest) | 37 | (4) | 33 | 49 | 45 | 51 | 36 | 27 | 23 |
| Level 2 | 35 | * | 38 | 36 | 45 | 38 | 31 | (31) | 28 |
| Level 3 | 33 | * | (53) | (26) | 43 | 26 | 34 | (26) | 28 |
| Level 4 | 32 | * | (17) | 35 | (38) | (56) | (40) | (31) | 25 |
| Level 5 (largest) | 34 | (7) | 23 | 35 | 46 | 53 | (42) | (39) | (20) |

Source: Table 4.4.2D-I
1/ No family enterprise or residing in municipal area

Table 55. Per cent of currently married non-pregnant women currently using any contraceptive method, including sterilization, by number of living sons and number of living children

| Number of living sons | Total | Number of living children |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 | 3 | 4 | 5 |
| TOTAL | 37 | 9 | 36 | 42 | 45 | 48 | 39 |
| 0 | 29 | 9 | 36 | 39 | 40 | * | * |
| 1 | 39 | .. | 36 | 42 | 42 | 43 | 33 |
| 2 | 44 | . | .. | 43 | 48 | 52 | 41 |
| 3 | 39 | .. | .. | . | 47 | 44 | 37 |
| 4 | 35 | .. | .. | . | .. | (46) | 40 |
| 5 | 29 | .. | . | . | .. | .. | (47) |

Source: Table 4.4.2B

### 4.8.4 Length of the open interval and contraceptive use

Measurement of the effects of contraception on the timing and number of births experienced by a couple requires a wealth of data well beyond the scope of this Survey. However, in a limited way the relationship has been examined by comparing the length of the open interval according to contraceptive behavior for 1,707 currently married non-sterilized and non-pregnant women who had had a live birth in the last five years.

As shown in Table 56, there is a large difference in the mean length of the open interval between those who used or were still using a contraceptive method in the open interval and those who did not. Moreover this difference persisted for all age gorups except those aged over 44, which implies that divergent fecundity between users and non-users was unlikely to account for the longer open intervals recorded for users. This preliminary tabulation suggests strongly that contraception is being practised by Thai couples with sufficient efficiency to have a marked effect on birth intervals and thus on completed fertility.

### 4.8.5 Patterns of contraceptive use

A composite variable, patterns of contraceptive use, is used here to summarize the contraceptive experience of SOFT respondents. Seven categories of this variable are
defined in Section 3.3.2. In Table 57 these have been combined into three major groups, never users, past users and current users, with the seven categories included, Most of these data have already been commented upon and are brought together here to provide an overall view.

The top row of Table 57 shows that 55 per cent of the women ever married had never used a contraceptive method, 31 per cent were current users and the remainder were past but not current users. The small proportion in the last group probably results from the recency of the spread of family planning in Thailand.

The relative importance of sterilization compared to other contraceptive methods can be seen clearly. Among women under 30 years of age sterilization played a minor role, but among those aged 30 or more the operation accounted for one-third of current users. Thus this method of family limitation emerges as an important ingredient of the family planning programme.

Table 57 gives a misleading picture of future intentions about contraception because fecund women who report lack of intention have been combined with never-users who are no longer fecund or no longer married. However, from Table 4.5.4, where pattern of contraceptive use is cross-tabulated by exposure status, intentions of fecund never users can be isolated and the relevant figures are shown below.

Table 56. Mean length in months of open interval of currently married non-pregnant and non-sterilized women who have had a live birth in the last five years, by contraceptive status in the open interval and by age

| Contraceptive status | Total |  | Age group |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under | 25 | 25-34 | 35-44 | 45-49 |
| TOTAL | 28.2 |  | 16.0 | 27.7 | 34.8 | 46.6 |
| Ever used in open interval | 32.9 |  | 21.4 | 33.0 | 39.1 | 43.2 |
| Currently using | 35.0 |  | 22.5 | 35.7 | 42.2 | 45.2 |
| Used earlier but not currently | 26.3 |  | 16.3 | 24.8 | 30.8 | 39.8 |
| Never used in open interval | 23.1 |  | 11.1 | 20.4 | 30.3 | 48.5 |

Source: Table 4.6.1

Table 57. Per cent distribution of women ever married by age and number of living children, by status of contraceptive use

| Age group and number of living children | Total | Never used |  |  | Past but not current use |  |  |  | Current vuse |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Intend future use |  | Total | In open interval | In earlier closed interval | No longer fecund | Total | Sterilized | Other methods |
|  |  |  | Yes | Nol ${ }^{1 /}$ |  |  |  |  |  |  |  |
| TOTAL | 100 | 55 | 19 | 36 | 15 | 4 | 8 | 3 | 31 | 8 | 23 |
| Age group: |  |  |  |  |  |  |  |  |  |  |  |
| Under 20 | 100 | 74 | 43 | 31 | 10 | 2 | 8 | - | 16 | - | 16 |
| 20-24 | 100 | 58 | 35 | 28 | 13 | 3 | 9 | 1 | 29 | 2 | 27 |
| 25-29 | 100 | 44 | 24 | 20 | 17 | 5 | 11 | 1 | 39 | 8 | 31 |
| 30-34 | 100 | 44 | 17 | 27 | 17 | 5 | 10 | 2 | 39 | 10 | 29 |
| 35-39 | 100 | 46 | 15 | 32 | 16 | 6 | 8 | 2 | 38 | 14 | 24 |
| 40-44 | 100 | 61 | 6 | 54 | 13 | 3 | 6. | 4 | 26 | 10 | 16 |
| 45-49 | 100 | 75 | 2 | 73 | 13 | 2 | 2 | 9 | 12 | 6 | 6 |
| Number of living children: |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 100 | 84 | 36 | 48 | 11 | - | 10 | 1 | 5 | 1 | 5 |
| 1 | 100 | 59 | 26 | 38 | 14 | 5 | 9 | x | 27 | 1 | 27 |
| 2 | 100 | 50 | 21 | 29 | 15 | 6 | 7 | 3 | 35 | 6 | 29 |
| 3 | 100 | 46 | 15 | 31 | 15 | 4 | 8 | 2 | 89 | 18 | 26 |
| 4 | 100 | 44 | 16 | 29 | 16 | 5 | 8 | 3 | 40 | 16 | 24 |
| 5 | 100 | 52 | 11 | 40 | 14 | 8 | 9 | 2 | 54 | 14 | 21 |
| 6 | 100 | 54 | 14 | 40 | 17 | 4 | 7 | 6 | 29 | 10 | 20 |
| 7 | 100 | 56 | 14 | 42 | 14 | 4 | 6 | 4 | 30 | 5 | 24 |
| 8 | 100 | 54 | 7 | 47 | 23 | 6 | 10 | 7 | 24 | 8 | 15 |
| $9+$ | 100 | 69 | 15 | 54 | 13 | 3 | 6 | 4 | 18 | 4 | 14 |

Source: Tables 4.5.1A, 4.5.1C
1/ Includes women ever married who are no longer fecund or no longer married and do not need contraception

| Age <br> group | Per cent of ne ne <br> who intend |
| :--- | :---: |
| Total |  |
|  | 53 |
| Under 25 |  |
| $25-34$ | 65 |
| $35-44$ | 58 |
| $45-49$ | 36 |
|  | 17 |

Slightly more than half of all fecund currently married women who had never used any contraceptive method stated an intention to use one in the future. This figure should be regarded with extreme caution, for future behavior is always highly unpredictable, but the data suggest that the readiness to accept family planning shows a definite decline with increasing age.

Table 4.5.5 presents detail on the pattern of contraceptive use for selected background variables. Of special note is the extent to which the rural-urban differential in current use is associated with the higher prevalence of sterilization in urban areas, especially among older age groups. There is also a sharp difference in the proportions sterilized in the Central Region and Bangkok Metropolis and those in other regions which may reflect in part a difference in ease of accessibility of medical facilities for sterilization.

### 4.8.6 Breast-feeding in the last closed birth interval

The subject of breast-feeding is relevant to a study of fertility, first, because lactation delays the resumption of ovulation after child-birth and thus may influence the length of birth intervals; and second, because it may be strongly associated with infant survivorship, which is itself an important factor both with respect to rates of natural increase and to the overall set of circumstances that shape fertility attitudes and behavior. Only the first of these topics is discussed, as the study of the relation between lactation and infant mortality must await further analysis of the data.

It is difficult to obtain accurate and unbiased data on lactation through a cross-sectional survey. If information relating to the last birth is used there are severe problems of curtailment by the intervention of the interview. For this reason the next-to-last birth has been used in the SOFT tabulations. The data are derived from the responses of women ever married with two or more live births or one birth and a current pregnancy. Through this procedure the problem of recall lapse is intensified, as women cannot be expected to remember with any degree of precision the duration of breast-feeding a child born a number of years before. The difficulty of recall is suggested by the fact that half of the women reported the time span to the nearest year rather than to the nearest month, as reported in Section 2.9.2. To the extent that responses may have been adjusted to accord
with traditional norms there is a further possibility of error, and the findings should be approached with caution.

While the use of data relating to the next-to-last birth rather than the most Iecent bith solves one major source of truncation, comparison between classes of the sample can be further improved by excluding women whose last-but-one child died before the age of 24 months and women whose last closed interval was shorter than 33 months. The choice of 33 months as a cut-off point reflects the fact that lactation and pregnancy are usually incompatible and therefore any women with an interval of less than 33 months between births had not been fully exposed to the possibility of breast-feeding for at least two years. $\frac{28}{6}$ The key findings, shown in Table 58, are thus based of 1,265 women who possessed the following characteristics:
(1) they had experienced at least two live births or were currently pregnant with their second child;
(2) their last closed birth interval was 33 months or longer;
(3) the relevant child survived for 2 years or more.

It is clear that prolonged breast-feeding is common in Thailand. Over half of the women had breast-fed for two years or more and a further third had breast-fed for one to two years. The data for different age and parity groups reveal a slight positive association, but any historical trend or life-cycle changes are very slight.

In contrast, differentials for demographic and socio-economic variables are evident. Breast-feeding was much less common among the small number of women with five or more years of schooling and, if practised at all, tended to be relatively short. There was little difference between those with no education and those with one to four years of school.

The rural-urban differential is also marked. Twen-ty-three per cent of urban respondents did not breast-feed and only 17 per cent reported a duration of 24 months or more; the corresponding figures for the rural sector were 4 per cent and 56 per cent. Regional variations are also apparent. Prolonged lactation appeared to be more common in the Northeast, where 76 per cent reported duration of 24 months or more. A different pattern emerges in the North where breast-feeding for one year is more prevalent than in any other region.

28/ Because short durations of breast-feeding tend to be associated with short birth intervals (though the causality may go in either direction), the exclusion of women with intervals of less than 33 months also implies the disproportionate exclusion of women with short durations. Generalization to the whole sample on the basis of Table 58 is therefore hazardous. However, it is unlikely that differentials have been seriously distorted.

Table 58. Fer cem distrinution of women ever marich by duration of breastofeeding during the last closed birth interval, for selected background variables $1 /$

| Variable | Total | Did not breast-feed | Duration of breast-feeding (im months) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1-6 | $7-11$ | 12-17 | 18-23 | 24. |
| TOTAL | 100 | 6 | 5 | 5 | 24 | 9 | 51 |
| Current age: |  |  |  |  |  |  |  |
| Under 25 | 100 | 9 | 6 | 9 | 23 | 4 | 49 |
| 25-94 | 100 | 6 | 7 | 5 | 26 | 8 | 49 |
| 35-44 | 100 | 6 | 5 | 5 | 25 | 9 | 50 |
| 45-49 | 100 | 6 | 3 | 4 | 21 | 10 | 57 |
| Number of children ever born: |  |  |  |  |  |  |  |
| 2 | 100 | 9 | 7 | 8 | 20 | 6 | 49 |
| 3 | 100 | 7 | 8 | 5 | 27 | 8 | 46 |
| 4 | 100 | 9 | 4 | 4 | 25 | 9 | 49 |
| $5+$ | 100 | 4 | 4 | 5 | 25 | 10 | 54 |
| Residence: |  |  |  |  |  |  |  |
| Urban | 100 | 23 | 15 | 7 | 26 | 12 | 17 |
| Rural | 100 | 4 | 4 | 4 | 24 | 8 | 56 |
| Region of residence: |  |  |  |  |  |  |  |
| North | 100 | 4 | 3 | 11 | 46 | 6 | 29 |
| Northeast | 100 | 1 | 3 | 3 | 12 | 6 | 76 |
| South | 100 | 10 | 6 | 4 | 17 | 8 | 54 |
| Central ${ }^{\text {/ }}$ | 100 | 6 | 6 | 1 | 27 | 14 | 45 |
| Bangkok Metropolis | 100 | 30 | 20 | 8 | 23 | 9 | 10 |
| Years of school completed: |  |  |  |  |  |  |  |
| None | 100 | 6 | 4 | 4 | 26 | 5 | 55 |
| 1 to 4 years | 100 | 4 | 5 | 5 | 24 | 10 | 53 |
| 5 to 10 years | 100 | 24 | 19 | 11 | 30 | 9 | 7 |
| 11 years and over | 100 | (64) | (14) | (9) | (5) | - | (9) |

Source: Tables 4.1.1, 4.1.3A, C, D.
1 Including only women with at least two live births or one live birth and currently pregnant whose last closed interval exceeded 32 months and whose last child survived at least 24 months.
2/ Excluding Bangkok Metropolis

The wider implications of these data are two-fold. First, as social innovations often spread from the urban, educated minority to the bulk of the population, there is a possibility that breast-feeding may decline in popularity and in duration in future years. Second, it is probable that the prolonged lactation undertaken by the majority of Thai women, the rural and the less well educated, has had a significant effect on the level of fertility. Conversely the higher rate of fertility in early marriage experienced by well educated women may be associated with their relatively short breast-feeding durations.

The effect of lactation on fertility is examined in Table 59, which relates length of lactation to the mean length of the interval for different age groups. In this table the minimum cut-off point of 33 months has been dropped and instead women with very long intervals of 5 years or more have been excluded. A positive association between the two variables can be observed but it is not pronounced, suggesting the tentative conclusion that the higher level of contraceptive practice among those with short durations of breast-feeding, namely the highly educated and urban women, tends to compensate for the loss of the contraceptive effect of breast-feeding.

### 4.9 CONTRACEPTIVE PRACTICE RELATED TO FERTILITY PREFERENCES.

The previous two Sections have examined family size preferences and contraceptive behavior. In this

Section these two topics are examined in conjunction. The focus of attention is on the consistency between reported attitude and behavior, and in particular on the extent to which women who state that they want no more children protect themselves by contraception.

In all societies including those where contraceptive practice has been widespread for many decades there is a considerable discordance between fertility attitudes expressed and behavior. There are many reasons for this. One of the most important may be a failure by the respondent to understand fully the question on whether she wants another child; some doubt has already been cast on this aspect of the SOFT/WFS data. Even if the question were properly understood, the desire to limit family size may be so weak or ambivalent that it has little effect on overt behavior, especially when actions involve effort and initiative. There are also many other factors that may keep a woman who wishes to avoid future births from contracepting. To mention but a few, her husband may object; facilities may be too remote; fear of side-effects may deter; lack of supportive social norms may weaken resolve; a fatalistic view of life may encourage inertia.

Investigation of these possible reasons for apparent inconsistency between reported attitudes and behavior lies beyond the scope of this Survey, but it is of interest to contrast the behavior of those who want and those who do not want more children and to describe the levels of inconsistency.

Table 59. Mean length in months of the last closed birth interval of women ever married by age, by duration of breast-feeding in that interval $1 /$

| Variable | Total | Did not breastfeed | Duration of breast-feeding (in months) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1-6 | 7-11 | 12-17 | 18-23 | $24+$ |
| TOTAL | 30.0 | 25.8 | 26.0 | 25.9 | 28.7 | 29.0 | 34.6 |
| Under 25 | 25.7 | 23.0 | (22.3) | (22.6) | 25.4 | (24.4) | 31.8 |
| 25-34 | 29.9 | 25.4 | 27.6 | 25.5 | 28.4 | 28.7 | 34.9 |
| 35-44 | 30.3 | 25.2 | 25.0 | 27.6 | 29.6 | 30.3 | 34.2 |
| $45+$ | 33.2 | 31.4 | * | * | 32.0 | (31.6) | 36.3 |

[^21]
### 4.9.1 Comparison of contraceptive behavior of women with different fertility preferences

Table 60 shows current contraceptive practice of
women according to reported desire for another child. It should be noted that the table is confined to the 2,243 women who were exposed to the risk of conception at the time of the Survey and therefore excludes those who had
been sterilized. 29./ This exclusion reduces the usefulness of the data because sterilization is an important method of family limitation among older, higher parity women, and women who have undergone this operation have demonstrated in a most emphatic manner both their desire to have no more children and their resolve to translate this desire into effective action. Thus the overall level of consistency between attitude and behavior has been somewhat lessened by their omission.

This feature of the data partially accounts for the rather weak association evident in Table 60. Though nearly three-quarters of women wanting another child were not currently using any method, the proportion fell to just over half for those undecided about another child or not wanting another. The detail on differing family size does not clarify the situation. Among women wanting to stop child-bearing, the proportion of non-users rose slightly as family size increased. It appears that attitudes and behavior are not more consistent among those with larger families. Table 60 does not support the view that the reported desire of Thai women with less than three children to limit family size is less strongly
held than the desire of women with more children. Another somewhat unexpecied feature of the data was the almost equal popularity of inefficient methods among the two groups.

In Table 61 another approach is illustrated. In this table, based on responses of 2,618 currently married fecund women, the pattern of contraceptive use is contrasted with whether the desired family size had already been achieved. The most interesting feature is that women who reported that they had already exceeded the desired size had markedly lower levels of current use than those whose desired and achieved sizes were the same. This pattern holds true across the age groups. While the level of current use was highest in all age groups for women whose desired and achieved family sizes were the same, a similar differential between those who have exceeded and those who have not reached their desired, sizes was not maintained consistently when current age was taken into account. Thus for the age group 25 to 34 , the latter category had a marginally higher level of practice, while in the age group 35 to 44 it had a substantially lower level.

29/ Also excluded are women who are not currently married, not fecund, or are currently pregnant.

Table 60. Per cent distribution of currently married women exposed to the risk of conception by current status of contraceptive use, by number of living children and desire for another child

| Number of <br> living children <br> and desire for <br> future birth | Total | Current use of contraceptive method |
| :--- | :---: | :---: | :---: |

[^22]Table 61. Per cent distibution of curventy garried fecund women by age and relation of deaped to achieved family size, by status of contraceptive use.

| Age group and relative family size | Total | Status of contraceptive use |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Never used |  |  | Past but not current use | Current use |
|  |  | Total | Intend future use |  |  |  |
|  |  |  | Yes | No |  |  |
| 15 to 49 years |  |  |  |  |  |  |
| Total | 100 | 52 | 27 | 24 | 16 | 33 |
| Desired smaller than achieved | 100 | 43 | 21 | 22 | 22 | 35 |
| Desired equal to achieved | 100 | 45 | 26 | 19 | 15 | 40 |
| Desired larger than achieved | 100 | 58 | 31 | 27 | 14 | 28 |
| Under 25 years |  |  |  |  |  |  |
| Total | 100 | 62 | 41 | 21 | 12 | 27 |
| Desired smaller than achieved | 100 | * | * | * | * | * |
| Desired equal to achieved | 100 | 56 | 46 | 10 | 17 | 27 |
| Desired larger than achieved | 100 | 64 | 41 | 23 | 11 | 25 |
| 25 to 34 years |  |  |  |  |  |  |
| Total | 100 | 45 | 26 | 19 | 18 | 37 |
| Desired smaller than achieved | 100 | 42 | 28 | 14 | 26 | 32 |
| Desired equal to achieved | 100 | 40 | 27 | 13 | 18 | 43 |
| Desired larger than achieved | 100 | 49 | 26 | 24 | 17 | 34 |
| 35 to 44 years |  |  |  |  |  |  |
| Total | 100 | 50 | 18 | 32 | 17 | 34 |
| Desired smaller than achieved | 100 | 43 | 20 | 23 | 20 | 37 |
| Desired equal to achieved | 100 | 47 | 15 | 32 | 11 | 41 |
| Desired larger than achieved | 100 | 64 | 18 | 46 | 17 | 19 |
| 45 to 49 years |  |  |  |  |  |  |
| Total | 100 | 59 | 10 | 49 | 15 | 26 |
| Desired smaller than achieved | 100 | 53 | 14 | 40 | 22 | 24 |
| Desired equal to achieved | 100 | (52) | (10) | (43) | (5) | (43) |
| Desired larger than achieved | 100 | * | * | * | * | * |

Source: Table 5.3.2

The difference in current use between those who had reached but not exceeded and those who had already exceeded desired size does not extend to ever-use; 55 pe- ceni of the former group compared to 57 per cent of the latter had used a method at some time in their lives. Perhaps, the 'surplus' fertility of the latter group resulted more from failure to persist in effective use rather than from any reluctance to try contraceptive methods.

### 4.9.2 Differentials in current use among women who want no more children

The examination of differentials in the degree of inconsistency between fertility preferences and contracep-
tive behavior is based on responses of the 1,096 women who were exposed to the risk of conception and said they wanted no more children. As before, sterilized women were exclude 1 and the effect of this exclusion on the pattern of results should be kept in mind.

The relevant data are displayed in Table 62. There is a large rural-urban difference, which is consistent with the view already expressed that rural women perhaps had a greater propensity to misunderstand the question on desire for more children. No doubt other factors such as differential availability of contraceptive supplies and advice also played a part. Regional differences are marked; inconsistency was very high in the South, high in the Northeast, moderate in the Cental Region and low in the North and in Bangkok Metropolis.

Family income and consistency were moderately associated in the expected direction, but there was no clear-cut difference between women with no education
and those with one to four years of schooling. Finally, the preference of the husband for a future birth did not show a pronounced association with current use.

