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Illustrative Analysis: Family Structure and Fertility

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The World Fertility Survey is an international research programme whose purpose is to assess the current state of human fertility throughout the world. This is being done principally through promoting and supporting nationally representative, internationally comparable, and scientifically designed and conducted sample surveys of fertility behaviour in as many countries as possible.
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Illustrative Analysis: Family Structure and Fertility

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Preface

One of the main concerns of the World Fertility Survey has been the analysis of the data collected by the participating countries. It was decided at the outset that, in order to obtain quickly some basic results on a comparable basis, each country would produce soon after the field work a First Country Report, consisting of a large number of cross-tabulations with a short accompanying text. Precise guidelines for the preparation of the tables were produced and made available to the participating countries.

It was also recognized, however, that at later stages many countries would wish to study in greater depth some of the topics covered in their first reports, or indeed new but related subjects, using more refined analytic techniques. In order to assist the countries at this stage a general 'Strategy for the Analysis of WFS Data' was outlined, a series of Technical Bulletins was started, dealing with specific methodological issues arising in the analysis, and a list of 'Selected Topics for Further Analysis of WFS Data' was prepared, to serve as a basis for selecting research topics and assigning priorities.

It soon became evident that many of the participating countries would require assistance and more detailed guidelines for further analysis of their data. Acting upon a recommendation of its Programme Steering Committee, the WFS then launched the present series of 'Illustrative Analyses' of selected topics. The main purpose of the series is to illustrate the application of certain demographic and statistical techniques in the analysis of WFS data, thereby encouraging other researchers and other countries to undertake similar work.

In view of the potentially large number of research topics which could be undertaken, some selection was necessary. After consultation with the participating countries, 12 subjects which are believed to be of top priority and of considerable interest to the countries themselves were selected. The topics chosen for the series span the areas of fertility estimation, levels, trends and determinants, marital formation and dissolution, breastfeeding, sterilization, contraceptive use, fertility preferences, family structure and infant and child mortality.

It was envisaged that each study would include a brief literature review summarizing important developments in the subject studied, a clear statement of the substantive and methodological approach adopted in the analysis, and a detailed illustration of the application of such an approach to the data from one of the participating countries, but with emphasis on the general applicability of the analysis. These studies have been conducted in close collaboration with the country concerned, where possible with the active participation of national staff.

It should perhaps be emphasized that the studies in the 'Illustrative Analyses' series are meant to be didactic examples rather than prescriptive models of research, and should therefore not be viewed as cookbook recipes to be followed indiscriminately. In many cases the investigators have had to choose a particular course of action from several possible, sometimes equally sound, approaches. In some instances this choice has been made more difficult by the fact that demographers or statisticians disagree among themselves as to the approach most appropriate for a particular problem. In the present series we have, quite intentionally, resisted the temptation to enter the ongoing debates on all issues. Instead, and in view of the urgency with which countries require guidelines for analysis, an attempt has been made to present what we believe to be a basically sound approach to each problem, spelling out clearly its drawbacks and limitations.

In this difficult task the WFS has been aided by an *ad hoc* advisory committee established in consultation with the International Union for the Scientific Study of Population (IUSSP) and consisting of Ansley Coale (Chairman), Mercedes Concepción, Gwendolyn Johnson-Acsádi and Henri Leridon, to whom we express our gratitude. Thanks are also due to the referees who have generously donated their time to review the manuscripts and to the consultants who have contributed to the series.

Many members of the WFS staff made valuable contributions to this project, which was co-ordinated by V.C. Chidambaram and Germán Rodríguez.

HALVOR GILLE
Project Director

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1 Purpose and Nature of the Study

1.1 INTRODUCTION

The purposes of this illustrative analysis are:

1 To discuss some of the issues involved in the study of fertility as related to family or household structure;
2 To present the problems and techniques involved in using World Fertility Survey (WFS) data for this purpose;
3 To present illustrative findings using WFS data with respect to two different countries.

For this purpose, the two countries chosen were Sri Lanka and Bangladesh, which, even though both are in south Asia, have considerable cultural differences from each other and also an appreciable degree of intra-country diversity. Some additional countries were also considered for use in the study, but the data for those which might have proved most interesting were not yet available.

The fact that WFS has used large, well-designed samples in each of the countries surveyed, coupled with its use of a carefully designed and intensive core questionnaire which includes basic questions on nuptiality, fertility, family size preference and fertility regulation, has made it possible to obtain data of generally good quality which lend themselves both to thorough intra-country analysis and also to comparative analyses between cultures and between countries.