Table 62. Per cent of curenty married women exposed to the risk of conception and not wanting more children who are not currently using an efficient contraceptive method by age, for selected background variables

| Variable | Total | Age group |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under 25 | 25-34 | 35-44 | 45-49 |
| TOTAL | 59 | 59 | 53 | 62 | 8 I |
| Residence: |  |  |  |  |  |
| Urban | 46 | * | (35) | 55 | * |
| Rural | 61 | 61 | 55 | 63 | 83 |
| Region of residence: |  |  |  |  |  |
| North | 48 | (40) | 40 | 54 | (79) |
| Northeast | 66 | 76 | 61 | 66 | (86) |
| South | 85 | * | (82) | 86 | * |
| Central ${ }^{1 /}$ | 55 | (59) | 48 | 55 | (81) |
| Bangkok Metropolis | 42 | * | (36) | (50) | * |
| Years of school completed: |  |  |  |  |  |
| None | 65 | (50) | 65 | 63 | (87) |
| 1 to 4 years | 58 | 59 | 51 | 62 | 77 |
| 5 to 10 years | (67) | * | * | * | * |
| 11 years and over | * | * | * | * | - |
| Family income: ${ }^{2 /}$ |  |  |  |  |  |
| Level 1 (lowest) | 69 | (79) | 65 | 71 | * |
| Level 2 | 62 | (66) | 58 | 62 | * |
| Level 3 | 57 | (52) | 51 | 58 | * |
| Level 4 | 52 | * | 42 | 57 | * |
| Level 5 (highest) | 57 | * | 43 | 59 | (86) |
| Future birth wanted by husband: |  |  |  |  |  |
| Yes | 63 | 64 | 55 | (76) | * |
| No | 58 | 52 | 54 | 59 | 82 |
| Undecided | * | * | * | * | * |

Source: Table 5.2.2C, D, E, G

1/ Excluding Bangkok Metropolis
2/ Currently married women in matched couples

## APPENDHKI.

## SAMPLR DESIGN AND SELRGTHON, AND SAMPLTNG ERRORS

## A. 1 OUTLINR OT TCI DESIGN

The SOFT/WFS sample was organised as a subsample of Round III of the Survey of Population Change (SPC), a multiround household survey in progress.

The outline of the sample is as follows:
First Stage: The 71 Changwat (provinces) in the Whole Kingdom were arranged into 5 Regions which were subdivided into 11 Strata, and a sample of 35 Changwat was selected. One area, Bangkok Metropolis, was self representing and the other 34 areas were selected from 10 strata independently, with probability proportional to size, defined as the number of households in Changwat from the 1970 Census.

Next, each sample Changwat was divided into 2 sub-strata: rural and urban. Selection of units in the
next stage was done systematically within a substratum, but independently between sub-strata.

Second stage, Urban: Census blocks were selected with probability inversely proportional to the Changwat probability, giving overall equal probability.

Second and Third stage, Rural: Amphoe (districts) were selected with probability inversely proportional to the Changwat probability, and directly proportional to the number of villages in the sample. Finally, a constant number (3) of villages was selected from a sample amphoe.

This gave a sample of 340 Uitimate Area Units for the SPC. All households in a selected area were taken, giving about 30,000 sample households for the SPC. The sample was distributed as follows:

|  | Bangkok |  | Other 34 Changwats |  | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Rural | Urban | Rural | Urban |  |
|  |  |  |  |  |  |
| No. of UAUs (SPC) | 15 | 43 | 234 | 48 | 340 |
| Sampling fraction (SPC) | $1 / 50$ | $1 / 60$ | $1 / 200$ | $1 / 60$ | - |
| No. of UAUs in SOFT | 4 | 14 | 234 | 15 | 267 |

The SOFT sample was selected so as to give an overall sampling fraction $1 / 200$ for the UAUs. At the final stage, households were selected with interval equal to 6.8 from the SPC lists, resulting in about 4,500 households (17 households per cluster on the average), expected to yield 4,000 women eligible for the fertility interview and about 3,500 men eligible for the husband's interview.

The SOFT sample is self weighting except for the effect of rounding of the number of area units to be selected to the nearest integer. This rounding introduced weights which, though not large, were not negligible.

## A. 2 DETAILS OF SAMPLE SELECTION

## A.2.1 Selection of Changwat (PSUs)

Within each stratum, s, any Changwat, i, was selected systematically (independently within stratum) with probability, $\mathrm{P}_{\mathrm{i}}$, given by

$$
\begin{equation*}
\mathrm{P}_{\mathrm{i}}=\mathrm{a}_{\mathrm{s}} \frac{\mathrm{H}_{\mathrm{i}}}{\sum \sum_{\mathrm{s}} \mathrm{H}_{\mathrm{i}}} \tag{1}
\end{equation*}
$$

where $a_{s}$ is the number of Changwat selected from stratum s ,*
$\mathrm{H}_{\mathrm{i}}$ is the number of 1970 Census households in the Changwat, and
$\sum_{\mathrm{s}}$ is the sum over the whole stratum, s .
For three Changwat (two in the upper North, and one in the upper South), $\mathrm{P}_{\mathrm{i}}$, according to (1) turned out to be greater than 1.0. The values of $\mathrm{P}_{\mathrm{i}}$ shown in Table 1 were computed with the following assumptions:

[^23]Table Al Selection of area units (For definition of column headings, see end of table)

| Region | Stratum | Changwat (Province) | Code | Probability of selection ( $\mathbb{P}_{\mathbf{i}}$ ) | Urban |  |  | Rural |  |  |  | No. of households in SOFT |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $\mathbf{B}_{\mathbf{i}}$ | $\mathrm{b}_{\mathbf{i}}$ | $\mathbf{c}_{\mathbf{i}}$ | $\mathrm{M}_{\mathbf{i}}$ | $\mathrm{n}_{\mathrm{i}}^{\prime}$ | $\mathrm{n}_{\mathbf{i}}$ | Weight $=\mathrm{n}_{\mathrm{i}} / \mathrm{n}_{\mathrm{i}}$ | Rural | Urban |
| North | Upper | Chieng Mai <br> Chieng Rai <br> Lampun <br> Lampang | $\begin{aligned} & 11 \\ & 12 \\ & 13 \\ & 14 \end{aligned}$ | $\begin{aligned} & 1 . \\ & 1 . \\ & 0.324852 \\ & 0.599075 \end{aligned}$ | $\begin{array}{r} 135 \\ 58 \\ 24 \\ 65 \end{array}$ | $\begin{aligned} & 2 \\ & 1 \\ & 1 \\ & 2 \end{aligned}$ | $\begin{aligned} & 1 \\ & - \\ & 1 \end{aligned}$ | $\begin{array}{r} 1,351 \\ 1,363 \\ 335 \\ 576 \end{array}$ | $\begin{aligned} & 2.251 \\ & 2.271 \\ & 1.718 \\ & 1.602 \end{aligned}$ | $\begin{aligned} & 2 \\ & 2 \\ & 2 \\ & 2 \end{aligned}$ | $\begin{aligned} & 1.1255 \\ & 1.1355 \\ & 0.8590 \\ & 0.8010 \end{aligned}$ | 652 | 54 |
|  | Lower | Sukhothai <br> Kampraeng Phet Nakhon Sawan Phetchabun | $\begin{aligned} & 21 \\ & 22 \\ & 23 \\ & 24 \end{aligned}$ | $\begin{aligned} & 0.445386 \\ & 0.349644 \\ & 0.824572 \\ & 0.666666 \end{aligned}$ | $\begin{aligned} & 41 \\ & 22 \\ & 89 \\ & 34 \end{aligned}$ | $\begin{aligned} & 1 \\ & 1 \\ & 2 \\ & 1 \end{aligned}$ | $\begin{aligned} & - \\ & 1 \end{aligned}$ | $\begin{aligned} & 491 \\ & 392 \\ & 981 \\ & 699 \end{aligned}$ | $\begin{aligned} & 1.837 \\ & 1.868 \\ & 1.982 \\ & 2.093 \end{aligned}$ | $\begin{aligned} & 2 \\ & 2 \\ & 2 \\ & 2 \end{aligned}$ | $\begin{aligned} & 0.9185 \\ & 0.9430 \\ & 0.9910 \\ & 1.0465 \end{aligned}$ | 361 | 29 |
| Northeast | Upper | Khon Kaen <br> Udon Thani Sakon Nakhon Maha Sarakham | $\begin{aligned} & 31 \\ & 32 \\ & 33 \\ & 34 \end{aligned}$ | $\begin{aligned} & 0.752995 \\ & 0.701314 \\ & 0.393989 \\ & 0.381872 \end{aligned}$ | $\begin{aligned} & 55 \\ & 92 \\ & 26 \\ & 29 \end{aligned}$ | $\begin{aligned} & 1 \\ & 3 \\ & 1 \\ & 1 \end{aligned}$ | $\begin{aligned} & 1 \\ & 1 \\ & 1 \end{aligned}$ | $\begin{array}{r} 1,538 \\ 1,559 \\ 912 \\ 1,180 \end{array}$ | $\begin{aligned} & 3.401 \\ & 3.705 \\ & 3.858 \\ & 5.150 \end{aligned}$ | $\begin{aligned} & 4 \\ & 3 \\ & 4 \\ & 5 \end{aligned}$ | $\begin{aligned} & 0.8502 \\ & 1.2350 \\ & 0.9645 \\ & 1.0300 \end{aligned}$ | 766 | 76 |
|  | Lower | Nakhon Ratchasima <br> Buri Ram <br> Si Saket <br> Udon Ratchathani | $\begin{aligned} & 41 \\ & 42 \\ & 43 \\ & 44 \end{aligned}$ | $\begin{aligned} & 0.990266 \\ & 0.500298 \\ & 0.542736 \\ & 0.764217 \end{aligned}$ | $\begin{array}{r} 130 \\ 29 \\ 18 \\ 100 \end{array}$ | $\begin{aligned} & 2 \\ & 1 \\ & 1 \\ & 2 \end{aligned}$ | $\begin{aligned} & 1 \\ & - \\ & - \\ & 1 \end{aligned}$ | $\begin{aligned} & 2,211 \\ & 1,310 \\ & 1,399 \\ & 1,983 \end{aligned}$ | $\begin{aligned} & 3.721 \\ & 4.287 \\ & 4.296 \\ & 4.325 \end{aligned}$ | $\begin{aligned} & 4 \\ & 4 \\ & 4 \\ & 5 \end{aligned}$ | $\begin{aligned} & 0.9302 \\ & 1.0717 \\ & 1.0740 \\ & 0.8650 \end{aligned}$ | 612 | 41 |
| Central | West | Kanchanaburi <br> Supan Buri <br> Prachuap Khiri Khan | $\begin{aligned} & 51 \\ & 52 \\ & 53 \end{aligned}$ | $\begin{aligned} & 0.513020 \\ & 0.892849 \\ & 0.374421 \end{aligned}$ | $\begin{aligned} & 22 \\ & 40 \\ & 43 \end{aligned}$ | $\begin{aligned} & 1 \\ & - \\ & 2 \end{aligned}$ | $\begin{aligned} & - \\ & - \\ & \hline \end{aligned}$ | $\begin{aligned} & 456 \\ & 667 \\ & 242 \end{aligned}$ | $\begin{aligned} & 1.481 \\ & 1.245 \\ & 1.077 \end{aligned}$ | $\begin{aligned} & 2 \\ & 1 \\ & 1 \end{aligned}$ | $\begin{aligned} & 0.7405 \\ & 1.2450 \\ & 1.0770 \end{aligned}$ | 293 | 22 |
|  | Middle | Nakhon Phathom <br> Saraburi <br> Ayutthaya <br> Sing Buri | $\begin{aligned} & 61 \\ & 62 \\ & 63 \\ & 64 \end{aligned}$ | $\begin{aligned} & 0.584287 \\ & 0.517625 \\ & 0.746394 \\ & 0.251278 \end{aligned}$ | $\begin{aligned} & 40 \\ & 60 \\ & 94 \\ & 11 \end{aligned}$ | $\begin{aligned} & 1 \\ & 2 \\ & 2 \\ & 1 \end{aligned}$ | $\begin{aligned} & - \\ & \overline{1} \\ & - \end{aligned}$ | $\begin{array}{r} 773 \\ 890 \\ 1,449 \\ 325 \end{array}$ | $\begin{aligned} & 2.205 \\ & 2.866 \\ & 3.236 \\ & 2.156 \end{aligned}$ | $\begin{aligned} & 2 \\ & 3 \\ & 3 \\ & 2 \end{aligned}$ | $\begin{aligned} & 1.1025 \\ & 0.9553 \\ & 1.0786 \\ & 1.0780 \end{aligned}$ | 365 | 35 |
|  | Bangkok <br> Region* <br> excluding <br> Bangkok <br> Metropolis | Nonthaburi <br> Samut Prakan | $\begin{aligned} & 01 \\ & 02 \end{aligned}$ | $\begin{aligned} & 0.655665 \\ & 0.754867 \end{aligned}$ | $\begin{aligned} & 35 \\ & 68 \end{aligned}$ | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ | - | $\begin{aligned} & 391 \\ & 459 \end{aligned}$ | $\begin{aligned} & 0.994 \\ & 1.013 \end{aligned}$ | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ | $\begin{aligned} & 0.9940 \\ & 1.0130 \end{aligned}$ | 121 |  |

Table Al (Continued)


* Since one extra block was added to the original 18 in Bangkok, sample weight for urban areas in Bangkok Metropolitan $=0.9297$. For all other urban areas in SOFT, assumed sample weight is 1.0 .


## Definition of column headings

$\mathbf{B}_{i}=$ No. of blocks in Changwat i
$b_{i}^{i}=$ No. of blocks selected in the SPC sample
c. $=$ No. of blocks which appear in the SOFT sample
$M_{i}=$ Total no. of villages in the Changwat $=\sum_{C} V_{k}$ in equation (2)
$n_{i}^{\prime}=$ Number of amphoe which should have been selected so that overall probability for villages (with 3 villages selected per amphoe) is constant $=1 / 200$
$n_{i}^{-}=M_{i} / 600 P_{i}$
$n_{i}=N^{1}$. of amphoe actually selected from Changwat i . The number of villages selected from that Changwat equals $3 n_{i}$.

The variance of the ratio estimate $r=0, y$ is estimated as

$$
\operatorname{Var}(r)=\frac{1-f}{x^{2}} \sum_{h=1}^{H}\left[\frac{m_{h}}{m_{h-1}} \quad\left(\begin{array}{ll}
\sum_{h} & Z_{h i}^{2}-\frac{Z_{h}^{2}}{m_{h}} \tag{4}
\end{array}\right)\right],
$$

where f is the overall sampling fraction, usually negligible;

$$
\begin{aligned}
\mathrm{Z}_{\mathrm{hi}} & =\mathrm{y}_{\mathrm{hi}}-\mathrm{r} \cdot \mathrm{x}_{\mathrm{hi}} \\
\text { and } \mathrm{Z}_{\mathrm{h}} & =\sum_{\mathrm{i}=1}^{\mathrm{m}_{\mathrm{h}}} \mathrm{Z}_{\mathrm{hi}}=\mathrm{y}_{\mathrm{h}}-\mathrm{r} \cdot \mathrm{x}_{\mathrm{h}}
\end{aligned}
$$

It may be pointed out that by definition

$$
\mathrm{Z}=\sum_{\mathrm{h}=1}^{\mathrm{H}} \mathrm{Z}_{\mathrm{h}}=\mathrm{y}-\mathrm{r} . \mathrm{x}=0 .
$$

Most statistics involved in the present study are ratio estimates of the kind mentioned above. Estimates
like ordinary means, proportions or population totals can all be regarded as special cases of ratios.

Survey results presented in the report often relate to subclasses of the population rather than to the whole sample. Subclasses usually cut across the sample strata and clusters. Example of subclasses are age groups, marriage cohorts, ethnic or other socioeconomic groups. The above formulae apply also to computation of sampling errors over subclasses. In these computations all individuals not belonging to the particular subclass are simply ignored as if they, did not belong to the sample.

In the study of differentials, estimations of variance of differences for pairs of subclasses are required. Denoting the second subclass in the pair by prime ('), the variance of the difference of two ratios is given by

The above assumes that the two subclasses come from the same PSU. Usually the last term in equation (5) is positive due to positive correlation between individuals in two subclasses belonging to the same cluster.

In the presentation and interpretation of results it is helpful to derive certain other statistics from the variances originally computed for an estimate $r$. These are the following:

1. Standard Error (SE), defined as the squareroot of the variance.
2. Relative Standard Error (SE/r), defined as the standard error of the estimate divided by the value being estimated.
3. Confidence intervals, which are interval estimates with prescribed confidence that the interval includes the average result of all possible samples for a given sampling rate. For example the 95 per cent confidence interval is

$$
\begin{equation*}
\mathrm{r} \pm 1.96 \mathrm{SE} . \tag{}
\end{equation*}
$$

4. Design effect (DEFT), which tries to measure
the relative error of the design with what it would have been had the sample been selected entirely at random. DEFT is the ratio of the estimated standard error based on the actual clustered sample design to that estimated on the assumption that the sample was a simple random sample of ultimate sampling units (individuals or households).
5. An average of intraclass correlations, called ROH or rate of homogeneity, defined as

$$
\begin{equation*}
\mathrm{ROH}=\frac{\mathrm{DEFT}^{2}-1}{\overline{\mathrm{~b}}-1} \tag{7}
\end{equation*}
$$

Where $\bar{b}$ is the average PSU size, i.e. the sample (or subclass) size divided by the number of PSUs in the sample.

Compared to absolute standard errors, DEFTs give a somewhat better idea as to how the particular sample design fared for a particular variable and cluster size.

ROHs, by partly eliminating the effect of actual cluster sizes, which usually differ considerably for different subclasses, are more specifically characteristic of the
variable under consideration. Further, when arranged according to ROH values, variables often form distinguishable groups. There is also some evidence to suggest that useful inferences about ROH values for subclasses and differences of subclasses can be made on the basis of values for the total sample, thus making it unnecessary to compute sampling errors for all possible subclasses and all variables. By necessity, the categories over which it is feasible to compute sampling errors will be coarser than the individual cells of the tabulations. Nor would such computations over fine categories be very useful since sampling errors estimated from survey samples are themselves subject to considerable sampling variability. Individual figures usually cannot be given much significance; suitably average figures are more meaningful in interpretation of the substantive results.

Some idea of the magnitude of ROH values for individual variables or groups of variables is essential if standard errors calculated for one base are to be used to estimate errors for the same variable for another sample base. For a random sample, standard error is inversely proportional to the squareroot of the base; for a variable with large ROH in a clustered sample, the standard error does not increase so rapidly with decreasing sample base. To assume ROH as zero in such cases will give unreasonable overestimation of the error. The reverse will be true when error for a larger base is to be estimated from results computed for a smaller base.

Procedures for estimating the standard error of an estimate for any sample base, from results computed for another base, are considered in section A. 5 below. A user interested in estimating approximate values of standard errors for different variables and subclass bases should find the 'rules of thumb' listed there useful.

## A.3.2 Definition of terms relevant to sampling error computations for the SOFT sample

## (1) Sample weights

Appropriate weights to be used were obtained by multiplying two sets of weights:
a) Sample design weights, identical for all units in a Changwat and given in Table Al above,
b) weights to compensate for differential nonresponse, $=1 /$ response rate, identical for all units in a UAU.

## (2) Identification of Units

Areas in the sample were identified by 4-digit numbers identical to the system used for the SPC, and reflect the structure of the sample which is relevant to the computation of sampling errors.

The first digit represents the stratum (sub-region). The second digit is a serial number identifying a particular Changwat within a region. The third digit identifies the type of place, i.e. urban ( $=0$, except for Bangkok) or rural $(=1-5)$. For rural, this digit actually gives the serial number of the amphoe to which a village belongs.

The last digit is the serial number of the actual cluster within a particular Changwat (for urban areas), or an amphoe (for rural areas). At any stage, serial numbers reflect the actual order of selection of the units.

For example, number " 2413 " means areas number " 3 " (which is rural) in amphoe number " 1 " in Changwat " 4 " which belongs to region " 2 ".

2401 would mean the first urban area in the Changwat. The code for Changwats (i.e. the first 2 digits of the area code) is given in Table Al.
(3) PSUs and Strata

Due to the complexity of the present design, definition of the appropriate "Primary Selection Units" is not so straightforward. The following scheme was used:
(a) For the rural sample from the 10 strata excluding the four self representing areas (Changwat codes 00, 11, 12 and 82), the remaining 31 Changwat were treated as primary sampling units. Variance for this part of the sample was computed by comparing statistics for PSUs within strata.
b) For the rural sample from these self representing areas excluding code 00 , Bangkok Metropolis, the amphoe formed PSUs for sampling error computation. For variance computation, amphoe within a Changwat were compared.
c) For the urban part of the sample, and the rural part of Bangkok Metropolis, selection of UAUs for SOFT cuts across the higher stage units. Here the only approach possible was to altogether neglect the contribution of the earlier stages to variance, and treat the UAUs (blocks or villages) as the PSUs. A "Paired selection" model for computation could be used, pairing adjacent units without regard to the stratum or Changwat boundaries, within each of the following 3 parts:

## - Bangkok Rural (4 UAUs)

- Bangkok Urban (14 UAUs) - approximation in the above sense is not necessary since UAUs are in fact PSUs.
- Other urban (15 UAUs) - 6 pairs plus one triplet can be formed taking into account the order of selection.

The above scheme gives the following groups of areas within which comparisons are made for variance computation. Strata have been formed by grouping adjacent area units, arranged in the order of selection. Areas forming one implicit strata are enclosed in parenthesis below.

Bangkok Rural:
(0051, 0061) ; (0071, 0081).
Bangkok Urban:
(0002, 0005) ; $(0009,0012)$; $(0015,0017)$;
(0019, 0022) ; $(0025,0028)$; $(0032,0035)$;
(0039, 0042).

Other Urban:
(1101, 1401) ; (2301, 3101) ; (3301, 4101) ; (4401, 4301) ; (6201, 6401) ; $(8101,8102,8301)$; (7101, 9101).