The additional existence in WFS of a household schedule which is uniform from one country to another in its reporting of sex, age, marital status and relationship-to-head of each member of the households covered by the survey, and which for several countries also includes details on housing and household assets, has also made possible the analysis of household or family structure. It may be also used for the investigation of the relationship between family structure and fertility though with considerable limitations as will be shown in this study.

1.2 NATURE OF THE PROBLEM

The influence of household or family structure on fertility has become a subject of considerable interest and speculation among sociologists and demographers. Some theoretical formulations of the relationship between family type and fertility appeared in the 1950s, particularly in the work of Lorimer (1954) and Davis (1955). Lorimer has provided a number of examples to show that the societies with corporate unilineal kinship structure have a strong cultural propensity for high fertility. The 'extended or joint family, or any close-knit group of families, provides strong economic and social support for parenthood' (Lorimer 1954: 201). This may not be, however, universal. Although, according to Lorimer, in most agrarian societies under premodern conditions extended families had a tendency to promote high fertility, such families 'do not necessarily stimulate high fertility if disassociated from emphasis on competitive relations or shared values that require high fertility' (Lorimer 1954: 247).

Following Notestein (1945, 1953) Davis explained high fertility in the developing societies by the necessity to match their higher mortality and thus secure survival. To do so, the societies 'evolved an institutional structure having an incentive system strong enough to induce their people to reproduce abundantly' (Davis 1955: 33). Even after mortality had dropped in the recent past, the social organization, 'supported by time-honored agrarian conditions', retained many of its mechanisms for inducing high fertility levels. As the main social unit responsible for fertility is the family, 'it is through the relations of the nuclear family to the rest of the society, then, that one can expect to find the social factors controlling the level of fertility' (Davis 1955: 34). As the nuclear family is subordinated to and incorporated in wider kinship groups, abundant reproduction is made possible because

1 the economic cost of rearing children and the inconvenience of childcare do not fall directly on the parents alone but are shared with other relatives in the household;
2 marriage occurs early because it is not necessary for the husband to be able to support a wife and family; there are also social, moral and religious reasons for which parents want their children to marry early (Nag 1975);
3 the young wife is strongly motivated to have children as soon as possible. With the prevailing rule of patrilocal residence, childbearing and particularly having male offspring raises the status and position of the young wife in the extended family. Similarly, the young husband has a strong motivation for having many children; sons in particular, perpetuate his line and provide security in old age.

Both Lorimer and Davis appear to have sought explanation of fertility differentials between societies rather than at individual family level. An empirical examination of their theoretical propositions was first attempted by Nag (1975) at societal level although several attempts using individual family as the unit of investigation go back to the early 1960s.

Nag (1975) examined evidence from 41 non-industrial societies in which modern contraceptives are not used at all or only rarely, and in which he could identify the prevalence of a given family type.[1] Taking society as the

[1] The societies were taken from the Murdock's (1962–6) *Ethnographic Atlas*. The identification of societies in which the extended family was considered as ideal was based not only on a quantitative representation of such a family type in the society but also on ethnographic investigation regarding behaviour, attitudes and values.

unit of investigation, the data did not support the hypothesis that the extended family was associated with higher fertility than the nuclear family. However, because the sample was a very small one and the ethnographic data used were, for some societies, ambiguous, Nag warned that the result 'should not be taken as convincing evidence for the rejection of the proposition of Lorimer and Davis regarding family type and fertility' (Nag 1975: 31).

The differences in fertility between families of various types were examined in a large number of studies relating to developing countries in Asia, taking family as the unit of analysis. A selected bibliography of such studies is included in References and Bibliography section on p 54; these studies are based on data from India, Pakistan, Taiwan, Bangladesh, Korea, West Malaysia, Tunisia and Mexico, and other parts of the world. On balance, the evidence is ambiguous; most of the studies show no significant difference between fertility of the nuclear and extended families, or a slightly higher fertility in the former type. Admittedly, most of those studies were far from adequate to test not only the theoretical propositions mentioned earlier but also those to which they were addressed, because of the nature of the data they used.

1.3 TERMINOLOGY

The terms family structure and household structure are used interchangeably in this analysis. Defining a family and defining a household present exactly the same problem. Both are usually defined by residence, ignoring the possibility that non-residential relatives may continuously exert a powerful influence on the group who live together. The household, but not the family, may include, in addition, non-relatives such as servants and lodgers, though these did not figure significantly in the Sri Lanka and Bangladesh households studied in this analysis.