Rural from the self representing Changwat: All villages from each of the following Amphoe form a single PSU: $(111,112)$; $(121,122)$; $(821,822)$.

All other rural: All villages from each of the following Changwat form a single PSU:
$(01,02) ;(13,14) ;(21,22) ;(23,24) ;(31,32) ;$
$(33,34) ;(41,42) ;(43,44) ;$
$(51,52,53) ;(61,62) ;(63,64) ;$
$(71,7273) ;(81,83,84) ;(91,92)$.
$(33,34)$; $(41,42)$; $(43,44)$;
$(51,52,53)$; $(61,62)$; $(63,64)$;
(71, 72 73) ; $(81,83,84)$; $(91,92)$.

Hence the total sample consists of 70 PSUs, out of which 33 are urban and 37 are rural. The average PSU size is 55 for the whole sample, 17 for the urban areas, and 87 respondents for the rural areas.

## A. 4 RESULTS PEMEMMRUTATTONS

- 

A.4.1 Definition of variables and subclasses used

Sampling errors have been computed for 38 estimates which cover most of the substantive variables discussed in this report. The variables are listed in Table A2 and have been divided into five groups as follows: those relating (1) to nuptiality and exposure, (2) to fertility behaviour, (3) to fertility preferences, (4) to contraceptive knowledge and use, and (5) to costs and benefits of children as reported by husbands. In the following these five types will be referred to as Groups 1 to 5 respectively.

For each variable, sampling errors have been computed for the whole sample as well as for ten subclasses and four subclass differences. The subclasses are defined in terms of groups by current age, years since first marriage, age at first marriage and years of schooling. The resulting subclasses tend to be distributed more or less uniformly across sample clusters (i.e. are 'cross-classes'), and correspond to the most commonly used 'controls' in the tabulations presented in this report.



## A.4.2 Summary Results

Before considering detailed results on standard errors, it will be instructive to comment upon overall patterns found in computed values of the desired statistics DEFT and ROH.

Sampling errors computed from survey samples are usually themselves subject to great sampling variability, and one should not rely too much on the precision of individual results. For the SOFT sample, based on only 70 PSUs grouped into 34 strata, the computed values of standard errors and DEFTs are subject to coefficients of variation greater than 12 per cent, and those for (DEFT) ${ }^{2}$ to greater than 25 per cent - implying mild variations in computer ROH values particularly for cases with DEFTs near 1.0. Nevertheless, sampling errors for diverse statistics are very distinct in spite of this variability. In addition, values averaged over similar
subclasses tend to have more or less stable relationships to values computed over the whole sample. This applies to individual variables, as well as to groups of similar variables.

The main results are summarised in Table A3. Within each group variables have been arranged in increasing values of ROHs computed over the whole sample.* A great range, from near zero to 0.1 , in ROHs for different variables is apparent, and this will be reflected in equally large variations in sampling errors for different variables based on the same sample.** While

* For convenient reference, the same order was followed in Table A2 above.
** Since average PSU sizes for the rural and urban areas differ greatly, in calculating ROH from equation (7) we take $b$, the average cluster size to be the weighted mean

$$
\bar{b}=0.85 \times 87+0.15 \times 17=76
$$

rather than the simple average $(=55)$ for all PSUs.

Table A3 DEFTs and ROHs for the total sample, subclasses and differences.

| VARTABLE | DEETs |  |  |  |  | ROHs |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GROUP 1 $\begin{array}{ll}\text { MARRID } \\ & \text { NUTMAR } \\ & \text { AGE MAR } \\ & \text { MARR-H } \\ & \text { FECUND }\end{array}$ | (1) Total sample | (2) Mean <br> for 10 <br> subclasses | (3) Mean for 4 differences | (4) Ratio (2)/(1) | (5) Ratio $(3) /(\mathbb{1})$ | (6) Total sample | (7) Mean for 10 subclasses | (8) Ratio $(7) /(6)$ |
|  | 1.07 | 1.02 | 0.95 | 0.95 | 0.89 | * | * | * |
|  | 1.31 | 1.15 | 1.18 | 0.88 | 0.90 | . 009 | . 010 | 1.08 |
|  | 1.31 | 1.15 | 1.14 | 0.88 | 0.87 | . 004 | . 018 | 1.31 |
|  | 1.52 | 1.22 | 1.09 | 0.80 | 0.72 | . 022 | . 025 | 1.13 |
|  | 1.79 | 1.41 | 1.21 | 0.79 | 0.68 | . 030 | . 032 | 1.10 |
| Mean for Group 1 | 1.40 | 1.19 | 1.11 | 0.85 | 0.80 | . 015 | . 017 | 1.14 |
| GROUP 21PREGNT  <br>  CF5 YRS <br>  INTCLS <br>  CALIVE <br>  INTEST <br>  BIRTHS <br>  INTOPN | 0.94 | 1.06 | 1.05 | 1.13 | 1.11 | * | * | * |
|  | 0.96 | 1.03 | 1.07 | 1.07 | 1.11 | * | * | * |
|  | 1.06 | 0.97 | 0.95 | 0.92 | 0.90 | * | * | * |
|  | 1.29 | 1.24 | 1.20 | 0.96 | 0.93 | . 009 | . 027 | 3.08 |
|  | 1.43 | -1.23 | 1.12 | 0.86 | 0.78 | . 016 | . 020 | 1.22 |
|  | 1.52 | 1.34 | 1.19 | 0.88 | 0.78 | . 018 | . 029 | 1.64 |
|  | 1.57 | 1.29 | 1.10 | 0.82 | 0.70 | . 023 | . 025 | 1.09 |
| Mean for Group 2 | 1.25 | 1.17 | 1.10 | 0.94 | 0.88 | . 010 | . 015 | 1.50 |
| GROUP 3 NOMORE <br>  NOMR-H <br>  BOYP-H <br>  FAMSIZ <br>  FAMS-H <br>  BOYPRF <br>  MORE-H | 1.36 | 1.42 | 1.42 | 1.04 | 1.04 | . 017 | . 053 | 3.20 |
|  | 1.52 | 1.27 | 1.16 | 0.84 | 0.76 | . 025 | . 040 | 1.60 |
|  | 1.20 | 1.15 | 1.08 | 0.96 | 0.90 | . 028 | . 037 | 1.33 |
|  | 1.73 | 1.45 | 1.17 | 0.84 | 0.68 | . 028 | . 042 | 1.51 |
|  | 1.76 | 1.47 | 1.24 | 0.84 | 0.70 | . 037 | . 050 | 1.37 |
|  | 1.32 | 1.31 | 1.30 | 0.99 | 0.98 | . 037 | . 051 | 1.37 |
|  | 1.85 | 1.44 | 1.17 | 0.78 | 0.63 | . 042 | . 048 | 1.14 |
| Mean for Group 3 | 1.53 | 1.36 | 1.22 | 0.89 | 0.80 | . 030 | . 046 | 1.52 |
| GROUP 4 STRLSD | 1.62 | 1.28 | 1.05 | 0.79 | 0.65 | . 022 | . 028 | 1.26 |
| USEPIL | 2.05 | 1.58 | 1.19 | 0.77 | 0.58 | . 043 | . 055 | 1.27 |
| USEMTH | 2.34 | 1.67 | 1.15 | 0.71 | 0.49 | . 060 | . 063 | 1.04 |
| CURPIL | 2.01 | 1.47 | 1.07 | 0.73 | 0.53 | . 061 | . 069 | 1.13 |
| CURMTH | 2.18 | 1.56 | 1.12 | 0.72 | 0.51 | . 062 | . 064 | 1.03 |
| PILL-H | 2.16 | 1.69 | 1.32 | 0.78 | 0.61 | . 063 | . 087 | 1.38 |
| MTHD-H | 2.46 | 1.78 | 1.20 | 0.72 | 0.49 | . 087 | . 092 | 1.06 |
| KNOWMT | 2.78 | 1.94 | 1.68 | 0.70 | 0.60 | . 091 | . 090 | 0.99 |
| Mean for Group 4 | 2.20 | 1.62 | 1.22 | 0.74 | 0.56 | . 061 | . 068 | 1.12 |
| GROUP 5 | 1.34 | 1.20 | 1.03 | 0.90 | 0.77 | . 014 | . 018 | 1.32 |
|  | 1.57 | 1.26 | 1.05 | 0.80 | 0.67 | . 026 | . 022 | 0.86 |
|  | 1.82 | 1.44 | 1.07 | 0.79 | 0.59 | . 040 | . 046 | 1.16 |
|  | 1.85 | 1.40 | 1.03 | 0.76 | 0.57 | . 042 | . 048 | 1.14 |
|  | 1.97 | 1.42 | 0.95 | 0.72 | 0.48 | . 050 | . 050 | 1.01 |
|  | 1.90 | 1.44 | 1.07 | 0.76 | 0.56 | . 051 | . 072 | 1.41 |
|  | 2.23 | 1.67 | 1.35 | 0.75 | 0.60 | . 068 | . 087 | 1.25 |
|  | 2.28 | 1.65 | 1.03 | 0.72 | 0.45 | . 072 | . 076 | 1.05 |
|  | 2.63 | 1.82 | 1.27 | 0.69 | 0.48 | . 079 | . 070 | 0.88 |
|  | 2.52 | 1.78 | 1.15 | 0.71 | 0.46 | . 093 | . 109 | 1.18 |
| BURDEN | 2.73 | 1.96 | 1.17 | 0.72 | 0.43 | . 110 | . 120 | 1.07 |
| Mean for Group 5 | 2.08 | 1.55 | 1.11 | 0.74 | 0.53 | . 059 | . 065 | 1.10 |
| Mean for all variables | 1.76 | 1.41 | 1.15 | 0.80 | 0.65 | . 040 | . 047 | 1.18 |

[^24]there is a considerable variation within groups of variables, clear differences also exist between groups (see means for groups of variables in col. (6), Table A3). Variables relating to nuptiality and fertility behaviour tend to have the lowest ROH values, of the order of 0.01 to 0.02 . Fertility preferences occupy an intermediate position with ROH values of the order of 0.03 to 0.04 .

Variables relating to contraception and attitudes on value of children (Groups 4 and 5) have the largest ROH values, of the order of 0.05 to 0.08 . Use of contraception obviously depends upon its availability, and greater homogeniety within sample areas can be expected particularly in Thailand where the spread of family planning is relatively recent. Greater homogeneity within clusters for attitudinal variables is also not unexpected; in part it may also be a reflection of interviewer-variance, since attitudinal questions are more difficult to handle and response patterns may be rather sensitive to characteristics of individual interviewers.

ROHs for subclasses tend to be larger than ROHs based on the whole sample (see cols. (7) and (8). Further, the ratio of subclass ROHs to those based on the whole sample tends to be relatively smaller for variables-groups for which the total sample ROHs are larger. The average value of this ratio for the 38 variables considered here is 1.2 . It should be noted that the present results are based on well distributed but rather large subclasses, consisting of one-fifth to four fifths of the sample (the average size being 40 per cent of the sample).

Turning now to DEFTs, the pattern is naturally similar to that for ROHs discussed above. For variables relating to nuptiality and fertility behaviour, clustering of the sample results in 50 to 100 per cent increase in variance compared to a random sample (i.e. DEFTs ~ 1.2 to 1.4 ). For variables relating to contraception and attitudes on value of children, four to six fold increase in variance is observed.

For a given variable, DEFTs for subclasses are mostly smaller than the value based on the whole sample, since for a subclass the effective cluster size is smaller and more than compensates for the somewhat larger subclass ROH . In fact, for the various groups of variables mean DEFTs over subclasses turn out to be remarkably close to the approximate relation

$$
\begin{equation*}
\operatorname{DEFT}_{\mathrm{s}}^{2}=1+\left(\mathrm{DEFT}_{\mathrm{t}}^{2}-1\right) \mathrm{M}_{\mathrm{s}} \tag{8}
\end{equation*}
$$

[^25]where suffix ' $s$ ' refers to subclass and ' $t$ ' to the total sample. $\mathrm{M}_{\mathrm{s}}$ is the proportion of cases belonging to a subclass; average $M_{s}$ for the 10 subclasses considered here is 0.4 .

The mean DEFT for all 38 vaniables is 1.76 for the total sample and 1.41 for the ten subclasses averaged. These two figures indicate, respectively, a three-fold and a two-fold increase in variance due to clustering of the sample. For a smaller subclass, say with $\mathrm{M}_{\mathrm{s}}=0.15$, equation (8) gives DEFT $\sim 1.15$, or about 30 per cent increase in variance due to clustering.

For differences between means for subclasses, DEFTs tend to be considerably lower than those discussed above for the means themselves. Values in col. (3), Table A3, are mostly under 1.2 irrespective of DEFTs in cols. (1) and (2) for the means; the overall mean for col. (3) is 1.15 for differences between subclasses smaller than the subclasses considered here, DEFTs will tend to be even smaller, making it justifiabie to use standard error estimations based on assumptions of simple random sampling.

## A.4.3 Detailed Results

Table A5 shows sampling errors for all variables, computed over the whole sample as well as over each of the ten subclasses. For each case the three quantities shown are (1) $r$, a weighted mean or proportion, (2) its standard error, SE and (3) n , the (unweighted) number of cases on which the estimations of $r$ and $S E$ are based.*

Standard errors based on the total sample for Groups 1 and 2 of the variables are quite small mostly between one and two per cent of the mean. For Group 3, standard errors are mostly between two and three per cent. Relative standard errors are, however, much larger for Groups 4 and 5 - being usually between 6 to 10 per cent. The presence of such large sampling errors should be noted particularly in relation to the variables concerned with contraceptive use. For example, the $95 \%$ confidence interval for the percentage of ever-users (USE MTH) is $39 \pm 4$, and that for percentage of pill users (USEPIL) is $26 \pm 3$.

Turning to subclasses, the results, in spite of considerable variability, conform on the whole to the approximate relation.

$$
\begin{equation*}
\mathrm{SE}_{\mathrm{s}}^{2}=\frac{\mathrm{SE}_{\mathrm{t}}^{2}}{\mathrm{DEFT}_{\mathrm{t}}^{2}}\left\{\frac{1}{\mathrm{M}_{\mathrm{s}}}+\left(\mathrm{DEFT}_{\mathrm{t}}^{2}-1\right)\right\}=\mathrm{f}_{\mathrm{s}} \cdot \mathrm{SE}_{\mathrm{t}}^{2}, \text { say } \tag{9}
\end{equation*}
$$

In fact, it appears that equation (9) may be used for estimating standard errors for subclasses from results computer over the whole sample for individual variables. For this purpose, values of the factor $f_{s}=\left(\mathrm{SE}_{\mathrm{s}}^{2} / \mathrm{SE}_{\mathrm{t}}^{2}\right)$ as a function of $\mathrm{M}_{\mathrm{s}}$ (proportion of the sample belonging to a subclass) and $\mathrm{DEFT}_{\mathbf{t}}^{2}$ (design effect for a variable,
computed over the total sample) are tabulated below. In addition to providing an approximation to subclass variances from results based on the whole sample, Table A4 is also helpful in making clearer the overall pattern of the detailed results given in Table A5.

Table $A 4$ Values of $f_{s}=\left(S E S_{s}^{2} / S E_{t}^{2}\right)$, the ratio of subclass variance to that based on the whole sample.

|  | $\mathrm{M}_{\mathrm{s}} \rightarrow$ | 0.1 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \mathrm{DEFT}_{\mathrm{t}}^{2} \\ \downarrow \end{gathered}$ | 1.0 | 10.00 | 5.00 | 2.50 | 1.67 | 1.25 | 1.00 |
|  | 1.5 | 7.03 | 3.68 | 2.00 | 1.45 | 1.17 | 1.00 |
|  | 2.0 | 5.50 | 3.00 | 1.75 | 1.34 | 1.13 | 1.00 |
|  | 2.5 | 4.60 | 2.60 | 1.60 | 1.27 | 1.10 | 1.00 |
|  | 3.0 | 3.97 | 2.32 | 1.50 | 1.22 | 1.08 | 1.00 |
|  | 3.5 | 3.61 | 2.16 | 1.44 | 1.19 | 1.07 | 1.00 |
|  | 4.0 | 3.25 | 2.00 | 1.38 | 1.17 | 1.06 | 1.00 |
|  | 4.5 | 2.98 | 1.88 | 1.33 | 1.15 | 1.06 | 1.00 |
|  | 5.0 | 2.80 | 1.80 | 1.30 | 1.13 | 1.05 | 1.00 |
|  | 5.5 | 2.62 | 1.72 | 1.27 | 1.12 | 1.05 | 1.00 |
|  | 6.0 | 2.53 | 1.68 | 1.25 | 1.11 | 1.04 | 1.00 |
|  | 6.5 | 2.35 | 1.60 | 1.22 | 1.10 | 1.04 | 1.00 |

## A. 5 NOTES FOR THE USER

A user interested in estimating standard errors for particular variables computed over particular subclasses of the sample may use the following approximate procedures based on discussion in the previous sections. Subsections A.5.2 - A.5.4 below deal with the variables (means and proportions) covered in Table A5, and

* Equation (9) follows from equation (8), along with the observation that variance ( $\mathrm{SE}^{2}$ ) for a simple random sample varies inversely to sample size.
* The means shown in Table A4 sometimes differ from means presented in the main body of this report owing to minor differences in populations covered in the two cases. For example, for the variable INTOPN, intervals longer than 59 months were included for the mean in Table A4 due to an oversight, though such intervals had been excluded from the mean in Table 19. However, such differences are generally minor, and do not significantly affect the results presented here.
provide approximate procedures for interpolating results to subclasses and differences not covered in that Table. A.5.5 deals with extrapolation to estimates (variables) not covered in Table A5.


## A.5.1 Variables and subclasses covered in Table A5:

For these, the figures given in Table A5 can be directly used. (For definition of these variables and subclasses, see section A.4.1). Confidence intervals can be easily constructed from the given standard errors. For example, the 95 per cent confidence intervals (see Equation (6)) for the variable "ideal family size", (FAMSIZ)
are:
for the total sample: $3.70 \pm .09=3.61$ to 3.79
for women aged under 25: $3.05 \pm .15=2.90$ to 3.20
for women aged 25 to $34: 3.58 \pm .12=3.46$ to 3.70 , etc.
A.5.\% For variables in Table A.5, extention to 'eross classes' $\%$ not covered these:

- For the particular variable being considered, obtain $S E_{t}, n_{t}$ and DEFT $_{t}$ from columns (2) - (4), Table A5. Suffix ' $t$ ' refers to the total sample as opposed to a subclass ' $s$ '.
- Calculate $\mathrm{M}_{\mathrm{s}}=\left(\mathrm{n}_{\mathrm{s}} / \mathrm{n}_{\mathrm{t}}\right)$, where $\mathrm{n}_{\mathrm{s}}$ is the number of cases in the subclass of interest.
- use $\mathrm{M}_{\mathrm{s}}$ and $\mathrm{DEFT}^{2}{ }_{\mathrm{t}}$ to obtain $\mathrm{f}_{\mathrm{s}}$ from Table A4
$-\mathrm{SE}_{\mathrm{s}}$, the required standard error for the subclass is:

$$
\mathrm{SE}_{\mathrm{s}}=\left(\mathrm{f}_{\mathrm{s}}\right)^{1 / 2} \cdot \mathrm{SE}_{\mathrm{t}}
$$

A.5.3 Separate results for different regions of the country.

For the variables covered in Table A5, and for subclasses covered by these or by extention in A.5.2, separate results for a region ' $r$ ' may be estimated from results for the whole country ' $c$ ' as follows:

$$
\mathrm{SE}_{\mathrm{r}}=\left(\frac{\mathrm{n}_{\mathrm{c}}}{\mathrm{n}_{\mathrm{r}}}\right)^{1 / 2} \quad \mathrm{SE}_{\mathrm{c}}
$$

where $n_{c}$ is the sample size and $S E_{c}$ the standard error for the whole country (appropriate to a particular subclass etc.), and $n_{r}$ and $\mathrm{SE}_{\mathrm{r}}$ the same for the region of interest.

## A.5.4 Extention to differences of means or proportions given in Table A5.

(1) Means

- For the variable of which the means over two subclasses are being considered, obtain DEFT $_{t}$ from col. (4), Table A5.
- For each of the two subclasses, ' Sl ' and ' S 2 ', obtain $M_{s}\left(=\frac{n_{s}}{n_{t}}\right.$, the proportion of cases belonging to the subclass), and $\mathrm{SE}_{\mathrm{s}}$ as described above.
- Use $\mathrm{M}_{\mathrm{s}}$ and $\operatorname{DEFT}_{\mathrm{t}}$ to calculate for each of the two subclasses $\mathrm{DEFT}_{\mathrm{s}}$ from equation (8).

Standard error for the differences of two means is then given by


## (2) Proportions

If $p_{1}$ and $p_{2}$ are the two proportions, and $n_{1}$ and $n_{2}$ the sizes of the two subclasses being considered, then the standard error for the difference $\left(p_{1}-p_{2}\right)$ may be approximated as

$$
1.15\left[\frac{p_{1}\left(1-p_{1}\right)}{n_{1}}+\frac{p_{2}\left(1-p_{2}\right)}{n_{2}}\right]^{1 / 2}
$$

## A5.5 Extention to proportions not covered in Table A5*

(1) Total Sample

Determine which of the five groups in Table A2 the variable (proportion) of interest belongs to, and obtain mean DEFT ${ }_{t}$ for that group from Col. (1), Table A3.

If $p_{t}$ is the estimated proportion and $n_{t}$ the total sample size on which it is based, then the standard error of $p_{t}$ is

$$
\mathrm{SE}_{\mathrm{t}}=\operatorname{DEFT}_{\mathrm{t}}\left[\mathrm{p}_{\mathrm{t}}\left(l-\mathrm{p}_{\mathfrak{r}}\right) / n_{t} \cdot\right]^{1 / 2}
$$

(2) A cross-class of size $n_{s}$

Determine DEFT ${ }_{\text {as above, and with }} M_{s}=\frac{n_{s}}{n_{t}}$, use equation (8) to obtain DEFT $s$. Then for the subclass ' $s$ '

$$
\mathrm{SE}_{\mathrm{s}}=\operatorname{DEFT}_{\mathrm{s}}\left[\mathrm{p}_{\mathrm{s}}\left(1-\mathrm{p}_{\mathrm{s}}\right) / \mathrm{n} \cdot \mathrm{~s}\right]^{1 / 2}
$$

For standard errors of differences for two subclasses, approximation A.5.5 (2) may be used, even for proportions not covered in Table A5.