The terminology most frequently employed to describe the family is still based on that which was put forward over a century ago by Le Play. A nuclear family consists of only a married couple and their children; a stem family contains in addition the parents of one of the couple; a joint family is made up of married couples of the same generation, usually linked by the husbands being brothers. Where there is more than one married couple in a generation but there is in addition a couple from the older generation, we can describe the family as joint-stem where any of these families have other related persons living with them; we can regard the whole complex group as being an extended version of one of the other types. However, we also need a term to describe all families that are not nuclear families, and, where this simple dichotomy is being made, we will employ the term extended, largely on the ground of past practice.

In practice these definitions are not easy to employ. For instance, if one of the older married partners in a stem family should die, do we then have a newly constituted extended nuclear family or do we have an eroded or incomplete stem family? In terms of the influence on fertility, a case can be put for either viewpoint. Furthermore, does it make any difference to family structure or to family behaviour if such an incomplete stem family has been formed by the survivor from the oldest generation remaining in a stem family of which she (or, more rarely, he) has always been part, or by the survivor returning to the household of a married child only after widowhood? Almost certainly households appearing identical in censuses or surveys, but formed in these two different ways, are very different in their economic, social, emotional and power structures.

1.4 WHAT FERTILITY EFFECTS MIGHT WE ANTICIPATE?

We should try to come to our own conclusions as to why any relationship might be anticipated between family structure and family. Perhaps the most fundamental problem is whether one should anticipate fertility differentials between families with different structures in a single society or between societies characterized by different family structures. The predominant – or perhaps the ideal but not numerically predominant – form of family in a society may well influence most families in that society even more than the structure of the individual family. Indeed, a family may be of one structure rather than the ideal type because of accidents of mortality, sub-fecundity or migration, or as the result of temporary circumstances.

We should also note that the forms of marriage tend to differ considerably between societies. In the two countries whose data we shall examine here, only one, Bangladesh, has an appreciable number of polygamous marriages, but even in Bangladesh they are too few to make a detailed comparison with monogamous marriages and certainly too few to subdivide further into nuclear-stem-joint classifications. In some African societies a more detailed treatment of polygamous marriages might be possible. Nor can we deal here with consensual unions which are common in some Latin American societies and which are also becoming frequent in some Western societies.

Within any single society, if fertility behaviour is a reaction to economic or social pressures and supports, then fertility may well differ between the various family types according to variations in those pressures and supports. In the larger family children may be supported by a greater range of people than their biological parents, with a resulting tendency against the restriction of fertility. Conversely, if they are an economic value to their parents, that may be more diffuse, thus blunting any drive for maximum fertility. The larger family may have a totally different social structure. In some situations the husband may possibly be less close than in the nuclear family to his wife or children, and less involved in maximizing their welfare or reducing their work loads. It may also mean that he is insufficiently close to his wife to allow joint fertility decisions. More generally, the whole decision-making system may be different in a large family from the situation in a nuclear one and more people may be involved.

It is not merely a problem of size. If it were, we could carry out our analysis solely in terms of family numbers and ignore other complexities. The peculiarly close relationship that can come into existence between husband and wife and between parents and children in the nuclear family is less likely to be found if there are others present. However, the presence of the husband's unmarried brothers is likely to be much less decisive than the presence of other married couples with their own behavioural patterns

to defend and with a stake in how the much more complex family works. There is, then, a case for carrying out analysis in terms of married couples, or even of currently married women; the latter proviso is made because currently married women living at any given time without a husband in the household may still represent a viable marriage even though an emigrant husband may be absent for long periods.

At the same time, we cannot analyse solely in terms of the number of married couples because a man and his wife are less likely to be influenced by the presence of his married brother and wife than by his parents, especially in a society where the older woman is supposed to supervise the behaviour of her daughter-in-law. Indeed, in such societies the presence of the mother-in-law may be of importance even if her own marriage is no longer intact, and the presence of one surviving parent from the older generation may have quite a different impact if it is the female parent than if it is the male parent. In any case, we must distinguish between married couples of the same generation (as in the joint family). This is sometimes described as the contrast between the horizontal and the vertical family.

Much may turn on the nature and locus of decision-making. In nuclear families the chief participants in decision-making are usually the husband and wife even in societies where the husband may have much the greater influence in the process. This is frequently not the case in more complex families. Where matters concern men, the decision may be made by all men or perhaps almost exclusively by the oldest of them. Other matters might be in the women's province but the young married woman might have relatively little say even over such matters as to whether she can defer the birth of the next child. Frequently the locus of decision-making is in a generation older than the generation currently becoming new parents, and hence fertility survey questions about contraceptive intent aimed only at the younger generation may present only a partial and perhaps a biased picture. Decision-making may be exercised by the older generation even if their residence is separate. However, there may well be other potent factors, such as wage earning by the male of the younger generation, which may cause a change in the balance of decision-making whether the family is co-residential or not. Wage earning by the young wife may have an even more decisive impact. This means that family structure cannot be related to fertility decision-making without taking many of the characteristics of the family into account, one of the most important matters being the family's economic structure.