[^26][^27]Table A5 Standard Errors for the total sample and tea subclasses


| Years since first marriage |  |  |  |  |  |  |  |  | Age at first marriage |  |  |  |  |  | Level of education |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $<10$ |  |  | 10-19 |  |  | $\geqslant 20$ |  |  | $<20$ |  |  | $\geqslant 20$ |  |  | None |  |  | Some schooling |  |  |
| $\mathbf{r}$ | SE | n | r | SE | $n$ | r | SE | n | r | SE | $n$ | r | SE | n | r | SE | n | r | SE | n |
| . 942 | . 005 | 1560 | . 931 | . 008 | 1210 | . 880 | . 011 | 1060 | . 915 | . 005 | 2320 | . 930 | . 008 | 1500 | . 905 | . 010 | 672 | . 925 | . 005 | 3150 |
| 1.05 | . 005 | 1560 | 1.15 | . 014 | 1210 | 1.25 | . 019 | 1060 | 1.18 | . 011 | 2320 | 1.06 | . 008 | 1500 | 1.28 | . 039 | 672 | 1.11 | . 008 | 3150 |
| 20.3 | . 101 | 565 | 18.5 | . 081 | 1100 | 17.9 | . 099 | 1050 | 16.9 | . 046 | 1670 | 21.5 | . 050 | 1050 | 17.9 | . 155 | 557 | 18.9 | . 074 | 2160 |
| . 124 | . 008 | 1150 | . 148 | . 015 | 1000 | . 204 | . 017 | 841 | . 169 | . 013 | 1830 | . 132 | . 010 | 1170 | . 268 | . 030 | 538 | . 129 | . 008 | 2460 |
| .726 | . 013 | 1560 | . 609 | . 025 | 1210 | . 395 | . 017 | 1060 | . 601 | . 014 | 2320 | . 590 | . 021 | 1500 | . 544 | . 025 | 672 | . 609 | . 015 | 3150 |
| . 155 | . 009 | 1560 | . 091 | . 011 | 1210 | . 021 | . 006 | 1060 | . 101 | . 006 | 2320 | . 092 | . 009 | 1500 | . 064 | . 010 | 672 | . 105 | . 005 | 3150 |
| 1.91 | . 039 | 670 | 1.97 | . 030 | 1100 | 1.80 | . 032 | 956 | 1.81 | . 022 | 1680 | 2.03 | . 034 | 1050 | 1.77 | . 039 | 546 | 1.93 | . 018 | 2180 |
| 25.2 | . 313 | 1290 | 35.4 | . 514 | 1190 | 38.8 | . 515 | 1040 | 33.2 | . 394 | 2180 | 31.8 | . 538 | 1330 | 35.7 | . 712 | 641 | 32.0 | . 395 | 2870 |
| 1.57 | . 032 | 1560 | 3.87 | . 069 | 1210 | 5.52 | . 095 | 1060 | 3.67 | . 046 | 2320 | 2.97 | . 078 | 1500 | 4.21 | . 122 | 672 | 3.22 | . 056 | 3150 |
| 16.8 | . 368 | 1240 | 21.3 | . 567 | 1130 | 25.0 | . 675 | 1000 | 22.0 | . 431 | 2100 | 18.6 | . 509 | 1260 | 24.9 | . 932 | 608 | 19.8 | . 364 | 2750 |
| 1.70 | . 034 | 1560 | 4.38 | . 078 | 1210 | 6.67 | . 148 | 1060 | 4.30 | . 064 | 2320 | 3.35 | . 101 | 1500 | 5.06 | . 149 | 672 | 3.68 | . 075 | 3150 |
| 21.5 | . 745 | 1130 | 40.3 | L. 18 | 1080 | 50.4 | 1.04 | 1010 | 36.9 | . 921 | 1990 | 36.9 | 1.03 | 1240 | 41.3 | 1.63 | 603 | 35.9 | . 818 | 2680 |
| . 350 | . 017 | 1360 | . 757 | . 019 | 842 | . 884 | . 023 | 441 | . 606 | . 014 | 1630 | . 510 | . 021 | 1020 | . 662 | . 043 | 407 | 552 | . 013 | 2240 |
| . 337 | . 018 | 1090 | . 740 | . 021 | 862 | . 888 | . 012 | 770 | . 651 | . 014 | 1670 | . 572 | . 020 | 1050 | . 729 | . 023 | 494 | . 596 | . 018 | 2230 |
| . 679 | . 020 | 607 | . 699 | . 036 | 223 | . 620 | . 083 | 61 | . 656 | . 024 | 523 | . 715 | . 021 | 368 | . 677 | . 061 | 102 | . 680 | . 020 | 788 |
| 3.12 | . 058 | 1520 | 3.91 | . 049 | 1160 | 4.33 | . 088 | 990 | 3.78 | . 057 | 2220 | 3.57 | . 058 | 1450 | 4.07 | . 096 | 627 | 3.62 | . 041 | 3040 |
| 3.34 | . 061 | 1130 | 4.07 | . 078 | 992 | 4.39 | . 091 | 833 | 3.96 | . 062 | 1800 | 3.76 | . 068 | 1150 | 4.24 | . 122 | 532 | 3.80 | . 057 | 24.20 |
| . 607 | . 017 | 790 | . 583 | . 049 | 230 | . 574 | . 122 | 41 | . 594 | . 026 | 643 | . 610 | . 020 | 428 | . 523 | . 095 | 120 | . 610 | . 014 | 950 |
| 1.26 | . 055 | 1140 | . 398 | . 046 | 999 | . 211 | . 040 | 838 | . 624 | . 049 | 1820 | . 759 | . 045 | 1160 | . 534 | . 078 | 534 | . 708 | . 048 | 2450 |
| . 038 | . 007 | 1560 | . 124 | . 011 | 1210 | . 076 | . 010 | 1060 | . 071 | . 008 | 2320 | . 083 | . 008 | 1500 | . 053 | . 008 | 672 | . 081 | . 008 | 3150 |
| . 280 | . 019 | 1560 | . 322 | . 020 | 1210 | . 151 | . 016 | 1060 | . 260 | . 016 | 2320 | . 253 | . 017 | 1500 | . 194 | . 022 | 672 | . 271 | . 015 | 3150 |
| . 389 | . 021 | 1560 | . 497 | . 023 | 1210 | . 279 | . 020 | 1060 | . 385 | . 021 | 2320 | . 404 | . 018 | 1500 | . 275 | . 027 | 672 | . 418 | . 019 | 3150 |
| . 210 | . 020 | 1190 | . 186 | . 017 | 887 | . 139 | . 016 | 499 | . 196 | . 019 | 1560 | . 176 | . 016 | 1010 | . 191 | . 024 | 401 | . 188 | . 017 | 2170 |
| . 348 | . 022 | 1280 | . 429 | . 024 | 1020 | . 223 | . 018 | 906 | . 343 | . 023 | 1900 | . 330 | . 015 | 1260 | . 248 | . 026 | 566 | . 358 | . 019 | 2590 |
| . 329 | . 027 | 1150 | . 326 | . 022 | 1000 | . 190 | . 022 | 841 | . 287 | . 019 | 1830 | . 290 | . 022 | 1170 | . 206 | . 027 | 538 | . 307 | . 018 | 2460 |
| . 465 | . 030 | 1150 | . 513 | . 023 | 1000 | . 306 | . 023 | 841 | . 422 | . 023 | 1830 | . 495 | . 026 | 1170 | . 311 | . 035 | 538 | 464 | . 023 | 2460 |
| . 973 | . 006 | 1560 | . 965 | . 009 | 1210 | . 940 | . 015 | 1060 | . 955 | . 013 | 2320 | . 970 | . 014 | 1500 | . 885 | . 033 | 672 | . 978 | . 004 | 3150 |
| . 023 | . 006 | 1150 | . 031 | . 006 | 1000 | . 065 | . 012 | 839 | . 041 | . 006 | 1830 | . 032 | . 005 | 1160 | . 052 | . 008 | 537 | . 034 | . 005 | 2450 |
| . 370 | . 017 | 1130 | . 463 | . 016 | 986 | . 472 | . 021 | 822 | . 456 | . 016 | 1790 | . 389 | . 017 | 1150 | . 463 | . 033 | 523 | . 423 | . 014 | 2410 |
| . 122 | . 014 | 1150 | . 106 | :014 | 999 | . 128 | . 014 | 840 | . 107 | . 012 | 1830 | . 136 | . 013 | 1160 | . 110 | . 020 | 538 | . 120 | . 011 | 2450 |
| . 102 | . 012 | 1150 | . 085 | . 013 | 1000 | . 080 | . 011 | 841 | . 088 | . 008 | 1830 | . 092 | . 015 | 1170 | . 066 | . 012 | 538 | . 095 | . 010 | 2460 |
| . 254 | . 021 | 1150 | . 215 | . 019 | 1000 | . 164 | . 014 | 840 | . 214 | . 015 | 1830 | . 217 | . 018 | 1160 | . 196 | . 017 | 537 | . 220 | . 016 | 2450 |
| . 250 | . 021 | 952 | . 126 | . 016 | 961 | . 056 | . 008 | 729 | . 136 | . 012 | 1640 | . 176 | . 019 | 1000 | . 092 | . 017 | 487 | . 164 | . 015 | 2150 |
| . 034 | . 008 | 1150 | . 054 | . 014 | 998 | . 060 | . 010 | 878 | . 046 | . 010 | 1820 | . 052 | . 010 | 1160 | . 069 | . 017 | 535 | . 044 | . 009 | 2450 |
| . 385 | . 027 | 1150 | . 355 | . 021 | 1000 | . 321 | . 026 | 841 | . 353 | . 020 | 1830 | . 363 | . 024 | 1170 | . 293 | . 022 | 538 | . 371 | . 022 | 2460 |
| . 766 | . 022 | 1560 | . 860 | . 016 | 1210 | . 866 | . 016 | 1060 | . 820 | . 020 | 2320 | . 828 | . 014 | 1500 | . 867 | . 017 | 672 | . 814 | . 018 | 3150 |
| .401 | . 027 | 1150 | . 333 | . 023 | 996 | . 298 | . 025 | 836 | . 339 | . 025 | 1820 | . 364 | . 023 | 1160 | . 374 | . 030 | 533 | . 343 | . 024 | 2450 |
| . 591 | . 031 | 1150 | . 546 | . 032 | 1000 | . 468 | . 024 | 840 | 536 | . 027 | 1830 | . 549 | . 028 | 1160 | . 524 | . 044 | 538 | . 546 | . 023 | 2450 |


| Years since first marriage |  |  |  |  |  |  |  |  | Age at first marriage |  |  |  |  |  | Level of education |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $<10$ |  |  | 10-19 |  |  | $\geqslant 20$ |  |  | $<20$ |  |  | $\geqslant 20$ |  |  | None |  |  | Some schooling |  |  |
| $r$ | SE | n | $\mathbf{r}$ | SE | n | r | SE | n | r | SE | $n$ | r | SE | n | r | SE | n | r | SE | $n$ |
| . 942 | . 005 | 1560 | . 931 | . 008 | 1210 | . 880 | . 011 | 1060 | . 915 | . 005 | 2320 | . 930 | . 008 | 1500 | . 905 | . 010 | 672 | . 925 | . 005 | 3150 |
| 1.05 | . 005 | 1560 | 1.15 | . 014 | 1210 | 1.25 | . 019 | 1060 | 1.18 | . 011 | 2320 | 1.06 | . 008 | 1500 | 1.28 | . 030 | 672 | 1.11 | . 008 | 3150 |
| 20.3 | . 101 | 565 | 18.5 | . 081 | 1100 | 17.9 | . 099 | 1050 | 16.9 | . 046 | 1670 | 21.5 | . 050 | 1050 | 17.9 | . 155 | 557 | 18.9 | . 074 | 2160 |
| . 124 | . 008 | 1150 | . 148 | . 015 | 1000 | . 204 | . 017 | 841 | . 169 | . 013 | 1830 | . 132 | . 010 | 1170 | . 268 | . 030 | 538 | . 129 | . 008 | 2460 |
| . 726 | . 013 | 1560 | . 609 | . 025 | 1210 | . 395 | . 017 | 1060 | . 601 | . 014 | 2320 | . 590 | . 021 | 1500 | . 544 | . 025 | 672 | . 609 | . 015 | 3150 |
| . 155 | . 009 | 1560 | . 091 | . 011 | 1210 | . 021 | . 006 | 1060 | . 101 | . 006 | 2320 | . 092 | . 009 | 1500 | . 064 | . 010 | 672 | . 105 | . 005 | 3150 |
| 1.91 | . 039 | 670 | 1.97 | . 030 | 1100 | 1.80 | . 032 | 956 | 1.81 | . 022 | 1680 | 2.03 | . 034 | 1050 | 1.77 | . 039 | 546 | 1.93 | . 018 | 2180 |
| 25.2 | . 313 | 1290 | 35.4 | . 514 | 1190 | 38.8 | . 515 | 1040 | 33.2 | . 394 | 2180 | 31.8 | . 538 | 1330 | 35.7 | . 712 | 641 | 32.0 | . 395 | 2870 |
| 1.57 | . 032 | 1560 | 3.87 | . 069 | 1210 | 5.52 | . 095 | 1060 | 3.67 | . 046 | 2320 | 2.97 | . 078 | 1500 | 4.21 | . 122 | 672 | 3.22 | . 056 | 3150 |
| 16.8 | . 368 | 1240 | 21.3 | . 567 | 1130 | 25.0 | . 675 | 1000 | 22.0 | . 431 | 2100 | 18.6 | . 509 | 1260 | 24.9 | . 932 | 608 | 19.8 | . 364 | 2750 |
| 1.70 | . 034 | 1560 | 4.38 | . 078 | 1210 | 6.67 | . 148 | 1060 | 4.30 | . 064 | 2320 | 3.35 | . 101 | 1500 | 5.06 | . 149 | 672 | 3.68 | . 075 | 3150 |
| 21.5 | . 745 | 1130 | 40.3 | 1.18 | 1080 | 50.4 | 1.04 | 1010 | 36.9 | . 921 | 1990 | 36.9 | 1.03 | 1240 | 41.3 | 1.63 | 603 | 35.9 | . 818 | 2630 |
| . 350 | . 017 | 1360 | $\therefore .757$ | . 019 | 842 | . 884 | . 023 | 441 | . 606 | . 014 | 1630 | . 510 | . 021 | 1020 | . 662 | . 043 | 407 | . 552 | . 013 | 2240 |
| . 337 | . 018 | 1090 | . 740 | . 021 | 862 | . 888 | . 012 | 770 | . 651 | . 014 | 1670 | . 572 | . 020 | 1050 | . 729 | . 023 | 494 | . 596 | . 018 | 2230 |
| . 679 | . 020 | 607 | . 699 | . 036 | 223 | . 620 | . 083 | 61 | . 656 | . 024 | 523 | . 715 | . 021 | 368 | . 677 | . 061 | 102 | . 680 | . 020 | 788 |
| 3.12 | . 058 | 1520 | 3.91 | . 049 | 1160 | 4.33 | . 088 | 990 | 3.78 | . 057 | 2220 | 3.57 | . 058 | 1450 | 4.07 | . 096 | 627 | 3.62 | . 041 | 3040 |
| 3.34 | . 061 | 1130 | 4.07 | . 078 | 992 | 4.39 | . 091 | 833 | 3.96 | . 062 | 1800 | 3.76 | . 068 | 1150 | 4.24 | . 122 | 532 | 3.80 | . 057 | 2420 |
| . 607 | . 017 | 790 | . 583 | . 049 | 230 | . 574 | . 122 | 41 | . 594 | . 026 | 643 | . 610 | . 020 | 428 | . 523 | . 095 | 120 | . 610 | . 014 | 950 |
| 1.26 | . 055 | 1140 | . 398 | . 046 | 999 | . 211 | . 040 | 838 | . 624 | . 049 | 1820 | . 759 | :045 | 1160 | . 534 | . 078 | 534 | . 708 | . 048 | 2450 |
| . 038 | . 007 | 1560 | . 124 | . 011 | 1210 | . 076 | . 010 | 1060 | . 071 | . 008 | 2320 | . 083 | . 008 | 1500 | . 053 | . 008 | 672 | . 081 | . 008 | 3150 |
| . 280 | . 019 | 1560 | . 322 | . 020 | 1210 | . 151 | . 016 | 1060 | . 260 | . 016 | 2320 | . 253 | . 017 | 1500 | . 194 | . 022 | 672 | . 271 | . 015 | 3150 |
| . 389 | . 021 | 1560 | . 497 | . 023 | 1210 | . 279 | . 020 | 1060 | . 385 | . 021 | 2320 | . 404 | . 018 | 1500 | . 275 | . 027 | 672 | . 418 | . 019 | 3150 |
| . 210 | . 020 | 1190 | . 186 | . 017 | 887 | . 139 | . 016 | 499 | . 196 | . 019 | 1560 | . 176 | . 016 | 1010 | . 191 | . 024 | 401 | . 188 | . 017 | 2170 |
| . 348 | . 022 | 1230 | . 429 | . 024 | 1020 | . 223 | . 018 | 906 | . 343 | . 023 | 1900 | . 330 | . 015 | 1260 | . 248 | . 026 | 566 | . 358 | . 019 | 2590 |
| . 329 | . 027 | 1150 | . 326 | . 022 | 1000 | . 190 | . 022 | 841 | . 287 | . 019 | 1830 | . 290 | . 022 | 1170 | . 206 | . 027 | 538 | . 307 | . 018 | 2460 |
| . 465 | . 030 | 1150 | . 513 | . 023 | 1000 | . 306 | . 023 | 841 | . 422 | . 023 | 1830 | . 495 | . 026 | 1170 | . 311 | . 035 | 538 | . 464 | . 023 | 2460 |
| . 973 | . 006 | 1560 | . 965 | . 009 | 1210 | . 940 | . 015 | 1060 | . 955 | . 013 | 2320 | . 970 | . 014 | 1500 | . 885 | . 033 | 672 | . 978 | . 004 | 3150 |
| . 023 | . 006 | 1150 | . 031 | . 006 | 1000 | . 065 | . 012 | 839 | . 041 | . 006 | 1830 | . 032 | . 005 | 1160 | . 052 | . 008 | 537 | . 034 | . 005 | 2450 |
| . 370 | . 017 | 1130 | . 463 | . 016 | 986 | . 472 | . 021 | 822 | . 456 | . 016 | 1790 | . 389 | . 017 | 1150 | . 463 | . 033 | 523 | . 423 | . 014 | 2410 |
| . 122 | . 014 | 1150 | . 106 | :014 | 999 | . 128 | . 014 | 840 | . 107 | . 012 | 1830 | . 136 | . 013 | 1160 | . 110 | . 020 | 538 | . 120 | . 011 | 2450 |
| . 102 | . 012 | 1150 | . 085 | . 013 | 1000 | . 080 | . 011 | 841 | . 088 | . 008 | 1830 | . 092 | . 015 | 1170 | . 066 | . 012 | 538 | . 095 | . 010 | 2460 |
| . 254 | . 021 | 1150 | . 215 | . 019 | 1000 | . 164 | . 014 | 840 | . 214 | . 015 | 1830 | . 217 | . 018 | 1160 | . 196 | . 017 | 537 | . 220 | . 016 | 2450 |
| . 250 | . 021 | 952 | . 126 | . 016 | 961 | . 056 | . 008 | 729 | . 136 | . 012 | 1640 | . 176 | . 019 | 1000 | . 092 | . 017 | 487 | . 164 | . 015 | 2150 |
| . 034 | . 008 | 1150 | . 054 | . 014 | 998 | . 060 | . 010 | 878 | . 046 | . 010 | 1820 | . 052 | . 010 | 1160 | . 069 | . 017 | 535 | . 044 | . 009 | 2450 |
| . 385 | . 027 | 1150 | . 355 | . 021 | 1000 | . 321 | . 026 | 841 | . 353 | . 020 | 1830 | . 363 | . 024 | 1170 | . 293 | . 022 | 538 | . 371 | . 022 | 2460 |
| . 766 | . 022 | 1560 | . 860 | . 016 | 1210 | . 866 | . 016 | 1060 | . 820 | . 020 | 2320 | . 828 | . 014 | 1500 | . 867 | . 017 | 672 | 814 | . 018 | 3150 |
| . 401 | . 027 | 1150 | . 333 | . 023 | 996 | . 298 | . 025 | 836 | . 339 | . 025 | 1820 | . 364 | . 023 | 1160 | . 374 | . 030 | 533 | . 343 | . 024 | 2450 |
| . 591 | . 031 | 1150 | . 546 | . 032 | 1000 | . 468 | . 024 | 840 | 536 | . 027 | 1830 | . 549 | . 028 | 1160 | . 524 | . 044 | 538 | . 546 | . 023 | 2450 |

## SURVEY OF FERTILITY <br> IN THAILAND FORM I <br> HOUSEHOLD SURVEY

A. CHANGWAT $\qquad$
$\square$
B. AMPHOE $\qquad$
C. TAMBOL
D. MUNICIPALITY $\qquad$ E.D. $\qquad$ BLOCK $\square$
E. VILLAGE $\qquad$ $\square$
F. HOUSEHOLD NO. IN SPC. $\qquad$ $\square \square$
G. ADDRESS $\qquad$
H. NAME OF THE HEAD OF HOUSEHOLD

INTERVIEWER $\qquad$ NO. $\square$

| NO. OF CALLS | 1 | 2 |  |
| :--- | :---: | :---: | :---: |
| DATE, MONTH |  |  | 3 |
| RESULT OF INTERVIEW |  |  |  |
|  |  |  |  |
| TIME USED |  |  |  |

RESULT CODE OF INTERVIEW:
(1) COMPLETED
(4) VACANT OR DEMOLISHED
(2) COMPLETED BUT NEW HOUSEHOLD
(5) UNABLE TO FIND THE HOUSE
(3) NOT AT HOME
(6) OTHER (SPECIFY ABOVE)

| FIELD EDITING | $\square$ | SPOT CHECK | $\square$ | OFFICE EDITING | $\square$ | CODING | $\square$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DATE MONTH | DATE | MONTH | DATE MONTH | DATE MONTH |  |  |  |
| NAME |  |  |  |  |  |  |  |

1. I WOULD LIKE TO KNOW SOME INFORMATION OF EVERY MEMBER WHO USUALLY LIVES IN THIS HOUSEHOLD, STARTING WITH THE HEAD

RECORD INFORMATION OF EVERY MEMBER WHO USUALLY LIVES IN THIS HOUSEHOLD; INCLUDING THOSE WHO ARE TEMPORARILY AWAY (EXCLUDING THOSE WHO USUALLY LIVE ELSEWHERE but STAy over night in this household last night) put the name of the head on the first line; followed by other members and relationships TO THE HEAD IN COLS. 2-3 FOR EVERY PERSON MENTIONED; COMPLETE COLS. 4-10 FOR EACH PERSON THEN COMPLETE COLS. 11 -14 FOR EVERY MARRIED MALE.

| $\begin{array}{\|l\|l\|} \hline \text { LINE } \\ \text { No. } \end{array}$ | For every member |  |  |  | For those age 12 Years old \& OLDER |  |  |  |  | For every married males |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | name and surname | RELATIONSHIP TO THE HEAD | SEX | Age | MARITAL status | WORking status for wages or salary in the past 12 MONTHS (1 MAR. 1974-28 FEB. 1975) |  |  |  | eligible male |  |  |  |
|  | 1. What is the name of the head? <br> 2. Who else usually live here, including those who temporarily away? <br> LIST THE ENTRIES IN FOLLOWING ORDER: head, wife or husband UNMARRIED CHILD, ADOPTED CHILD; MARRIED CHILD, SON OR DAUGHTER IN LAW GRAND CHILD, OTHER RELATIVES, SERVANTS, ETC. | What is the relationship to the head? <br> RECORD <br> RELATIONSHIP SUCH AS WIFE, SON, <br> DAUGHTER, ETC. | $\begin{gathered} \text { TICK } \\ \text { IN } \\ \text { APRO- } \\ \text { PRIATE } \\ \square \end{gathered}$ | $\begin{aligned} & \text { RECORD } \\ & \text { THE } \\ & \text { COM- } \\ & \text { PLETE } \\ & \text { YEAR } \end{aligned}$ | Has this person ever been married? <br> TICK <br> IN <br> APPROPRIATE $\square$ | Did he/she work for wages or salaries during the past 12 months? <br> TICK $\downarrow$ IN <br> APPROPRIATE $\square$ | If 'YES' <br> How many months did he/she work? PUT NO. OF MONTHS IF 'NO', $\qquad$ | How much <br> did he/she get paid per month | FOR THOSE WHO WORK FOR PIECES ESTIMATE FOR THE YEAR | TICK $\downarrow$ if <br> married male <br> IF NOT, <br> LEAVE THIS <br> COL. BLANK | put line no. OF HIS WIFE APPEARED IN THIS HOUSEHOLD IF WIFE DID NOT APPEAR IN THIS HOUSEHOLD PUT $\qquad$ | TICK $\downarrow$ IF WIFE AGED 49 Years old OR UNDER IF NOT, leave this col. blank | TICK $\sqrt{ }$ FOR THose who was COMPLETED interview in FORM II, if NOT, SPECIFIED the reason |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 01 |  |  | M $\square$ F $\square$ |  | $\begin{array}{ll} \hline \text { YES } & \square \\ \text { NO } & \square \end{array}$ | $\begin{array}{ll} \hline \text { Yes } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 02 |  |  | M $\square$ F $\square$ |  | YES $\quad \square$ NO $\square$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 03 |  |  | M $\square$ F $\square$ |  | Yes  <br> No $\square$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 04 |  |  | M $\quad \square$ F $\square$ |  | Yes  <br> NO $\square$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 05 |  |  | M $\square$ $\mathrm{F} \quad \square$ |  | $\begin{array}{ll}\text { Yes } & \square \\ \text { No } & \square\end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 06 |  |  | M $\square$ F $\square$ |  | Yes NO No | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 07 |  |  | M $\square$ $\mathrm{F} \quad \square$ |  | $\begin{array}{ll}\text { Yes } & \square \\ \text { No } & \square\end{array}$ | $\begin{array}{ll} \hline \text { yes } & \square \\ \text { No } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 08 |  |  | M $\square$ F $\square$ |  | YES <br> NO | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 09 |  |  | M $\square$ $\mathrm{F} \quad \square$ |  | $\begin{array}{ll}\text { YeS } \\ \text { NO } & \square \\ \text { N }\end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 10 |  |  | $\mathrm{M} \square$ $\mathrm{F} \quad \square$ |  | YES  <br> NO $\square$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 11 |  |  | M $\square$ $\mathrm{F} \quad \square$ |  | Yes  <br> NO $\square$ | Yes  <br> NO $\square$ |  |  |  | $\square$ |  | $\square$ |  |

1. I WOULD LIKE TO KNOW SOME INFORMATION OF EVERY MEMBER WHO USUALLY LIVES IN THIS HOUSEHOLD, STARTING WITH THE HEAD
 elsewhere but stay over night in this household last night) put the name of the head on the first line; followed by other members and relationships TO THE HEAD IN COLS. 2-3 FOR EVERY PERSON MENTIONED; COMPlete COLS. 4-10 FOR EACH PERSON THEN COMPLETE COLS. 11-14 FOR EVERY MARRIED MALE.

| $\begin{array}{\|l\|l} \text { Line } \\ \text { No. } \end{array}$ | For Every member |  |  |  | FOR THOSE AGE 12 Years OLD \& OLDER |  |  |  |  | for every married males |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NAME AND SURNAME | RELATIONSHIP TO THE HEAD | SEX | AGE | MARITAL status | working status for wages or salary in the past 12 MONTHS (1 MAR. 1974-28 FEB. 1975) |  |  |  | eligible male |  |  |  |
|  | 1. What is the name of the head? <br> 2. Who else usually live here, including those who temporarily away? LIST THE ENTRIES IN FOLLOWING ORDER: HEAD, WIFE OR HUSBAND UNMARRIED CHILD, ADOPTED CHILD; MARRIED CHILD, SON OR DAUGHTER IN LAW, GRAND CHILD, OTHER RELATIVES, SERVANTS, ETC. | What is the relationship to the head? <br> RECORD RELATIONSHIP SUCH AS WIFE, SON, <br> DAUGHTER ETC. | $\begin{gathered} \text { TICK } \\ \text { IN } \\ \text { APRO. } \\ \text { PRIATE } \\ \square \end{gathered}$ | RECORD THE COM- PLETE YEAR | Has this person ever been married? <br> TICK $\sqrt{ }$ IN APPROPRIATE $\square$ | Did he/she work for wages or salaries during the past 12 months? <br> TICK $d$ IN APPROPRIATE $\square$ | If 'YES' <br> How many months did he/she work? <br> PUT NO, OF MONTHS <br> IF 'NO', $\qquad$ $\qquad$ | How much did he/she get paid per month? | FOR THOSE WHO WORK FOR PIECES, ESTIMATE FOR THE YEAR | TICK $\sqrt{\text { IF }}$ married male <br> If NOT, leave this col. blank | put line no. OF HIS WIFE appeared in this HOUSEHOLD IF WIFE DID NOT APPEAR IN THIS HOUSEHOLD PUT $\qquad$ | TICK $\downarrow$ IF WIFE AGED 49 YEARS OLD OR UNDER IF NOT, Leave This COL. BLANK | tick $\sqrt{ }$ FOR THOSE WHO WAS COMPLETED INTERVIEW IN FORM II, IF NOT, SPECIFIED the reason |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 01 |  |  | M $\square$ F $\square$ |  | $\begin{array}{ll}\text { YeS } \quad \square \\ \text { NO } & \square\end{array}$ | Yes  <br> NO $\square$ |  |  |  | $\square$ |  | $\square$ |  |
| 02 |  |  | м $\square$ F $\square$ |  | $\begin{array}{ll}\text { YES } \quad \square \\ \text { NO } & \square\end{array}$ | Yes No N $\square$ |  |  |  | $\square$ |  | $\square$ |  |
| 03 |  |  | M $\square$ F $\square$ |  | $\begin{array}{ll}\text { YES } \quad \square \\ \text { No } & \square\end{array}$ | YES  <br> NO $\square$ |  |  |  | $\square$ |  | $\square$ |  |
| 04 |  |  | M $\square$ F $\square$ |  | Yes  <br> NO $\square$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 05 |  |  | M $\square$ F $\square$ |  | $\begin{array}{ll}\text { Yes } \\ \text { NO } & \square \\ \text { N }\end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { No } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 06 |  |  | M $\quad \square$ F $\quad \square$ |  | YES  <br> NO $\square$ | $\begin{array}{ll} \text { Yes } & \square \\ \text { No } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 07 |  |  | M $\square$ F $\square$ |  | Yes  <br> NO $\square$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 08 |  |  | M $\square$ F $\square$ |  | YES $\quad \square$ NO $\quad \square$ | $\begin{array}{ll} \hline \text { Yes } & \square \\ \text { No } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 09 |  |  | M <br> F |  | $\begin{array}{ll} \hline \text { YES } & \square \\ \text { NO } & \square \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 10 |  |  | M $\square$ F $\square$ |  | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ |  |  |  | $\square$ |  | $\square$ |  |
| 11 |  |  | M $\square$ F $\square$ |  | YES  <br> NO $\square$ | Yes $\square$ <br> No $\square$ |  |  |  | $\square$ |  | $\square$ |  |

EXPLAIN TO THE RESPONDENT THAT THE FOLLOWING QUESTIONS COVER OIVLY THE HEAD AND MEMBERS OF TME HOUSEHOLD EXCLUDING OTHER PERSONS WHO ARE NOT RELATIVES AND SERVANTS AND ALL OF THE INFORMA. TION IS REFERRED TO THE PAST 12 MONTHS.
2. During last year, did anyone in your household engage in rice-farming, generalfarming, or fruit-growing?

$\qquad$ "RAI".
What were your main crops, on your farm?
TICK $\sqrt{ }$ IN $\square$ IN COL. 1 ON THE CHART CORRESPONDING TO THE APPROPRIATE MAIN CROPS. INTERVIEWER: DO NOT READ ANY MAIN CROPS' NAME TO THE RESPONDENT. THEN ASK FOR DETAILS ABOUT EACH TIGKED CROP, THE FOLLOWING QUESTIONS:
A. How many "rai" did you use?

ENTER THE NUMBERS OF "rai" IN COL. 2.
B. How many times did you plant?

IF PLANT ONLY ONCE, ENTER 1 IN COL. 3 AND RECORD NUMBERS OF. LAND USED (SAME AS COL. 2) IN COL. 4.
IF PLANT MORE THAN 1 TIME, ASK, Did you use the same amount of land for each time?

IF 'YES': ENTER NO. OF CULTIVATION IN COL. 3 AND RECORD (NO. OF CULTIVATION X NO. OF LAND USED) IN COL. 4.

IF 'NO': LEAVE COL. 3 BLANK. RECORD NO. OF LAND USED IN COL. 4. EXAMPLE: FIRST PLANT USED. 1 RAI, THE SECOND USED 2 RAI, ALTOGETHER EQUAL TO 3 RAI.

| COL. 1 <br> MAIN CROPS <br> TICK $\sqrt{ }$ IN $\square$ (DO NOT READ) | COL. 2 <br> RECORD NUMBERS <br> OF LAND USED <br> IN RAI | COL. 3 <br> NUMBERS OF CULTIVATION DURING THE PAST 12 MONTHS | $\begin{gathered} \text { COL. } 4 \\ \text { TOTAL OF } \\ \text { LAND USED } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| 1. RICE $\square$ |  |  |  |
| 2. JUTE $\square$ |  |  |  |
| 3. SUGAR CANE $\square$ |  |  |  |
| 4. CASSAVA $\square$ |  |  |  |
| 5. CORN $\square$ |  |  |  |
| 6. VEGETABLES $\square$ |  |  |  |
| 7. FRUITS $\square$ |  |  |  |
| 8. RUBBER TREE $\square$ |  |  |  |
| OTHER <br> (SPECIFY) - |  |  |  |

5. Does the land you use for farming belong to anyone of your household?

YES $\begin{aligned} & 1 \\ & \frac{1}{0}\end{aligned}$


2

6. Does all of it or part of it belong to you?

8. How much did you rent during the past year?
(IF DID NOT PAY; RECORD "DID NOT PAY')

BAHT
9. Did you use the following equipments for your farming?

INTERVIEWER: READ THE FOLLOWING ITEMS AND TICK $\sqrt{ }$ IN APPR $\delta$. PRIATE ANSWER.

| EQUIPMENT | USED |  |
| :--- | :--- | :--- |
|  | YES | NO |
| 1. WATER PUMP | $\boxed{1}$ | $\boxed{2}$ |
| 2. MOTOR POWER USED IN FARMING | $\boxed{1}$ | $\boxed{2}$ |
| 3. RICE MILLING | $\boxed{1}$ | $\boxed{2}$ |
| 4. PLOUGHING MACHINE | $\boxed{1}$ | $\boxed{2}$ |
| 5. TRACTOR | $\boxed{1}$ | $\boxed{2}$ |
| 6. OTHERS | $\square$ | $\boxed{2}$ |

10. Did you hire any other workers to help you in your farming last year?

11. How many did you hire?
12. In your household, did you raise livestock for working or for sale?
YES

NO 2
(SKIP TO 12)
13. What kind of livestock did you raise?

INTERVIEWER: READ OUT THE LIST BELOW. FOR EACH 'YES' IN COL. 2, OBTAIN THE NUMBER RAISED AND RECORD IN COL. 3.

| COL. 1 <br> LIVESTOCK | COL. 2 RISED |  | COL. 3 |
| :--- | :---: | :---: | :---: |
|  |  |  |  |

## $\square \square_{63}$ <br> $\square_{65}$ <br> $\square \square_{67}$ <br> $\left.\square^{\square}\right]_{70}$ <br> $\square^{\square 1}{ }_{73}$

14. Besides the livestock mentioned above, did you raise any other animals last year?


61

YES \begin{tabular}{c}
$\square$ <br>
14.a. What was that? <br>
(SKIP TO 15) <br>
\hline

$\quad$

\hline <br>
\hline \& LIVESTOCK <br>
\hline 6 \& <br>
\hline 7 \& <br>
\hline
\end{tabular}

15. Did you raise any fish or silk worms for sale?

| YES $\square$ | NONO TO 16) |
| :---: | :---: |
| 15.a. How much did you earn? <br> (GO TAHT |  |



| 12 | $\square$ |  |
| :--- | :--- | :--- |

$\square \square_{6} \quad \square \square \square_{9}$
16. Did your household have any land that is rented out to others?


YES

$\downarrow$

No 2
(SKIP TO 26)
,


EXPENSES ON:

| WAGES, SALARIES | ___BAHT | __BAHT | ___BAHT |
| :---: | :---: | :---: | :---: |
| RAW MATERIALS | $\ldots$ BAHT | _BAHT | _ BAHT |
| BUILDING PAYMENT | _ BAHT | _BAHT | _BAHT |
| WATER; ELECTRICITY | ___BAHT | __ BAHT | _BAHT |
| OTHER, EXPENSES | —_BAHT | _BAHT | - BAHT |
| TOTAL EXPENSE | $\ldots$ BAHT | $\ldots$ BAHT | _ BAHT |

21. Is there any room or any part of your house used for business?
yes (1]
NO 2
22. Did you use motorcycle, car or truck for your business?

YES 1
NO 2
23. Did you use any kind of machine in your business?

26. Does this house belong to anyone in this household?

YES 1
NO 2
2
27. Does your household have any room, house or building that is rented out to others? (No matter whether own the land or not)

29. Beside these, are there anyone in this household who earn income or receive financial assistance from other sources, such as from relatives living elsewhere, property rent, bonus, pension, etc.?

YES $\square$
30. How much such income in all during the past year?

BAHT

31. During the past year did anyone keep a bank account or own bond, shares or have a life insurance?
32. Where do you get the water supply used in this house?2
RUBBER TILES ..... 3
WOOD ..... 4
EXPENSIVE FLOOR (3 KINDS) ..... 5
OTHER
$\qquad$
C. TYPE OF ROOFING
THATCH (ELEPHANT GRASS) ..... 1
TIN ..... 2
CEMENT TILES ..... 3
CEMENT ..... 4
OTHER
$\qquad$
35. Does the house have electricity?


SURVEY OF FERTILITY IN THAILAND
FORM II

## HUSBAND SURVEY



## DETAILS OH LIVING GMILDREN

101. INTERVIEWER: BEFORE STARTING THE INTERVIEW, TICK APPROPRIATE BOX(ES) FROM THE MOUSEHOLD QUESTIONNAIRE [SEE $1,2,12,19)$
R. NOT RELATED TO HEAD OF HOUSEHOLD
(RECORDED AS NON-RELATIVE OR SERVANT IN COL. 3 OF Q. 1)
R. IS HEAD OF HOUSEHOLD OR RELATED TO HEAD OF HOUSEHOLD, BUT NO FAMILY ENTERPRISE IN THIS HOUSEHOLD.
(HEAD OR RELATED TO HEAD IN COL. 3 Q. 1 AND 'NO' IN Q. 2, 12, 19)
R. IS HEAD OF. HOUSEHOLD OR RELATED TO HEAD OF HOUSEHOLD, AND HAS FAMILY ENTERPRISE IN THIS HOUSEHOLD.
(HEAD OR RELATED TO HEAD IN COL. 3 Q. 1 AND 'YES' IN Q. 2, 12, 19)
(TICK AS MANY AS APPLYED)
HOUUSEHOLD HAS FARM (Q2)
HOUSEHOLD RAISE ANIMAL (Q 12)
HOUSEHOLD HAS FAMILY BUSINESS (Q 19) 4
102. In what month and year were you born?
$\xrightarrow[\text { MONTH }]{\substack{\text { YEAR } \\ \text { IF YEAR D.K. (OR ANIMAL YEAR) } \\ \square}}$
103. How old are you?
$\xrightarrow[\text { (RECORD BEST ESTIMATE) }]{\text { YEARS OLD }}$

104. In what month and year was your wife born?

105. How old is your wife? ____YEARS OLD (RECORD BEST ESTIMATE)
106. In what month and year were you and your wife married?
MONTH
YEAR
IF YEAR D.K. (OR ANIMAL YEAR) $\square \longrightarrow$
107. How many years have you and your wife married? Y_YEARS
(RECORD BEST ESTIMATE)


YEAR
IF YEAR D.K. (OR ANIMAL YEAR)

108. Do you have any alive children from your present wife, and including any not living with you now?
YES $\square$
NO 00
(SKIP TO 110)
109. How many?
(NUMBER)
INTERVIEWER: STARTING WITH THE OLDEST CHILD, COMPLETE TABLE 1 FOR EACH CHILD, IN COL. 6 TICK 'OF BOTH'
110. Have you been married more than once?


NO 2
(SKIP TO 113)
111. Do you have any alive children from any previous wife, and including any not living with you now?


NO 00
(SKIP TO 113)
112. How many?
(NUMBER)
INTERVIEWER: COMPLETE TABLE 1 FOR EACH CHILD IN COL. 6 TICK 'ONLY R'S'
113. Had your wife been married before her marriage to you?

114. Does she have any alive children from previous marriage, and including any not living with you?


NO 00
(SKIP TO 116)

115. How many?

## (NUMBER)

INTERVIEWER: COMPLETE TABLE 1 FOR EACH CHILD, IN COL 6 TICK "ONLY WIFE'S"
116. Do you have adopted children who are alive and including any not living with you now?

YES


NO 00
(SKIP TO 118)
$\square$ 54
117. How many?