When discussing the locus of decision-making with regard to fertility control, one point is of great importance. That is that fertility control decisions can be negative as well as positive. The opposition of the older generation, even when it is unsaid and only implied and even when it means continuity with the past rather than a break, may be just as much a decision as is support for contraceptive innovation.

It may be seen from the foregoing that the factors affecting family structure or its relation to fertility and the use of contraception are far too complex to be discussed in a few pages. Nevertheless, it may be well to recognize briefly the following additional causal factors:

1 *Marriage duration.* The tendency in many countries is for the young bride to be taken into the groom's home at the beginning of marriage, while later in marriage the couple may set up a home of their own. Sometimes the couple may set up a home of their own primarily because they have had too many children to have enough room to remain, in which case we may view the family structure to be the result rather than the cause of their fertility.[2] In cases where they remain in the parent's home, their increased age and status will have made the couple more independent of parental influence. In any event, a 'life cycle' factor is in operation.

2 *Late marriage.* The older the couple, or particularly the older the bride, at time of marriage, the greater the couple's financial and emotional maturity the less the likelihood of living in the parents' home even to start with – a different form of life cycle operation.

3 *Old age or widowhood.* Sometimes after years of separate residence the parents, or at least one widowed parent, often in need of a home or support, will move into the home of the younger couple, still another life cycle phenomenon. In such a case the elder parent or parents can be expected to exert less influence on the couple's behaviour.

4 *Grandparental status.* In some cultures it is considered improper for a woman to continue to bear children after a daughter-in-law or daughter starts bearing, particularly if that daughter-in-law or daughter is in the same home, and the grandmother will therefore resort to contraception or sexual abstinence. This is also a life cycle phenomenon but one affecting fertility of the older generation rather than the younger.

5 *Daughter rather than daughter-in-law.* While in several societies, eg Bangladesh, it is far more common for a young married couple to live with the groom's rather than the bride's family, this is not necessarily true in others. In countries like Sri Lanka where a couple often lives with the wife's parents (though this may be more the result of housing shortage than of culture), it may become worth while to distinguish this relationship in examining fertility.

6 *Husband's absence from home.* In many countries it is frequently found that the husband is away from home in order to take employment in a distant locality, and this may have considerable fertility effect. This is more probable in an extended family household than in a nuclear household, since in the latter the wife is more likely to join the husband in the new locality.

Some of the above situations could result in an extended family having higher fertility than a nuclear family, some in just the reverse. All these possibilities should therefore be taken into account, where feasible, in any analysis, and it is for this reason that some of the detailed household classifications and statistical controls are undertaken in the data analysis of this study, in addition to the more customary classifications and controls such as present age, marriage age, number of children, economic status and education.

[2] See Rele 1963:197.

1.5 OTHER PROBLEMS OF INTERPRETATION AND MEASUREMENT

But there are other problems which cannot be solved by those statistical controls made possible by the WFS variables. Two very disturbing problems are the definition of a household and the time frame of reference.

It would have been very difficult and expensive for WFS to have defined a household other than as a physical housing unit, but the fact remains that many of the relations we have already discussed hold good in a traditional community even if other relatives live in a separate household but in the same dwelling, or in an adjacent dwelling, or even in the same community. The real extended family is that of common economic interests and of mutual obligations which has little to do with residential or eating patterns. Admittedly the older generation may more directly interfere with the younger couple's emotional bond, sexual relationship or practice of fertility control, if they live in the same house, or even in the same room. However, the ability to decide against contraception or to affirm that the good young wife continues to bear children one after another may well reside more in the control of land or other family economic resources or in the ability to marshal family, or even community, feelings in the neighbourhood.

There may be very little distinction between living in one household and living in adjacent households, especially where residence is on common land. In many societies, rural families live around a courtyard or at least a communal area of land where many common activities occur – even cooking and eating in the open. In these circumstances there is very little concept of family decision-making being confined to the separate households discerned by census or survey. The most meaningful separation in household occurs when the household has been removed from the traditional community.

The national WFS First Reports vary considerably in their definition of households and how households are to be identified. The Sri Lanka report (p 24) defines 'housing unit' as 'place of residence which was separate from other places of residence and had an independent access', pointing out that 'separate' meant having 'walls or partitions such that persons occupying it could live separately from other persons in the building or in the locality', and stated that 'one or more households could occupy one housing unit', and (p 22) defined a household as 'a group of people related to each other but including servants and boarders if they ate and lived together'. The Bangladesh report (p 20, footnote 1) includes the following definition of household: 'A group of persons usually living and eating together in a structure or dwelling. A household may also be formed within a shop, office, mosque, or on a boat, in a tent as long as its members sleep and eat there regularly'. In both definitions joint eating was a condition, but the emphasis seemed to be on separation of physical structures. This would definitely rule out the inclusion in one household of related persons within separate but closely adjacent physical structures (for example, structures surrounding a common courtyard) even if all these persons ate together, a situation found frequently in Bangladesh and occasionally in Sri Lanka.

The WFS 'Manual on Sample Design' does in fact leave the definition of a household to the individual countries, stating that the significance of the household is 'as an intermediate step toward the setting up of a sample of eligible women' and that most countries 'have developed a definition of the household appropriate to their own circumstances' (p 15). Elsewhere in the same manual (p 37) it is implied that the main emphasis is on identifying the eligible women with a minimum of time and expense. This probably has resulted in some tendency toward the artificial distinction of nuclear families within what were much more complex entities, and this in turn conceals the relationships where much of the decision-making lies.

The time problem is of an entirely different nature but is at least equally crucial. Since families change over time while surveys of the WFS type are all taken as at a single date (rather than being longitudinal), there is no certainty that the fertility we can measure took place while the family had its present nuclear or extended status. A survey would be more valuable if it could ascertain previous conditions so that only those families whose types had not changed could be considered. If this were done, however, it would be found in many societies that the excluded group, consisting of families which had been of both types during their reproduction period, would form the great majority.

As we have seen, it is not mere accident that there is a conversion from one type of family to the other. For instance, where married sons continue to live with their parents, the extended family may terminate either on the death of the father or the decision of the only remaining married son to move out and form his own household. This is in the very nature of the life cycle of the family. The conversions can work in either direction for a nuclear family can become an extended one when a first son marries or when a couple takes in aged parents. An additional problem is that in some societies certain types of families characterize certain socio-economic groups (eg joint-stem families being found among large landowners) and hence display the characteristics (including the fertility) of those groups.

In spite of the problems mentioned above, this analysis of WFS data is worthwhile for two reasons. First, the WFS data are better than most other data that have been employed to test the hypothesis of the impact on fertility of family structure – better in terms of measurement of fertility and in sample size. Secondly, such analysis may lead the way for subsequent surveys of the WFS type which may collect data suitable for more complete analysis. This will require greater precision in defining the family, detailed family histories, preferably data on all women and not merely ever-married women, and a great deal more information on the residential proximity of other relatives and on shared obligations, budgets and resources.

Because of the changing nature of a family's status, there is little advantage in examining fertility retrospectively over an extended period of time. Instead, in this study the analysis has been restricted to events occurring only within the five years immediately preceding the survey. This means that only for those couples married less than five years can we look at total fertility to date, though this turns out to be the group where extended family status is relatively common. Even a period running back as many as five years may involve the risk of status change, but the use of a much shorter period would produce too little exposure to give qualitatively acceptable results.

The measures which therefore seem most appropriate and which in fact are used as dependent variables later in this illustrative analysis are the following:

1 Births in the past five years to women married for five years or longer;
2 Births to date for women married less than five years;
3 Length of the first birth interval for women married at least five years who had at least one live birth;
4 Current use of contraception;
5 Age at marriage, for women married for less than five years.

All five of these variables minimize or avoid the time reference problem since they relate to the present or recent past. The analysis of each of them calls for control variables, whose need is implied by the discussions in this chapter, such as current age, age at marriage and marriage duration, as well as socio-economic variables such as urban-rural residence, religion, education and wealth.

2 Classification of Households

2.1 INTRODUCTION

As already indicated in chapter 1, there are a number of possible approaches in classification of households by composition and relation of members. One could classify a household merely by the number of its members, though this would have served little or no purpose. Alternatively, classification could be by number of married couples within the household, or by number of generations within the household only whether the household structure was nuclear or extended, and if the latter whether vertical or horizontal (ie stem or joint) or a combination of these. Each user of WFS data concerned with household or family classification should, where possible, choose that method which best fits his needs. While this illustrative analysis was in preparation, the WFS office in London created a simple standardized classification of its households which is now being introduced on the WFS tapes. This classification method will be discussed in appendix C.[3]

Our own classification method is one which we believe is useful in the analysis of fertility. It is not rigid in form; in fact, it is developed in somewhat different forms for the two countries Sri Lanka and Bangladesh to accommodate the fact that the cultures and therefore the household compositions differ as between those two countries. In each case, we chose fairly detailed classification schemes – one with 15 household types for Sri Lanka and one with 32 for Bangladesh – and after testing them out with the data we collapsed each into a simpler form for actual fertility analysis.