INTERVIEWER: COMPLETE TABLE 1 FOR EACH CHILD IN COL. 6 TICK "ADOPTED"

TABLE 1


| Line number | (1) <br> Please give me the name of these children starting with the oldest? | (2) <br> Is that boy or girl? | (3) <br> Does he/she usually live in this house- hold? | (4) How old is he/she YEARS | (5) <br> Has he/she ever been married? (12 YEARS OLD AND OVER) | (6) <br> TICK BOX | CODE IN CARD 23, AFTER SECTION 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 08 |  | B. 1 ] | $\begin{array}{cc} \mathrm{y} & 1 \\ \mathrm{~N} & \boxed{2} \end{array}$ |  | $\begin{array}{cl} \mathrm{Y} & 1 \\ \mathrm{~N} & {[2} \end{array}$ | OF BOTH [1] ONLY WIFE' 3 <br> ONLY R'S 2 ADOPTED |  |
| 09 |  | B. 1 [ | Y 1 <br> N $\square$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S 3 ONLY R'S 2 ADOPTED |  |
| 10 |  | B. 1 | $\begin{array}{cc} \mathrm{Y} & 1 \\ \mathrm{~N} & \boxed{2} \end{array}$ |  | $\begin{array}{cl} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | of both 1 ONLY WIFE'S 3 <br> ONLY R'S 2 ADOPTED | $\square \square \square \square_{31}$ |
| 11 |  | B. 1 | $\begin{array}{ll} \mathrm{y} & 1 \\ \mathrm{~N} & 1 \\ \hline \end{array}$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | of both 1 ONLY WIFE'S 8 ONLY R's 2 ADOPTED |  |
| 12 |  | B. 1 | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ |  | $\begin{array}{cr} \mathrm{y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S <br> ONLY R'S 2 ADOPTED |  |
| 13 |  | $\begin{aligned} & \text { B. } 1 \\ & \text { G. } 2 \end{aligned}$ | $\begin{array}{lll} \mathrm{Y} & 1 \\ \mathrm{~N} & \boxed{2} \end{array}$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S <br> ONLY R'S 2 ADOPTED <br> ONL   | $\square \square \mid \square \square \square$ |
| . 14 |  | B. 1 | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & \boxed{2} \end{array}$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S 8 <br> ONLY R'S 2 ADOPTED 4 |  |
| 15 |  | $\begin{array}{ll} \text { B. } & 1 \\ \text { G. } & 2 \end{array}$ | $\begin{array}{ll} \mathrm{y} & 1 \\ \mathrm{~N} & \boxed{2} \end{array}$ |  | $\begin{array}{cc} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S <br> ONLY R'S 2 ADOPTED <br> ONT   | $\square \square \square \square \square \square \square_{61}$ |
| 16 |  | B. 1 | $\begin{array}{ll} \mathrm{y} & 1 \\ \mathrm{~N} & 2 \end{array}$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S 8 <br> ONLY R'S 2 ADOPTED 4 |  |
| 17 |  | $\begin{array}{ll} \text { B. } 1 \\ \text { G. } 2 \end{array}$ | $\begin{array}{lll} \mathrm{y} & 1 \\ \mathrm{~N} & 2 \end{array}$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH 1 ONLY WIFE'S 3 <br> ONLY R'S 2 ADOPTED 4 |  |
| 18 |  | $\begin{aligned} & \text { B. } 1 \\ & \text { G. } 2 \end{aligned}$ | Y $\square$ <br> N $\square$ |  | $\begin{array}{ll} \mathrm{Y} & 1 \\ \mathrm{~N} & 2 \end{array}$ | OF BOTH ONLY WIFE'S 8 <br> ONLY R'S $2]$ ADOPTED |  |

205. If the family in your circumstances were to raise only 2 children, would it be fairly easy economically, somewhat of a burden or a heavy burden?

FAIRLY EASY [1 SOMEWHAT OF A BURDEN 2 HEAVY BURDEN 3
(SKIP TO 208)
206. What about raising 4 children? would it be fairly easy economically, somewhat of a burden or heavy burden?

FAIRLY EASY 1 SOMEWHAT OF A BURDEN 2 HEAVY BURDEN 9 ?
(SKIP TO 208)
207. What about raising 6 children? would it be fairly easy economically, somewhat of a burden or heavy burden?

FAIRLY EASY [1 SOMEWHAT OF A BURDEN 2 HEAVY BURDEN 3
208. In your opinion how much education does a boy need to get along in the world these days?
$\qquad$ NO EDUCATION NEEDED 00 (SKIP TO 211)
209. If a family in your circumstances were to educate sons to this level, would it be fairly easy economically, somewhat of a burden or a heavy burden?

FFAIRLY EASY 1 SOMEWHAT OF A BURDEN 2 HEAVY BURDEN 3
210. For a family in your circumstances, is it difficult to send sons to school because they are needed to work, or is there no such difficulty?

YES, DIFFICULTY 1
NO SUCH DIFFICULTY 2
211. In your opinion at what age would you say sons usually begin to give useful help (around the house or in farm or business)?

AT AGE $\qquad$
212. And for girls, in your opinion how much education does a girl need to get along in the world these days?
$\qquad$ NO EDUCATION NEEDED 00
(SKIP TO 215)
213. If a family in your circumstances were to educate daughters to this level would it be

FAIRLY EASY 1 SOMEWHAT OF A BURDEN 2 HEAVY BURDEN 3
214. For a family in your circumstances, is it difficult to send daughters to school because they are needed to work or is there no such difficulty?

NO SUCH DIFFICULTY 2
.

YES, DIFFICULTY 1

215. In your opinion at what age would you say daughters usually begin to give useful help (around the house or in farm or business)?

> AT AGE
$\qquad$
$\square$
21
216. INTERVIEWER:

TICK APPROPRIATE BOX (SEE 119) ANY CHILDREN AGE 8 AND OVER LIVING IN THIS HOUSEHOLD


NO 2
(SKIP TO 222)
217. Do any of your children help around the house?

220. Do any of your children help in your family (farm business)? YES

NO 4
(SKIP TO 222)
221. Do they give a great deal of help, a moderate or a little help?

GREAT DEAL 1
MODERATE 2
A Little 3
222. When children grow up, they often start earning before they are married. Can parents these days expect their unmarried children to give a part of their earning to them?

YES 1
NO 2
223. Can parents still expect that after their children get married?

$$
\text { YES } 1
$$



## $\square$

28
226. Do they contribute any of their earning to the householel?

227. Is it regularly or only occasionally?

REGULARLY 1 OCCASIONALLY 2
228. INTERVIEWER: TICK APPROPRIATE BOX (SEE 121). ANY MARRIED CHILDREN?

YES 1 ]
NO 2
(SKIP TO 231)
229. Do any of your married children contribute their earning to the household?

YES $\square$
(SKIP TO 231)
230 . Is it regularly or only occasionally?
REGULARLY 1
OCCASIONALLY 2
231. When you are old or can no longer work for any other reason, what means of financial support might you have?
(TICK AS MANY AS MENTIONED PROBE ONCE " Any other"?)
SAVING OR INCOME FROM FARM, BUSINESS, OR OTHER PROPERTY
PENSION OR SOCIAL SECURITY
HELP FROM CHILDREN

HELP FROM FAMILY OTHER THAN CHILDREN 4
CHARITY, OR HELP FROM FRIENDS 5
NONE, OR WILL HAVE TO KEEP WORKING 6
OTHER (SPECIFY)
232. When you are old, do you expect to rely for financial support on your children a good deal, or only a little or not at all?

INTERVIEWER: IF R. HAS NO CHILDREN, 232. - 233. REFER TO CHILDREN HE MIGHT HAVE BY THE TIME HE IS OLD

GOOD DEAL 1 ONLY A LITTLE 2 NOT AT ALL 3
233. When you are old, do you expect to live with any of children, or any children you might have?
$\qquad$
301. What kind of work have you been doing over the past year?
(INTERYIEWER: OBTAIN A DETAILED DESCRIPTION, RECORD ONLY MAIN OCCUPATION IF WORKED FOR MANY JOBS)
$\qquad$
$\qquad$
302. INTERVIELIER: TICK APPROPRIATE BOX (SEE 101)
R. NOT RELATED TO HEAD OF HOUSEHOLD 1
(SKIP TO 307)
R. IS HEAD OF HOUSEHOLD OR RELATED TO HEAD OF HOUSEHOLD, BUT NO FAMILY ENTERPRISE IN THIS HOUSEHOLD 2
(SKIP TO 307)
R. IS HEAD OF HOUSEHOLD OR RELATED TO HEAD OF HOUSEHOLD, AND HAS FAMILY ENTERPRISE IS THIS HOUSEHOLD 3
(GO ON 303)
303. Has your wife been working in the family (farm, business) during the past year?

## YES 1

NO 2
(SKIP TO 307)
304. What kind of work has she been doing?
(OBTAIN A DETAILED DESCRIPTION, IF DONE MANY WORKS, RECORD THE ONE THAT SPENT MOST OF THE TIME)
$T$
(SKIP TO 307)
$\qquad$
$\qquad$
305. How many hours a week did she do such work on the average?
$\qquad$
306. Did she also work outside the family (farm, business) during the past year?

NO 2
(SKIP TO 319)
307. Has your wife been doing any work for wages or salary during the past year?

YES 1
(SKIP TO 334)

NO 2
(GO ON 308)
308. INTERVIEWER: TICK APPROPRIATE BOX (SEE 118) ANY CHILDREN AGED 14 AND UNDER LIVING IN THIS HOUSEHOLD. YES 1 NO 2


48



52

FRIENDS, NEIGHBOURS OR PRIVATE CARETAKER
SERVANTS
OTHER (SPECIFY) $\qquad$
311. If your wife wanted to work, might she find work which is suitable for her?


YES 1 (GO ON 312)

MAY BE 2
(GO ON 312)

NO 3
(SKIP TO 316)
D.K. 4]
(SKIP TO 316)
312. What kind of that work might it be?
(OBTAIN A DETAILED DESCRIPTION)

55
314. Would that work be done for the whole year or only seasonally?

WHOLE YEAR 1
SEASONALLY 2
315. How much would she get from that work, for weekly or monthly?

BAHT/WEEK OR $\qquad$ BAHT/MONTH (RECORD ONLY ONE)
316. Is your wife interested in finding any work?

62

[GO TO SECTION 4]
319. INTERVIEWER: TICK APPROPRIATE BOX (SEE 118) ANY CHILDREN AGED 14 AND UNDER LIVING IN HOUSEHOLD.
YES

NO 2

320. If your wife had to care for a baby, would it be interfere with her ability to work? would it be a good deal, only a little or not at all? GOOD DEAL 1 (SKIP TO 326) ONLY A LITTLE 2 NOT AT ALL 3
(SKIP TO 326)
(SKIP TO 326)
321. How were children look after when your wife was working? (TICK AS MANY AS MENTIONED : DO NOT PROBE)

## NO PROBLEM, CHILDREN GROWN UP OR AWAY AT SCHOOL

 OR WORKINGNO PROBLEM, WIFE WORKS AT HOME
WIFE CAN TAKE THEM WITH HER AT WORK
OLDER CHILDREN CAN LOOK AFTER YOUNGER ONES
OTHER FAMILY MEMBER CAN LOOK AFTER THEM 5
FRIENDS, NEIGHBOURS, OR PRIVATE CARETAKER
SERVANTS
OTHER (SPECIFY)
322. If she did not have to look after the children, would your wife work more?

324. Beside working in family enterprise, if your wife were to take up additional work for payment, would you have to pay for someone to look after the children?
325. How would the children be look after?
(TICK AS MANY AS MENTIONED DO NOT PROBE)

NO PROBLEM, CHILDREN GROWN UP OR AWAY AT SCHOOL OR WORKING

NO PROBLEM, WIFE CAN WORK AT HOME
WIFE CAN TAKE THEM WITH HER AT WORK
OLDER CHILDREN CAN LOOK AFTER YOUNGER ONES
OTHER FAMILY MEMBERS CAN LOOK AFTER THEM
FRIENDS, NEIGHBOURS OR PRIVATE CARETAKERS
SERVANTS
OTHER (SPECIFY) $\qquad$
326. If your wife were to take up additional work for payment, might she find work which is suitable for her?

YES


MAY BE 2
NO 3
D.K. 4
(SKIP TO 331)
327. What kind of work might it be? (OBTAIN A DETAILED DESCRIPTION)
328. Would that be done mostly at home, or mostly away from home?

AT HOME 1 AWAY FROM HOME 2
329. Would that work be done for the whole year or only seasonally?

330. How much would she get from that work, for weekly or monthly?

BAHT/WEEK OR
BAHT/MONTH
(RECORD ONLY ONE)
331. Is your wife interested in finding any addition work for payment?

332. How would you feel about your wife taking on work, would you approve, disapprove, or don't you mind?

333. Why is that?

334. As you mentioned that your wife has been working for payment, what kind of that work is that be?
(INERVIEWER: OBTAIN A DETAILED DESCRIPTION; IF SHE HAS BEEN WORKING FOR MANY JOBS RECORD ONLY MAIN OCCU. PATION)
$\qquad$
335. How many hours a week did she do such work?

HOURS PER WEEK
336. INTERVIEWER: TICK APPROPRIATE BOX (SEE 118) ANY CHILDREN AGED 14 AND UNDER LIVING IN THIS HOUSEHOLD)


NO 2

337. If your wife had to care for a baby would it interfere with her ability to work, a good deal, only a little or not at all?

GOOD DEAL
(SKIP TO 342) A Litt (SKIP TO 342) NOT AT ALL 3 (SKIP TO 342)
338. Did you have to pay someone to look after the children when your wife was at work?


OTHER FAMILY MEMBERS CAN LOOK AFTER 5
FRIEND, NEIGHBOURS, OR PRIVATE CARETAKER 6
SERVANTS
OTHER (SPECIFY)
340. If your wife did not have to look after the children, would your wife work more?

342. How do you feel about your wife working for payment? Do you approve, disapprove or don't you mind?

344. Does she work mostly at home or mostly away from home?


AWAY FROM HOME

345. If your wife were to take up additional work outside of home, might she find work which is suitable for her?

YES 1 MAY BE 2 NO 3 D,K. $\square$

346. If your wife were to take up additional work might she firid work. which is suitable for her?

347. What kind of work might that be? (OBTAIN DETAILED DESCRIPTION)
$\qquad$
348. Would the work be done for the whole year or seasonally? WHOLE YEAR I

SEASONALLY 2
349. How much would she get from that work, for weekly or monthly?
350. Is she interested in finding such work?

YES 1
NO
[GO ON SECTION 4]

## SECTION 4

## CONTRACEPTTVE KNOWLEDGE AND USE

401. Have you heard of family planning or about contraceptive?

402. What method of family planning have you heard of?

TICK IN COL. 1 OF GHART BELOW ALL METHODS MENTIONED. THEN FOR EACH METHOD TICKED, ASK 403.
403. Have you or your wife ever used (METHOD)?
$\uparrow$
404. INTERVIEWER: FOR EACH METHOD, (SKIPPING METHOD TICKED IN COLS. 1 - 2), DESCRIBE THE METHOD AND ASK:
Have you ever heard of the method?
TICK IN COL. 3 IF 'YES', ASK:
Have you or your wife ever used the method?
TICK IN COL. 4.
405. Have you heard of any other methods? (besides that mentioned) IF "YES" SPECIFY METHOD AND ASK, Have you or your wife ever used that method?

|  |  |  | What method have you heard of? | Have you or your wife ever used? | Have you ever heard of the method? | Have you or your wife ever used this method? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NO. | METMOT | DESCRTPTHON | $\begin{gathered} \mathrm{COL} .1 \\ 402 \end{gathered}$ | $\begin{gathered} \mathrm{COL} .2 \\ 403 \end{gathered}$ | $\begin{gathered} \text { COL. } 3 \\ 404 \end{gathered}$ | $\underset{405}{\mathrm{COL}, 4}$ |
| 1 | PILL | Taken orally by the woman every day | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \mathrm{NO} & 2 \\ \hline \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \boxed{3} \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \\ \hline \end{array}$ |
| 2 | IUD | Loop or coil inserted in the womb and left there. | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & 3 \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \\ \hline \end{array}$ |
| 3 | INJECTION | Taken regularly for family planning reasons. | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \\ \hline \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & 3 \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \end{array}$ |
| 4 | DIAPHRAGM OR JELLY | Placed in the woman before sex. | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \\ \hline \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \square \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \end{array}$ |
| 5 | CONDOM | Worn by man during sex. | $\square$ | $\begin{array}{lr} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & 3 \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \end{array}$ |
| 6 | RHYTHM | Avoiding sex on particular days when woman more likely to become pregnant. | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & 3 \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \end{array}$ |
| 7 | ABSTAIN | To go without sex for several months or longer for family planning reasons. |  | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & 3 \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \\ \hline \end{array}$ |



| 8 | $\begin{aligned} & \text { MALE } \\ & \text { STERILIZA- } \\ & \text { TION } \end{aligned}$ | Man has an operation called Vasectomy, so that his wife will have no more children | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & \boxed{3} \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | FEMALE <br> STERILIZA- <br> TION | Woman has her tuber tied in order NOT TO HAVE MORE CHILDREN. | $\square$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \\ \hline \end{array}$ | $\begin{array}{ll} \text { YES } & \square \\ \text { NO } & 3 \end{array}$ | $\begin{array}{ll} \text { YES } & 4 \\ \text { NO } & 5 \\ \hline \end{array}$ |
| 10 | OTHER | (SPECIFY) |  | $\begin{aligned} & \hline 1 \\ & 2 \end{aligned}$ |  |  |
| 11 | OTHER | (SPECIFY) |  | $\begin{aligned} & \hline 1 \\ & \hline 2 \end{aligned}$ |  |  |

IF THE RESPONDENT OR MIS WIFE HAVE A STERILIZATION SKIP TO 415
406. Is your wife pregnant now?
YES 1
NO 2
(SKIP TO 412)
D.K. 3
(SKIP TO 412)
409. Do you want to have another child sometime, in addition to the one your wife is expecting?


NO
2
D.K.
410. How many more children do you want to have after the one your wife is expecting?
$\qquad$ (NUMBER)


END INTERVIEW
(NUMBER)
412. Do you want to have (a, another) child sometime?

YES 1
NO 2
D.K. 3
414. How many children more do you want to have?
$\qquad$
(NUMBER)
413. Would you prefer (next) child to be a boy or a girl?

BOY 1 GIRL 2 EITHER $\frac{3}{\square}$

415. If you could choose exactly the number of children to have in your whole life, how many children would that be?


| NAME OF HOUSEHOLD HEAD <br> HOUSE NO. $\qquad$ LANE $\qquad$ STREET <br> TAMBON. $\qquad$ DISTRICT $\qquad$ CHANGWAT |  |
| :---: | :---: |
|  |  |
|  |  |



| VISIT | DATE | TIME |  | RESULT |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | INTERVIEWER | PART | PART |
| 0 |  |  |  |  |  |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |

REASON INTERVIEW NOT OBTAINED (IN DETAIL) $\qquad$

TIME TO START
TIME TO FINISH
$21 \quad 22$
DURATION OF INTERVIEW .MINUTES

## INSTRUGTION

HOUSEHOLD is defined as an aggregate of persons, generally bound by ties of kinship, usually living together under the same roof, and having a common arrangement for the preparation and consumption of food, regardless of individual family.

ELIGIBLE WOMAN is the ever married woman (including currently married, divorced, widowed and separated) aged below 50 years old.

## HOUSEHOLD MEMBER

1. Use the numerical order on the household record form according to the priorities stipulated under paragraph 002. 002. First of all, we should like to know how many persons live together with you in this house (household), and the relationship of each to the head of the household or his wife.

INTERVIEWER: record the information on the household record form. List the entries in the following order: head of the household (normally, this will be a male, unless a female is head of the household because she is widowed, separated, or single. Even if the wife is the legal head of the household, the husband should still be considered to be the head of the household); the wife of the head of the household; children of the head of the houschold and his wife and their families; other children of the head of the household; other children of the wife; father and mother of the head of the household; brothers and sisters of the head of the household and their families; brothers and sisters of the wife of the head of household and their families; other relatives and their families; other persons who are not relatives and their families.

If no individual belongs in a certain category then go on to ask about individuals under the next category.
Record the entries clearly and assign a number to each entry. When referring to an individual related to someone for whom information has already been collected express the relationship by using the number already assigned. For example, No. 1 and No. 2 will normally be the head of the household and his wife. If entry No. 5 is the husband of the younger sister of the wife of the head of the household, then record that he is the younger brother-in-law of [2]. For No. 6 who is the younger sister of the wife of the head of the household, recorded that she is the younger sister of [2] and the wife of [5]. For No. 7, the son of the younger sister and of the younger brother-in-law of the wife of the head of the household, record that he is the nephew of [2] and the son of [5 + 6]. In other words, first clearly show the relationship between the person and the head of household or his wife; these show the relationship of that person with other members of his own immediate family.

For each child, state whether he or she is the child of that married couple, the child of a former wife or former husband, or an adopted child.

For the children of both parties, it should be clearly shown through the use of numbers who the parents are; for example, child of (1) + (2).

For children of a former wife or a former husband, it should be stated that the child is a child by a former marriage of the father, No. (1), or a child by a former marriage of the mother, No. (2).

For an adopted child, it should be stipulated that the child is an adopted child of (1) and (2).

003 . Ask the sex of each individual and enter the information in column 003.
004. (For each person) when born? Record this information on the record form for members of the family, in column 004. Ask first the year of birth; then the month for the respondent, for the husband or wife, and for all children of all categories. For other persons, ask only the year of birth; then ask, "How old is he now?", to recheck. Record the age (at last birthday) in the prescribed space.
005. (For each person) Does this person usually live here?
006. (For each person) Did this person sleep here last night?
007. All persons 12 years of age and over in that household in addition to the respondent, should be asked for details regarding marital status, i.e., Whether he or she is single, married, widowed, divorced, or separated. If ever married, then ask his or her age at first marriage. Record the information in column 007.
008. Tick $X$ and also put the eligible woman's name and line number on the same line of hers.
009. If the eligible woman's husband is in this household put $X$ and also his name and line number on the same line of his. If he does not stay in this household put $\checkmark$ only.

FORM FOR RECORDING INFORMATION CONCERNING FAMILY MEMBERS


INTERVIEWER: JUST TO MAKE SURE THAT THE RESPONDENT DID NOT FORGET ANY OTHER MEMBERS OF THE FAMILY, ASK THE FOLLOWING QUESTIONS:

1. Are there any other persons, such as small children or infants, 2 . In addition, are there any other people who may not be that we have not listed?
$\square$ YES (ENTER EACH IN TABLE) $\square$ NO members of your family, such as domestic servants, friends or lodgers who usually live here?
2. Do you have any guests or visitors temporarily staying with you? $\square$ Age at last birthday.
$\square$ YES (ENTER EACH IN TABLE) $\square$ NO

## LOCATION OF INTERVIEW (PLACE NAME)

$\qquad$
101. Do you live in this house?

102. Do you live in $\qquad$ (PLACE NAME)?

104. Have you always lived in $\qquad$ (PLACE NAME)?

YES 1
NO 2

107. In what month and year were you born?
$\overline{\text { (MONTH) }}$

19
(YEAR)
D.K.

108. How old are you?
$\overline{\text { (RECORD BEST ESTIMATE) }}$


Estimated by the Interviewee
Estimated by the Interviewer
109. What was the highest level of school you completed?