The actual methodology of classification, at least for the schemes we chose, becomes a highly technical process because of the form and nature of the WFS household schedule and the method used to code relationships from the schedule. For this reason, we include the actual methodology, and the problems involved in carrying it out, in appendix A, and include only basic considerations and broad descriptions in the text of this chapter.

2.2 BASIC CONSIDERATIONS

The WFS has utilized a household schedule which, in its essential contents, is fairly uniform for each of the surveyed countries. It is this household schedule which is the basis for determining household structure, inasmuch as it lists every household member, shows the relationship of each member to the head of the household and furnishes each member's sex, age and marital status. For some of the WFS national surveys, the household schedule also shows details as to each member's education and each female member's fertility (ie number of sons and daughters, living and dead, and the date of birth, sex and survival of the most recently born child). However, in every case it is the individual questionnaire answered by each eligible respondent which is the main source of WFS fertility data. The primary purposes of the household schedule are to furnish a census of the survey population and, perhaps even more important, to identify which household members are eligible respondents.[4]

As has been stated, the classification methodology used here is one of several possible alternatives. The approach we have taken involved:

1 The determination of how many married couples were present in the household and the division according to whether this number was zero, one or two or more;
2 The further division according to the relationship of the couples and the presence of various relatives.

A separation was also made for the households in which it appeared that there were polygamous unions. As already stated, a total of 15 types emerged for Sri Lanka and 32 for Bangladesh, but for the purpose of analysis in chapter 3 we regrouped the original 32 Bangladesh types into six broad classes (represented in chapter 3 as nuclear, nuclear extended A, nuclear extended B, stem-joint-complex and polygamous) while in the case of Sri Lanka the regrouping was into four classes (nuclear extended A and B were treated as a single class, the polygamous type was dropped because of the paucity of cases and their questionable authenticity).

The reasons for the different treatments of Sri Lanka and Bangladesh in the original classification were that different proportions of household types were known in advance and if not known would quickly have become apparent, and it was desired to explore somewhat differing classification schemes for the two countries. It was known in advance that the nuclear family is predominant in Sri Lanka but much less so in Bangladesh, and that where there is only one married couple in a household the presence of other related adults (eg a widowed parent or an unmarried sibling or a married female whose husband lives and works in a distant city) is much more likely in Bangladesh than in Sri Lanka. It was also known that in those Bangladesh households with two or more married couples of different generations present, the couple (or couples) in the younger generation would be the older couple's son and wife (or

[3] Weekes-Vagliani (1980) has also devised her own system of household classification and applied it to the WFS data of Sri Lanka as well as to data of Fiji, Malaysia and the Dominican Republic.

[4] An eligible respondent is an ever-married woman under age 50 (in Sri Lanka she must also be at least age 12) who slept in the household the night before the household interview.

sons and their wives) in the great majority of cases, in Sri Lanka, on the other hand, the likelihood that the younger couple would be a daughter and son-in-law would be about as great as that of a son and daughter-in-law. Lastly, it was also known that in predominantly Muslim Bangladesh there would be a considerable number of polygamous households: in Sri Lanka, where the Muslim population is relatively small, very little polygamy was expected.

The differences between the two countries are highlighted in the table at the foot of the page, abridged from appendix A.

The steps in the process of classifying households for Sri Lanka and Bangladesh, once the classification scheme for each country was decided, involved:

1 The construction of a computer program, described in section IV of appendix A;
2 The application of the computer program to the household census tape to derive outputs which contain the household type and other household characteristics;
3 Matching and merging household output with the eligible respondent which contains both (a) her own fertility and other characteristics and (b) her household type. This matching and merging process is described in section VII of appendix A.

2.3 DESCRIPTION OF HOUSEHOLD TYPES

The lists and brief descriptions of the 15 and 32 household types created for Sri Lanka and Bangladesh, respectively, are given in appendix A, sections V and VI, respectively. There follows here a more descriptive presentation and discussion of the 15 types for Sri Lanka.