Specify
$\square \square$ 4041
If never been in school or less than grade 4.
110. Can you read or write?

| Read $[1]$ Yes | Write $[1]$ Yes |
| ---: | ---: |
| $2]$ No | $[2]$ No |

112. What language do you speak?

| $[1$ | Standard Thai | 5 | Malaysian |
| :--- | :--- | ---: | :--- |
| $[2]$ | Northern Thai dialect | 6 | Cambodian |
| $[3]$ | Northeastern Thai dialect | $\boxed{7}$ | Vietnamese |
| $4]$ | Southern Thai dialect | 8 | Chinese |
| 9 | Other |  |  |

113. This person is:

| 7 | Thai | 4 | Chinese |
| :--- | :--- | :--- | :--- |
| 2 | Thai-Chinese | 5 | Malaysian |
| 3 | Thai-Muslim | 6 | Indian |
| 7 | Other (specify) |  |  |

## SEGTION 2

## 

201. We should like to get a complete record of all the babies each woman has actually given birth to in all of her life. Do you have any sons you have given birth to now living with you?

202. Do you have any sons you have given birth to who do not live with you?

203. Do you have any daughters you have given birth to now living with you?

204. How many live with you?
205. Do you have any daughters you have given birth to who do not live with you?


NO 2
(SKIP TO 209)
208. How many do not live with you? $\qquad$
209. Have you ever given birth to any boy or girl who later died, even if the child lived for only a short time?

YES 1
NO 2
(SKIP TO 211)
210. How many of your children have died? $\qquad$
211. INTERVIEWER; SUM ANSWERS TO 202, 204, 206, 208, AND 210 AND ENTER total HERE:
(SUM)

NOW ASE:
Just to make sure $I$ have this right, you have had (SUM) births. Is that correct?
[1 YES


IF ZERO LIVE BIRTH, SKIP TO 221
IF ONE LIVE BIRTH, SKIP TO 212
OTHERWISE:
Now I want to ask you some questions about each of your (SUM) births, starting with the first birth you had.

ASK 212. - 215. FOR EACH LIVE BIRTH, STARTING WITH THE FIRST. IF TWINS, USE ONE LINE FOR EACH AND CONNECT WITH A BRACKET AT THE LEFT.

献TH HESTOTY

| NO. | 212. <br> In what month and year did your (first, second...) birth occur? <br> IF D.K. ASK HOW MANY YEARS AGO. | 213. <br> Was it <br> a boy <br> or <br> a girl? | 214. <br> Is this child still living? <br> IF YES: <br> What is (his/her) name? | 215. <br> IF DEAD: <br> For how long did the child live? | 9 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ${ }^{\circ} 01$ | MTH $\qquad$ <br> YR $\qquad$ <br> YRS <br> AGO $\qquad$ | $\begin{array}{ll} \text { BOY } & 1 \\ \text { GIRL } & 2 \end{array}$ | $\begin{aligned} & \text { YES } \square \\ & \text { NAME } \square \\ & \text { NO } 2 \longrightarrow \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 02 | $\qquad$ | BOY $\square$ <br> GIRL $\square$ 2 | $\begin{aligned} & \text { YES } \frac{\square}{\downarrow} . \\ & \text { NAME } \xrightarrow{\square} \\ & \text { NO } \quad 2 \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 03 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | BOY $\square$ <br> GIRL $\square$ 2 | $\begin{aligned} & \text { YES } \\ & \text { NAME } \xrightarrow[\downarrow]{\square} \\ & \text { NO } 2, \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ | $\stackrel{28}{ }$ |
| 04: | $\qquad$ | $\begin{aligned} & \text { BOY } 19 \\ & \text { GIRL } 2 \end{aligned}$ |  | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 05 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { BOY } 1 . \\ & \text { GIRL } 2 \end{aligned}$ | $\begin{aligned} & \text { YES } 1 \\ & \text { NAME } \quad \\ & \text { NO } \xrightarrow{2} \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 06 | MTH $\qquad$ <br> YR $\qquad$ <br> YRS <br> AGO $\qquad$ | $\begin{aligned} & \text { BOY } 1 \\ & \text { GIRL } 2 \end{aligned}$ | $\begin{aligned} & \text { YES } 1: \\ & \text { NAME } \xrightarrow{\square} \\ & \text { NO } \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ | $54$ |
| 07 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { BOY } 1 \\ & \text { GIRL } 2 \end{aligned}$ | $\begin{aligned} & \text { YES } \quad 1 \\ & \text { NAME } \\ & \text { NO } 2 \end{aligned}$ |  | $\square$ $\square$ <br> 61 |



| 150. | 212. <br> In what month and year did your (first, second...) birth occur? <br> IF D.K., ASK HOW MANY YEARS AGO. | 213. <br> Was it <br> a boy <br> or <br> a girl? | 214. <br> Is this child still living? <br> IF YES: <br> What is (his/her) name? | 215. <br> IF DEAD: <br> For how long did the child live? |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 08 | MTH $\qquad$ <br> YR $\qquad$ <br> YRS <br> AGO $\qquad$ | $\begin{array}{ll} \text { BOY } & 1 \\ \text { GIRL } \end{array}$ | $\begin{aligned} & \text { YES } \frac{1}{\square} \\ & \text { NAME } \\ & \text { NO } 2 \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 09 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | BOY $\square$ <br> GIRL $\square$ 2 | YES <br> NAME $\qquad$ <br> NO <br> 2 <br> $\longrightarrow$ | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 10 | MTH $\qquad$ <br> YR $\qquad$ <br> YRS <br> AGO $\qquad$ | BOY $\square$ <br> GIRL $\square$ 2 | $\begin{aligned} & \text { YES } 1 \\ & \text { NAME } \\ & \text { NO } 2 \end{aligned}$ |  |  |
| 11 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | BOY $\square$ <br> GIRL $\square$ 2 |  | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 12 | $\qquad$ | BOY $\square$ <br> GIRL $\square$ 2 | YES $\square$ <br> NAME $\qquad$ <br> NO <br> 2 $\qquad$ |  |  |
| 13 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | $\begin{array}{ll} \text { BOY } & 1 \\ \text { GIRL } & 2 \end{array}$ | $\begin{aligned} & \text { YES } \frac{1}{\downarrow} \\ & \text { NAME } \\ & \text { NO } 2 \end{aligned}$ | MOS $\qquad$ <br> YRS $\qquad$ |  |
| 14 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | BOY $\square$ <br> GIRL 2 $\square$ | YES $\square$ <br> NAME <br> NO <br> 2 $\qquad$ |  | $42 \square$ |



| NO. | 212. <br> In what month and year did your (first, second...) birth occur? IF D.K., ASK HOW MANY YEARS AGO. | 218. <br> Was it <br> a boy <br> or <br> a girl? | 214. <br> Is this child still living? IF YES: What is (his/her) name? | 215. <br> IF DEAD: <br> For how long did the child live? |
| :---: | :---: | :---: | :---: | :---: |
| 15 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | BOY 1 <br> GIRL 2 | $\begin{aligned} & \text { YES } 1 \\ & \text { NAME } \downarrow \\ & \text { NO } 2 \end{aligned}$ |  |
| 16 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \end{aligned}$ | $\begin{array}{ll} \text { BOY } 1 \\ \text { GIRL } & 2 \\ \hline \end{array}$ | $\begin{aligned} & \text { YES } \square \\ & \text { NAME } \xrightarrow{\square} \\ & \text { NO } \square \longrightarrow \end{aligned}$ |  |
| 17 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { BOY } 1] \\ & \text { GIRL } 2 \end{aligned}$ | $\begin{aligned} & \text { YES } \square \\ & \text { NAME } \square \\ & \text { NO } 2 \end{aligned}$ |  |
| 18 | $\begin{aligned} & \text { MTH } \\ & \text { YR }- \\ & \text { YRS } \\ & \text { AGO } \\ & \hline \end{aligned}$ | $\begin{array}{ll} \text { BOY } & 1 \\ & \\ \text { GIRL } & 2 \\ \hline \end{array}$ | $\begin{aligned} & \text { YES } \quad 1 \\ & \text { NAME } \\ & \text { NO } 2 \longrightarrow \end{aligned}$ |  |


216. Did you feed $\qquad$ (NAME, OR "MOST RECENT CHILD") at the breast?
$\qquad$ NO 2
(SKIP TO 218)
217. For how many months did you breast feed?

## — (MONTHS) <br> STILL BREASTFEEDING 88

218. INTERVIEWER: TICK APPROPRIATE BOX (SEE 211).

ONE BIRTH 1
TWO OR MORE BIRTH 2
(SKIP TO 221)
(ASK 219)
219. And did you feed $\qquad$ (NAME, OR "SECOND TO LAST"
$C H I L D)$ at the breast?


NO 2]
(SKIP TO 221)
220. For how many months did you breast feed (him/her)?
(MONTHS) STILL BREASTFEEDING 88
221. Are you pregnant now?

224. INTERVIEWER: TICK APPROPRIATE BOX (SEE 211, 221).

NO REPORTED PREGNANCIES


ONE OR MORE PREGNANCIES 2

YES 1
NO 2
(SKIP TO 234)
227. How many times have you been pregnant?
(NUMBER)
228. How many such pregnancies have you had?
$\qquad$

OTRER PREGNANCIES

| NO． | 229. <br> In what month and year did your（first， second such．．．） pregnancy end？ | 280. <br> INTERVIEWER： IF D．K．TO 229 DETERMINE BEFORE， BETWEEN OR AFTER WHICH LIVE BIRTH［S］ THE EVENT OCCURRED | 231. <br> How many months did that pregnancy last？ | 232. <br> IF 7 OR MORE IN 231：Did the baby cry or show any other sign of life after it was born？ | 233. <br> IF Y晨S TO 232：Was the baby a boy or a girl？ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 01 | $\begin{aligned} & \mathrm{MTH} \longrightarrow \\ & \mathrm{YR} \longrightarrow \\ & \text { D.K. DG } \end{aligned}$ |  | 6 OR <br> LESS <br> 1 <br> 7 OR <br> MORE | YES <br> 1］ <br> NO $\square$ |  |  |
| 02 | MTH $\qquad$ YR $\qquad$ D．K． $\qquad$ |  | 6 OR <br> LESS <br> 1 <br> 7 OR <br> MORE $\qquad$ |  |  |  |
| 03 | MTH $\qquad$ YR $\qquad$ D．K． $\qquad$ |  | 6 OR <br> LESS <br> 1 <br> 7 OR <br> MORE $\qquad$ |  |  | $\begin{aligned} & \square \square \square \\ & \square 5 \\ & \square \square \\ & \square \square \square \end{aligned}$ |
| 04 | $\begin{aligned} & \text { MTH } \\ & \text { YR } \longrightarrow \\ & \text { D.K. Z马 } \end{aligned}$ |  | $\begin{array}{ll} \begin{array}{ll} 6 \text { OR } & \\ \text { LESS } & 1 \\ & \\ 7 \text { OR } & \\ \text { MORE } & 2 \longrightarrow \end{array} \end{array}$ |  |  | $\begin{aligned} & \square \square \square \\ & \square 4 \\ & \square \\ & \square \square \square \end{aligned}$ |
| 05 | $\begin{aligned} & \text { MTH } \longrightarrow \\ & \text { YR } \longrightarrow \\ & \text { D.K. Z马 } \end{aligned}$ |  | 6 OR <br> LESS <br> 1 <br> 7 OR <br> MORE $\qquad$ | YES $\square$ <br> 1 <br> NO $\square$ | BOY 1 <br> GIRL 1 2 |  |
| 06 | MTH $\qquad$ YR $\qquad$ D．K． $\qquad$ | － | 6 OR <br> LESS <br> 1 <br> 7 OR <br> MORE $\qquad$ |  |  |  |



INTER VIEWER: IF ANY YESES IN 232., CORRECT TOTAL IN 211.

INTERVIEWER: TICK APPROPRIATE BOXES IN 234. AND 235. BEFORE STARTING SECTION 3
234. RELIABILITY OF ANSWERS IN SECTION 2:
GOOD 1 FAIR 2 POOR 3
235. PRESENCE OF OTHERS AT THIS POINT (TICK ALL THAT APPLY):

301. Now I want to talk about a somewhat different topic. As you may know, there are various ways that a couple can delay the next pregnancy or avoid pregnancy. Do you know of, or have you heard of, any of these ways or methods?


NO 2
(SKIP TO INSTRUCTION ABOVE 304)
302. Which methods do you know of? $\qquad$
PROBE: Do you know of any others?
INTERVIEWER: RECORD ANSWER, AND THEN PROCEED TO TICK BOX(ES) IN COL. 1 CORRESPONDING TO THE METHOD(S) MENTIONED: FOR EACH METHOD SO TICK. ED, EXCEPT STERILIZATION, ASK:
303. Have you ever used (METHOD)?
(REFER TO METHOD IN SAME WORDS USED BY R IN 302. TICK RESPONSE IN COL. 3 CORRESPONDING TO THE PARTICULAR METHOD.)

NOW ASK 304.-314., IN TURN, SKIPPING THOSE METHODS TICKED IN COL. 1. PREFACE THE QUESTIONING WITH:

There are some other methods which you have not mentioned, and I would like to find out if you might have heard of them.

| COL. 1 | FOR THOSE WHO SAID | COL. 2 | COL. 3 |  |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { FROM } \\ 302 \end{gathered}$ | describe some methods to see if you have heard of them. | EVER HEARD OF | EVER USED |  |
| $\frac{[8}{\mathrm{PILL}}$ | 304. One way a woman can delay the next preg. nancy, or avoid getting pregnant, is to take a pill everyday. Have you ever heard of this method? (TICK RESPONSE IN COL. 2). IF NO, SKIP TO NEXT UNTICKED METHOD IN COL. 1. <br> 304. (a) IF YES: Have you ever used this method? <br> (TICK RESPONSE IN COL. 3) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $46$ |
| $\frac{3]}{\text { IUD }}$ | 305. A woman may have a loop or coil of plastic or metal, the intrauterine device (IUD), inserted in her womb by a doctor and left there. Have you ever heard of this method? ( $A S$ $A B O V E)$ <br> 305. (a) IF YES: Have you ever used this method? ( $A S A B O V E$ ) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $48$ |
|  | 305.1 A woman may have an injection in every one month, or three-month or six-month to prevent getting pregnant. Have you ever heard of this method? (IF NO, SKIP TO NEXT UNTICKED METHOD IN COL. 1) <br> 305.1 (a) IF YES: Have you ever used this method? ( $A S A B O V E$ ) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\frac{\square}{50}$ |
| $\begin{gathered} \boxed{3} \\ \text { OTHER } \\ \text { FEMALE } \\ \text { SCIEN- } \\ \text { TIFIC } \end{gathered}$ | 306. Women may also use other methods to avoid getting pregnant, such as placing a diaphragm or tampon or sponge in themselves before sex, or using foam tablets, or jelly or cream. Have you ever heard of any of these methods? <br> 306. (a) IF YES: Have you ever used any of these methods? ( $A S$ ABOVE) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \\ \hline \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\overline{52}$ |
| $\begin{gathered} 3 \\ \text { DOUCHE } \end{gathered}$ | 307. Some women wash themselves immediately after sex, with water or perhaps some other liquid. Have you ever heard of this method to avoid getting pregnant? <br> 307. (a) IF YES: Have you ever used this method? ( $A S A B O V E$ ) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\square \frac{\square}{54} \square$ |


| COL. 1 |  | COL. 2 | COL. 3 |  |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { FROM } \\ 302 \end{gathered}$ |  | EVER <br> HEARD OF | EVER USED |  |
| $\begin{gathered} 3 \\ \text { CONDOM } \end{gathered}$ | 308. There are also some methods men use so that their wives will not get pregnant. Some men wear a condom (e.g. Durey, rubber, safe, or prophylactic) during sex. Have you ever heard of this method? <br> 308. (a) IF YES: Did you and your husband ever use this method? | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ |  |
| $\begin{gathered} 3 \\ \text { RHYTHM } \end{gathered}$ | 309. Some couples avoid having sex on particular days of the month when the woman is most able to become pregnant. This is called the safe period or rhythm method. Have you ever heard of this method? <br> 309. (a) IF YES: Did you and your husband ever do this? | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \\ \hline \end{array}$ | $\square$ <br> 58 |
| $\begin{gathered} \frac{3}{3} \\ \text { WITH } \\ \text { DRAWAL } \end{gathered}$ | 310. Some men practise withdrawal, that is, they are careful and pull out before climax. Have you ever heard of this method? <br> 310. (a) IF YES: Did you and your husband ever use this method? | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\frac{\square}{60}$ |
| $\frac{3}{3}$ | 311. Another way is to go without sex for several months or longer to avoid getting pregnant. Have you ever heard of this method being used? <br> 311. (a) IF YES: Have you ever done this to avoid getting pregnant? | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ | $\square$ |
| FEMALE STERIL. | 312. Some women have an operation, called sterilization, such as having their tubes tied, in order not to have any more children. Have you ever heard of this method? (TICK RESthis method? (TICK RESPONSE IN COL. 2) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \end{array}$ |  | $\frac{\square}{64}$ |
| $\begin{gathered} \boxed{3} \\ \text { MALE } \end{gathered}$ STERIL. | 313. Some men have a sterilization operation, called vasectomy, so that their wife will not have more children. Have you ever hard of this method? (TICK RESPONSE IN COL. 2) | $\begin{array}{ll} \text { YES } & 1 \\ \text { NO } & 2 \\ \hline \end{array}$ |  | $\square$ |


| COL. 1 |  | COL. 2 | COL. 3 |
| :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { FROM } \\ 302 \end{gathered}$ |  | EVER <br> HEARD OF | $\begin{aligned} & \text { EVER } \\ & \text { USED } \end{aligned}$ |
|  | 314. Have you ever heard of any other methods which women or men use to avoid pregnancy? <br> IF YES: (SPECIFY) $\qquad$ <br> 314. (a) Did you or your husband ever use this method (AS SPECIFIED)? <br> First method $\qquad$ <br> Second method $\qquad$ <br> Third method $\qquad$ |  |   <br> YES 1 <br> NO 2 <br> YES 1 <br> NO 2 <br> YES 1 <br> NO 2 |

315. INTERVIEWER: TICK APPROPRIATE BOX

316. I want to make sure I have the correct information. Have you ever done anything or tried in any way to delay or avoid getting pregnant?


## SRGTRON $\frac{4}{8}$

## 

401. Now I have some questions about your married life. Are you now married, widowed, divorced or separated?

402. In what month and year were you and your husband married?
$\qquad$ (MONTH)
(YEAR)
403. Does your husband ordinarily live in your household?

404. Is he away only for the time being, or have you stopped living together for good?

AWAY FOR
STOPPED TIME BEING 1 FOR GOOD 2
406. In what month and year did you stop living together?

407. Have you been married more than once?

YES 1
NO. 2
(SKIP TO 413)

## $\square$ $\square \square$ <br> 20

408. How many times have you been married altogether?
(NUMBER OF TIMES)

INTERVIEWER: FOR EACH PAST MARRIAGE ASK 409.-412., THEN SKIP TO 413. (IF CURRENTLY MARRIED, THE NUMBER OF ENTRIES WILL BE ONE LESS THAN THE ANSWER TO 408.]

FORMER MAREIAGRS

| NO. | 409. <br> In what month and year did your (first, second ...) marriage begin? | 410. How did the marriage end? | 411. <br> IF DIVORCE OR SEPARATION: In what month and year did you stop living together? | 412. <br> IF DEATH: In what month and year did he die? |
| :---: | :---: | :---: | :---: | :---: |
| 1 | MTH <br> YR $\qquad$ | DEATH 1 <br> DIVORCE. 2 <br> SEPARATION 3 |  | $\begin{aligned} & \text { MTH } \\ & \text { YR } \\ & \hline \end{aligned}$ |
| 2 | MTH YR $\qquad$ | DEATH 1 <br> DIVORCE 2 <br> SEPARATION 3 |  | $\begin{aligned} & \text { MTH__ } \\ & \mathrm{YR} \\ & \hline \end{aligned}$ |
| 3 | MTH $\qquad$ <br> YR $\qquad$ | DEATH 1 <br> DIVORCE 2 <br> SEPARATION 3 | $\begin{aligned} & \mathrm{MTH} \longrightarrow \\ & \mathrm{YR} \longrightarrow \end{aligned}$ | $\begin{aligned} & \text { MTH } \\ & \text { YR } \end{aligned}$ |
| 4 | MTH $\qquad$ <br> YR $\qquad$ | DEATH 1 <br> DIVORCE 2 <br> SEPARATION 3 |  | $\begin{aligned} & \mathrm{MTH} \\ & \mathrm{YR} \\ & \hline \end{aligned}$ |

413. INTERVIEWER: TICK APPROPRIATE BOX:

PRESENCE OF OTHERS AT THIS POINT (TICK aLL THAT APPLY):
NO OTHERS
1
CHILDREN UNDER $10 \quad 2$
HUSBAND
8
OTHER MALES 16
OTHER FEMALES 4


## SECTION 5

FERTILTTY REGULATHON
501. INTERVIEWER: TICK APPROPRIATE BOX (SEE 401, 405)

502. INTERVIEWER: TICK APPROPRIATE BOX (SEE 221)

CURRENTLY
PREGINANT
(SKIP TO 519)

NOT CURRENTLY

HAS USED A
METHOD
D.K.

$\downarrow$
503. INTERVIEWER: TICK APPROPRIATE BOX (SEE 315, 316)

PREGNANT A CONTRACEPTIVE METHOD 2
(SKIP TO 509)
IVE


1

## HAS NEVER USED

504. Are you or your husband currently using a method to keep you from getting pregnant?


IF STERILIZATION MENTIONED IN 504

OR 505, PROBE: "You or your husband?"

HUSBAND 11 (SKIP TO 530)

```
WIFE 10
(SKIP TO 511)
```


## $\square$

 ? $+$ ,
509. As far as you know, is it physically possible for you and your husband to have a child, supposing you wanted one?
YES $[1$

(SKIP TO 513) $\quad$ NO | 2 |
| ---: |

## $\square$

510. Have you had an operation that makes it impossible for you to have any (more) children?

511. Has your husband had an operation that makes it impossible to have children'

YES. 1
(SKIP TO 530)
(SKIP TO 530)

## $\square$

(SKIP TO 530)
NO 2
(SKIP TO 530)
513. INTERVIEWER: TICK APPROPRIATE BOX (SEE 211)

NO LIVE BIRTH


ONE OR MORE LIVE BIRTHS 2
(SKIP TO 516)
514. Do you want to have any children?
YES $\quad \begin{aligned} & 1 \\ & \\ & \\ & \end{aligned}$
NO 2
UNDECIDED 3
(SKIP TO 521)
(SKIP TO 521)
(SKIP TO 521)
515. Would you prefer your first child to be a boy or a girl?

516. Do you want to have another child sometime?
YES 1

$\begin{array}{rr}\text { NO } & 2 \\ \text { (SKIP TO 521) }\end{array}$
UNDECIDED 3
(SKIP TO 521)
517. Would you prefer your next child to be a boy or a girl?

| BOY 1 |
| :---: |
| OTHER ANSWER GIRL 2 | (SPECIFY)

518. How many more children do you want to have?
(NUMBER)
OTHER

> (SKIP TO 521)
519. Do you want to have another child sometime, in addition to the one you are expecting?

| YES | 1 | NO 2 |
| :---: | :---: | :---: | :---: |
|  | (SKIP TO 521) | UNDECIDED |
| (SKIP TO 521) |  |  |

520. How many more children do you want to have, after the one you are expecting?

OTHER
(SPECIFY)
521. INTERVIEWER: TICK APPROPRIATE BOX (SEE 315, 316)

HAS USED A
CONTRACEPTIVE METHOD 1 (SKIP TO 530) CONTRACEPTIVE METHOD 21.

522. Do you think you and your husband may use any method at any time in the future so that you will not become pregnant?

| YES $[1]$ | NO 2 |
| :---: | ---: |
| (SKIP TO 530) | (SKIP TO 530) |

UNDECIDED 3 (SKIP TO 530)
523. INTERVIEWER: TICK APPROPRIATE BOX (SEE 221)
CURRENTLY
PREGNANT
(SKIP TO 530)

NOT GURRENTLY PREGNANT
D.K. WHETHER PREGNANT

3 (SKIP TO 526)
524. Have you had an operation that makes it impossible for you to have any (more) children?

YES 1
NO 2
(SKIP TO 526)
525. Was one purpose of that operation to prevent you having any (more) children?

$$
\text { YES } 1
$$

(SKIP TO 530)
NO
(SKIP TO 530 )
526. INTERVIEWER: TICK APPROPRIATE BOX (SEE 315, 316)

- has USED A CONTRACEPTIVE METHOD $\frac{\square}{\downarrow}$

HAS NEVER USED A CONTRACEPTIVE METHOD 2 (SKIP TO 530)
527. INTERVIEWER: TICK APPROPRIATE BOX (SEE 211)

529. What was the last method you used so that you would not become pregnant?
530. If you could choose exactly the number of children to have in your whole life, how many children would that be?
$\qquad$ OTHER
(SPECIFY)

## SECTION 6 <br> WORK HISTORY

601. As you know, many women work - I mean aside from doing their own housework. Some take up jobs for which they are paid in cash or kind. Others sell things, or have a small business, or work on the family farm. Are you doing any such work at the present time?
602. Have you ever worked since the day when you were first married?
YES 1
NO 2
(SKIP TO 613)
603. Since what year have you not been working? $\qquad$

604. I would like to ask some questions about (your present work, the last work you did). What (is, was) your occupation - that is, what kind of work (do, did) you do?
$\qquad$
16
605. INTERVIEWER: TICK APPROPRIATE BOX

606. (Is, was) that your own enterprise?

607. (Do, did) you work mostly at home or (do, did) yo work mostly away from home in that job?

HOME 1
608. (Are, were) you employed by some member of your family, or by someone else, or (are, were) you self-employed?

609. (Do, did) you get paid mostly in cash or mostly in kind?

610. About how many years in all have you worked since you first were married?

AWAY 2
611. INTERVIEWER: TICK APPROPRIATE BOX (SEE 211)

(a) Did you work between your marriage and your first birst?
[1] YES
[2] NO
(b) Did you work between the births of your first child and the second child?
(1) YES
[2] NO
(c) Did you work between the births of your second child and the third child?
(1) YES
2 NO
(d) Did you work between the births of your third child and the fourth child?
1 YES
(2) NO
(e) Did you work between the births of your fourth child and the fifth child?

1 YES 2 NO
(f) Did you work between the births of your fifth child and the sixth child?
(1) YES
[2] NO
(g) Did you work between the births of your sixth child and the seven child?

1 YES
(2) NO
612. Have you worked since your last birth?

1 YES 2 NO
613. Now let us go back to the tine before you were first married: Did you do any work during the 12 months before you were first married?


## INTERVIEWER: 614.-617. REFERS TO THE LAST JOB THAT YOU DID

 BEFORE YOU FIRST WERE MARRIED.614. For how many years altogether did you work?
(YEARS)
615. What kind of work did you do mainly?

SPECIFY $\qquad$
616. Were you employed by some member of your family, or by someone else, or were you self-employed?


SOMEONE
ELSE
SELFEMPLOYED 3 (SKIP TO 701)
617. Did you get paid mostly in cash or mostly in kind?
CASH $1 \quad$ KIND 2 UNPAID 3
701. INTERVIEWER: TICK APPROPRIATE BOX (SEE 402, 407)

703. What was the highest level of school your (present, last) husband completed? Specify $\qquad$ If never been in school or less than grade 4
704. Can he read or write?

| Read | Write |
| :--- | :--- |
| 1 YES | $\boxed{1}$ |
| YES |  |
| 2 NO | 2 |
| NO |  |

705. In what kind of area did your (present, last) husband live mostly when he was growing up, say to age 12 ? Was it in the rural or in a municipal area?
```
RURAL 1 MUNICIPAL AREA 2 Specify
```

706. Now I have some questions about your (present, last) husband's work experience. What (is, was) his occupation - that is, what kind of work (does, did) he do? (IF UNEMPLOYED OR RETIRED, ASK LATEST OCCUPATION)
$\qquad$
$\qquad$
(IF NEVER WORKED, END INTERVIEW)
707. (Is, was) he employed by some member of his family, or by someone else, or (is, was) he self-employed?


SELF-
EMPLOYED
[3] (SKIP TO 709)
708. (Does, did) he get paid mostly in cash or mostly in kind?

CASH 1 KIND 2 UNPAID 3
(END INTERVIEW) (END INTERVIEW) (END INTERVIEW)
709. (Does, did) he have any regular paid employees in his business?

YES 1
NO 2
(END INTERVIEW)
710. How many regular paid employees (does, did) he have?
(NUMBER)
(END INTER VIEW)

## INTERVIEWER'S ORSERVATIONS

(TO BE FILIED IN AFTER COMPLETING INTERVIEW)

| DEGREE OF CO-OPERATION: | BAD | 1 |
| :--- | :--- | :--- |
|  | AVERAGE | 2 |
|  | GOOD | 3 |
|  | VERY GOOD |  |

## INTERVIEWER'S COMMENTS:

Person interviewed: $\qquad$
$\qquad$

Specific Questions: $\qquad$
$\qquad$

Other aspects: $\qquad$
$\qquad$
$\qquad$
Name of Interviewer:
Date: $\qquad$
******れ************************************************************************

SUPERVISOR'S OBSERVATIONS
$\qquad$
$\qquad$
$\qquad$
$\qquad$

EDITOR'S OBSERVATIONS
$\qquad$
$\qquad$
$\qquad$
$\qquad$

## COMMUNHTY LEVRL SURVEV

A. LOCATION OF THE VILLAGE

1. distance from the nearest important district $\qquad$
2. distance from the nearest provincial center $\qquad$
3. distance from the nearest railway station $\qquad$
4. distance from the nearest highway

## B. TRAVEL AND TRANSPORTATION

5. important transportation systems within a radius of 5 kilometers $\qquad$
6. important transportation systems to the nearest important district $\qquad$
7. important transportation systems to the nearest provincial center $\qquad$
8. fare to the nearest important district $\qquad$
9. fare to the nearest provincial center $\qquad$
10. length of time to the nearest important district $\qquad$
11. length of time to the nearest provincial center $\qquad$
12. means of transportation for agricultural products $\qquad$
13. accessibility during rainy season
C. AVAILABILITY of certain institutions in the village and accessibility to these INSTITUTIONS
14. lower primary school (grades 1-4) $\qquad$
15. upper primary school (grades 5-7) $\qquad$
16. secondary school
17. temple
18. grocery store
19. first class health center
20. second class health center $\qquad$
21. midwifery $\qquad$
22. hospital
23. market for selling agricultural products only
24. private company for selling agricultural products
25. rice mill
26. factory
$\qquad$
27. agricultural enterprise which hires workers $\qquad$
D. AGRICULTURAL CONDITION
28. main crop
29. crop in summer
30. water buffaloes
31. pigs
32. livestock
33. ducks $\qquad$
34. chickens
35. other (specify)
36. soil condition
37. average size of land holding
38. proportion of farmers who rent the land for cultivation
39. buying and selling land for industrial usage $\qquad$
40. inheritance pattern in general
41. pattern of land inheritance
42. land that can be obtained in the vicinity
43. the price of the land $\qquad$
E. AGRICULTURAL DEVELOPMENT
44. irrigation project in the planning stage for the village $\qquad$
45. availability of the irrigation system for the farm in the village $\qquad$
46. the use of mechanical equipment for farming
47. the use of fertilizer for farming

## F. LABOR MARKET

48. proportion of hired farm workers
49. proportion of young men work outside the village

## G. MIGRATION

50. changes of village size in the past ten years.

## H. FREQUENCIES OF CONTACTS WITH OTHER ORGANIZATIONS

51. agricultural officers $\qquad$
52. medical doctors
53. public health officers
54. community development officers $\qquad$
55. family health workers
56. mobile pharmaceutical sales teams
57. sales workers (agricultural products only i.e. fertilizer)
58. other (specify) $\qquad$
I. ACCESSIBILITY TO MASS MEDIA
59. availability of electricity in the village
60. radio
61. newspaper ${ }^{3}$
62. television
63. information from the government

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Niyom Purakum Nantit Supamongkol Pensri Suwanasing

Data Processing Center of Thailand

Thavisakdi Thungsuphanich Nualnart Thamrongnavasavat Nuahart Thamrongnavasavat

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Dir

Director
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Field Operation Division
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Thip Chalothorn

Amnueydech Intarapan
Bamrung Boonsawang
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Charas Maneechoti
Charoen Phuangphet
Chattha Chochai
Decha Satthaphol
Jakkrapong Paratanawong
Kachorn Thepvatcharagaroon
Khanan Koedpuan
Kiet Changphet
Mansuang Sayumpuvatanon
Naris Thanakoomcheep
Nipan Cholavit
Opas Rong-ngoen
Pallop Sirichan
Phisal Khampabun
Phuttaporn Juwong
Pinit Charoenphanich
Pinit Khuannakom
Pornsak Phetnasungkul
Pradit Suansook
Pramon Sathaphorn

Prapan Thongkampleo
Prapon Lekavarathon
Pravit Srivilai
Ruchai Vanarat
Sakchai Kanchanawan
Seree Laitrakul
Sermwut Nakapradit
Sombat Prakotphol
Somchai Anavatkul
Suksit Ruchochai
Suraphan Boonyamanop
Suthep Viparavanich
Suvit Chirapongsapan
Thammanoon Sungkasmanee
Thavat Ruanmai
Thavat Tharaphong
Thavatchai Sisimma
Vasun Kookietkul
Vichit Thongsiritham
Vilas Suwee
Visid Chuntarasingha
Vorapol Ta-pong
Yathip Nakapradit
A-nan Ruanghiran
A-numat Varava
Abdul Chaturat
Abdul maman Hanafee
Amnoeu Vongsupa
Amnuay Uthaisann
Ananta Yutawee
Anucha Punroen
Anuvat Keosai
Aran Charndej
Boonjing Piyapanan
Boontom Poottiwong
Buncha Niyamkool
Bunhloe Srisamang
Chad Chuakratok
Chaiyasit Poengai
Chalong Kietthavornnan
Chamlong Chittarom
Dilok Sirikul
Kanok Poonphol
Khwanchai Kulanuwati
Kitti Bupsiri
Kokiet Sooktharanon
Krongchit Varanakrang
Manas Limpakanakom
Mongkol Naknan
Nimit Matputhorn
Nipon Hanvanich
Paisarn Thongdeethae
Pichai Mahadej
Pimon Poengton
Piroj Khaosawang
Ploeng Nasom
Pongsak Sansaena

Poramat Borihom
Pradit Vivattanaprasit
Prakob Maudkornburee
Prapas Cheenchob
Prasit Arsananan
Prasit Chawati
Prasit Pingsmoeng
Prasit Pitsachati
Prasoet Suebpradit
Preecha Supaoat
Pum Tokhon
Saeng Soisuvarana
Saeree Ramkamthong
Salsern Vorapimok
Samart Choovaree
Sanan Intarasit
Sanit Chantaravong
Sanoh Topoo
Sathaporn Orarigchati
Sathian Srisuket
Sathit Charoensuk
Sathit Hangla
Sawai Namvong
Somboon Roedrit
Somchai Intarat
Sompong Veobootr
Somporn Bootta
Somsak Chulananta
Somsak Pinhom
Soo Kesachati
Soung Promtha
Sudsakorn Naksunthorn
Sukhon Suvarnahong
Sumol Vorachet

## Enumerators (continued)

Sumrong Udomrat
Sumroeng Thirakoon-panich
Sunan Sungsuwan
Sunan Veerakui
Supap Kotr-bantao
Surachai A-nanratarasak
Surachai Nimpanich
Surached Buoklee
Surasak Sriurai
Surin Phoepai
Suthat Keolao
Suthee Lim-opas
Suthin Urapirom
Suvichai Anurak

Thavatchai Choknat
Thawee Lamun
Thep Rittiwong
Udom Binkoew
Udom Muennoo
Udom Prompim
Vallop Chadnoeng
Veerasak Lamsamut
Veerasak Vongdasai
Vichian Polosilpa
Vithaya Phoengtoen
Vithool Supopak
Vong Poungwatana
Winai Rujichip

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Suraphun Petcharapha
Surasak Siriphibulsin

Krirksuk Boonyaphong
Krongkaew Siripol
Laddawan Rawdmanee Lursun Chuthep
Malinee Puatham
Montienthong Amornsiriwattanakul
Nangnoi Nadesrithong
Niphon Vade-a-luar

| Pawin Jiramongkulchai | Suda Lertussavawiwat |
| :--- | :--- |
| Phanphilai Kitsutsaeng | Sunee Phongsuwan |
| Phongsuk Uttayasaiphisut | Suphaporn Phutisarnsichot |
| Pittaya Junthaveekul | Suphunnee Temtriwet |
| Pleonphit N. Lampang | Surasuk Siriphaiboon |
| Pleonphit Vibulsukkha | Suwimol Lukkanakul |
| Poonsri Siripathanasuksakul | Tassanee Dusitsuttirut |
| Pornthip Ruangnue | Thareesawas Sukhantharut |
| Pracha Terat | Udomporn Inthaphun |
| Rungruang Ngawngamruk | Udomsuk Noppakhun |
| Saengrawee Indranan | Vassana Vuttipluk |
| Saengrawee Preedaporn | Vatcharee Itti-ar-vatkul |
| Siriporn Auarvirojnungkul | Veena Phunturat |
| Siriwan Siriboon | Vilailuk Hansuttisunthorn |
| Sirinrat Klungboonklong | Virawan Tri-chaiyaporn |
| Sompit Phusuwan | Voraphat Thiewtanom |
| Sophon Ariyakul | Wisuttiphong Songsiri |
| Somchart Jesrichai | Yapparat Thamnitchakul |
| Suchin Jittapot |  |


[^0]:    Source: Central Statistical Office, 1960 Population Census, Whole Kingdom, Bangkok, 1962; National Statistical Office, 1970 Population and Housing Census, Whole Kingdom, Bangkok 1973; National Statistical Office, National Economic and Social Development Board and Institute of Population Studies, Chulalongkorn University, "Regional Population Projections for Thailand, 1970-1985", Bangkok, September, 1975, (mimeographed).

    1/ Excluding Bangkok Metropolis
    2/ Estimated mid-year population

[^1]:    1. A more detailed description of the sample design is given in Appendix I.
[^2]:    4. Excluding women who were sterilized or otherwise infecund.

    5/ All eligible women were asked about non-contraceptive sterilization but only currently married women were asked to report infecundity for other reasons.

[^3]:    Group 0: Tables from the household schedule
    Group 1: Nuptiality and exposure to childbearing
    Group 2: Fertility
    Group 3: Preferences for number and sex of children
    Group 4: Knowledge and use of contraception
    Group 5: Use of contraception as related to fertility

    1 Guidelines for the Country Report No. 1 (WFS Publication WFS/ TECH. 225)

[^4]:    2/ The sample inflated as described in Section 2.1.
    3/ See Appendix I; the weights do not differ greatly from unity.
    4/ See Table 0.1.1, Volume II.

[^5]:    Source: Tables 1.4.2A-D
    1/ Excluding Bangkok Metropolis
    2/ Currently married women in matched couples

[^6]:    5/ The results are comparable to those of the 1970 Census, which reported the difference in the median age at marriage as about 3 years.

[^7]:    1 Husband's age minus wife's age
    2/ Excluding Bangkok Metropolis

[^8]:    6) The 1970 Census showed the median age of marriage as 21 years.
[^9]:    Source: 1970, National Statistical Office, 1970 Population and Housing Census, Whole Kingdom, National Statistical Office of the Prime Minister, Bangkok, 1978.

[^10]:    9/ See, for example, Institute of Population Studies (ed.), The Potharam Study (2nd edition) Research Report No. 4, Bangkok, 1971); Donald O. Cowgill and others, Family Planning in Bangkhen Thailand (Bangkok: Center for Population and Social Research, Mahidol University, 1969); Gavin Jones and J. Rachapaetayakom, Fertility and Contraception in the Rural North of. Thailand (Bangkok: National Economic Development Board, 1970); Gavin Jones and Yanee Soonthornthum, Fertility and Contraception in the Rural South of Thailand (Bangkok: National Economic Development Board, 1972); John Knodel and Pichit Pitaktepsombati, "Thailand: Fertility and Family Planning Among Rural and Urban Women", Studies in Family Planning, Vol. 4 (September, 1973), pp. 229-255; John Knodel and Visid Prachuabmoh, The Fertility of Thai Women (Research Report No. 10 of the Institute of Population Studies, Chulalongkorn University, Bangkok, Thailand, 1973); National Statistical Office, Report on the Survey of Population Change 1964-1965.

[^11]:    10/ Sidney Goldstein The Demography of Bangkok: A Case Study of Differentials Between Big Cities and Rural Populations (Research Report No. 7, Institute of Population Studies, Chulalongkorn University, Bangkok, 1972), pp. 17-18.
    11/ Knodel and Prachuabmoh, op.cit., pp. 8-14.

[^12]:    14. Nibhon Debavalya, "A Study of Female Labor Force Participation and Fertility in Thailand," (Unpublished Ph.D. Dissertation, University of Pennsylvania, 1975), pp. 229.
    15/ Debavalya, op.cil., pp. 145-156.
    16/ Sidney Goldstein, The Influence of Labour Force Participation and Education on Fertility in Thailand", Population Studies, Volume 26 (November, 1972), pp. 410-436.
[^13]:    21/ John Knodel and Visid Prachuabmoh, Desired Family Size in Thailand: Are the Responses Meaningful? (Paper No. 18 of the Institute of Population Studies, Chulalongkorn University, Bangkok, 1974), pp. 633-636.

[^14]:    22/See Section 3.2.1(2). Problems encountered in the pretest are mentioned in Section 2.7.1, "Results of the pretest".

[^15]:    Number of Respondents
    $\begin{array}{llll}\text { Advantages of large families } & 2,960 & 342 & 2,618\end{array}$
    $\begin{array}{lll}\text { Disadvantages of small families } & 2,950 & 341\end{array}$

[^16]:    Source: Tables 6.4.1-6.4.2

[^17]:    Source: Tables 6.4.1 - 6.6.1

[^18]:    26/ Though the results of SOFT and the Longitudinal Study are not strictly comparable due to methodological differences, and some wives may have heard of a method through presence at the earlier husband's interview, the basic indication is that the official family planning program had brought widespread awareness of contraception.

[^19]:    Source: Table 4.3.2

[^20]:    27. The Northeast is characterized by above average levels of education, of knowledge of contraceptive methods and of fertility.
[^21]:    Source: Table 4.1.2

    1. Including only women with at least two live births or one live birth and currently pregnant whose last closed interval did not exceed five years.
[^22]:    Source: Table 5.2.3

[^23]:    * a varied between 2 and 4 for all strata. Actually the SPC sample of Changwat is derived from an earlier sample for the Labor Force Survey, which had 40 Changwats selected according to equation (1). Five Changwats from 5. strata were dropped at random to get 35 Changwats for the SPC. The first stage of sampling was introduced to limit the number of Changwat Statistical Offices which would be involved in the survey.

[^24]:    * ROH values less than .005 .

[^25]:    * See Kish et al., 'Sampling Errors for Fertility Surveys', WFS Occasional Papers, No. 17, January 1976, p. 22. This simple relationship applies to cross-classes (i.e. subclasses well distributed across sample areas), and assumes approximate balancing of over-estimation by $\mathrm{ROH}_{s}\left(1-\mathrm{M}_{\mathrm{s}}\right)$ with underestimation because $\mathrm{ROH}_{\mathrm{s}}$ tends to be larger than $\mathrm{ROH}_{\mathrm{t}} \mathrm{s}^{\text {s }}$

[^26]:    * Cross-classes are subgroups of the sample which are more or less well distributed across sample clusters; examples are particular age groups, groups by parity, groups having particular fertility preferences, or other attitudes, etc.

[^27]:    * No simple methods can be given for extrapolation to estimations of means not covered in Table A5.