Type 1 is a purely nuclear type, consisting of husband and wife with or without unmarried children (no households with related currently married or ex-married children are included). Type 2 is similar to type 1 except that it includes never-married persons related to the married couple and in the couple's own generation. Probably in most cases these are never-married siblings of husband or wife. Type 3 differs from type 2 in that its households include at least one currently married (spouse absent) or ex-married person of the couple's generation; never-married persons of this generation may also be included.

Type 4 is similar to type 2 except that it includes currently married (spouse absent) or ex-married persons of the couple's children's generation.

Inasmuch as a mother-in-law – generally the husband's mother – is often claimed to be the promoter of high fertility in the traditional south Asian households, type 5 was set up in such a way as to include all households where the husband's mother was present, and type 6 where the wife's mother was present, irrespective of other relatives, except that if both mothers were present, the household type was 5.

Type 7 is a residual type for one-couple households, containing various combinations not included in the first six types. The program divides type 7 into three sub-types, containing respectively 66, 166 and 55 households. The households in the first sub-type (7.1) are those in which there is at least one ever-married female in the couple's parents' generation but not one of the mothers-in-law. The households in the sub-type 7.2 are those which include a never-married uncle or aunt or other never-married relative in the parents' generation. The households in the sub-type 7.3 involve various combinations, for example never-married relatives in both the couple's own and their parents' generation. Type 7 probably includes some cases which might have been in some other type except for a coding error. For example, sub-type 7.1 may include an ever-married female who actually was the mother of one member of the couple (ie either husband or wife) but failed to be recognized as such as the result of failure to code mother's line correctly.

The multi-couple types 8–13 need little explanation. Type 8 includes two married couples in the same generation, types 9–11 two couples in different generations, type 12 three or more couples in the same generation and type 13 three or more in different generations. In type 9, the couple in the younger generation are the son and daughter-in-law of the older couple, in type 10 they are the daughter and son-in-law. In Sri Lanka, the latter arrangement is slightly more frequent than the former; in Bangladesh the former far outnumbers the latter. Type 11 can include either (1) households with couples who are two generations apart, or (2) households where the elder couple are uncle and aunt of the younger. However, it is also possible that this type includes cases where the younger husband or wife is child of the elder couple but not recognized as such because of failure to code mother's line.

Percentage distribution of households and respondents by household type

Household description	Sri Lanka[a]		Bangladesh	
	% of households	% of eligible respondents	% of households	% of eligible respondents
Purely nuclear (ie one married couple with no adult relatives present)	55	54	45	36
Other one-couple households	19	25	24	27
Two or more couples	8	13	15	24
No married couples present	18	8	14	8
Polygamous	< 0.5	< 0.5	2	4
Totals	100	100	100	100

[a] These Sri Lanka percentages are based on unweighted data, but percentages based on weighted data are practically identical.

Households of type 14 include a variety of situations: a widow or widower with or without children, a married person with spouse absent (ie not listed in the household schedule even on a *de jure* basis), or a group of unmarried or unrelated persons, or only one person. Over one-fifth of the type 14 households contained only one person; over one-half had three or fewer people.

Type 15 included 15 households in each of which there were three or more persons with one couple code in common. This would suggest polygamous relationships, but when the records for these households were individually examined, it was found that there were at most nine households which included one husband with two wives, and that the remaining cases involved coding errors, and it was decided not to include any of the 15 in the analysis.

The household types for Bangladesh are analogous to those for Sri Lanka, and are detailed in section VI of appendix A. Thus Bangladesh type 1 corresponds very closely to Sri Lanka type 1, and Bangladesh types 25–32 correspond exactly to Sri Lanka types 8–15 respectively. However, for one-couple households with one or more related persons (other than unmarried children) the 23 Bangladesh types 2–24 correspond as a group (but not individually) to Sri Lanka types 2–7. Bangladesh type 1 is not purely nuclear since it can include some never-married individuals in the couple's parents' generation. In Bangladesh, however, the proportion of persons aged 40 and over who are never married would be extremely low, and table II.4 of the *First Report* shows this proportion to be only 1.3 per cent for males at these ages, only 1 per cent for females. Therefore we can state that for all real purposes, type 1 is purely nuclear.

It may also be noted that the Bangladesh classification scheme does not include any household type or group of types for which one can say that the wife's mother-in-law is necessarily present. Types 5–8 and 13–16 and 21–24 are defined as having ever-married female related persons of the parents' generation, but such persons could be aunts or could be the wife's mother rather than mother-in-law. However, a detailed tabulation of households of these types indicated that in 86 per cent of such households the husband's mother actually was included as a household member; in 11 per cent the wife's mother was present.

For households other than with one couple or with no married couples, the household types corresponded to those for Sri Lanka except that the type numbers were different. Thus type 25 for Bangladesh represented a two-couple household with both couples in the same generation, corresponding to Sri Lanka's type 8, type 26 for Bangladesh corresponding to Sri Lanka's type 9, 27 to Sri Lanka's 10, etc. Bangladesh type 32 was the type with one or more polygamous 'couples' in the household.

In Bangladesh, the detailed examination of the household data has shown that the polygamous household type (type 32) was genuinely polygamous in most cases. There were a total of 139 households where three or more members had the same couple code; these were listed out by the program and 127 were found to involve groups consisting of one male and two or more wives. In four of these households there was a man with three wives.[5] In many of the households there were additional married couples other than the polygamous group, and in one there were two men each with two wives.

The computer output for each eligible respondent included the number of wives her husband had, not only for the polygamous households but also for monogamous households (in which case the number was 1) or zero-couple households (in which case the number was 0). In determining the number of wives a husband had, wives who were not eligible respondents were counted as well as those who were. Of course, if a man had an additional wife not listed in the household schedule, there was no way to detect the fact. An additional wife might even be in an adjacent house, illustrating the problem, mentioned in chapter 1, arising from the difficulty in using physical housing units as households.

For both Sri Lanka and Bangladesh, the output for each eligible respondent included both the number of eligible respondents in the household and the individual eligible respondent's own order among the various eligible respondents. For example, if a particular household had two eligible respondents, one listed in line 2 of the household schedule, the other in line 6, the output for the first would show a 2 indicating that there were two eligible respondents and a 1 showing that she was the first of two, while that for the second would show two 2s. This made it possible, after the output data were matched and merged with individual recode records, to tabulate only those with a 1 designation in the order column when household information was to be tabulated without counting the same household more than once.

For both Bangladesh and Sri Lanka, the household classification computer programs furnished a printed output in the form of a table cross-classifying all eligible respondents by household type, generation code and marital status. The marital status code differed as between married women whose husbands were present, ie listed in the household schedule, and married women whose husbands were not so listed.

There are three special problems that arose in connection with both Sri Lanka and Bangladesh WFS data, these problems being concerned with (1) the weighting of data, (2) the editing of data and (3) the question of residence (ie whether to include household members *de facto* or *de jure* for the purpose of household classification). The first of these problems, relating to weighting, would not necessarily arise in all countries, but it arose in the analyses both of Bangladesh and Sri Lanka WFS data where there was non-uniformity in sampling fractions among the different parts of the country.

A full discussion of each of the three problems is included in section VIII of appendix A.

2.4 GROUPING OF TYPES FOR PURPOSES OF ANALYSIS

As pointed out earlier in this chapter, we collapsed or re-grouped the household types for purpose of analysis in chapter 3. The groupings, and the names assigned to them for use in chapter 3, are as follows:

[5] The remaining 12 cases had been erroneously coded and were therefore assigned the household types believed to be correct.

Household type description	Household types in detailed classification		
	Sri Lanka	Bangladesh	Name assigned in chapter 3
I Purely nuclear	1	1	Nuclear
II One married couple, with others of the household head's generation	2–4, 7	2–4, 9–12, 17–19	Nuclear extended A
III As II, and including mother or mother-in-law of the household head	5, 6	5–8, 13–16, 20–24	Nuclear extended B
IV Two or more married couples	8–13	25–30	Stem-joint-complex
V Zero-couple households	14	31	Incomplete
VI Polygamous households	15	32	Polygamous

However, because in the case of Sri Lanka the nuclear extended A and B groups are both small, they are generally combined for chapter 3 simply under the name nuclear extended. Moreover, for Sri Lanka, the polygamous households are omitted from the analysis because they are so few in number and some are of doubtful validity.

3 Data Analysis

3.1 INTRODUCTION

In this chapter are presented the results of the analysis of reproductive behaviour by household type for Sri Lanka and Bangladesh. The two populations differ in so many respects that it was deemed unjustifiable to run, in most instances at least, identical analyses for both of them. Rather, we felt that a separate analysis for each of the two societies should be carried out, preserving on one hand as much uniformity (for instance, in the selection of dependent and independent variables) as possible but, on the other hand, paying adequate attention to the specific issues prevailing in each case and to the variation in socio-economic and cultural features that may have a bearing on the topic under investigation. In the concluding section we will then attempt to identify the factors that the two populations have in common with respect to the family structure-reproductive behaviour relationship.

It was pointed out in chapter 1 that one of the shortcomings of empirical studies of the relationship between family type and fertility has been the lack of data linking childbirths with the type of family in which they took place. Life-time fertility, that is the parity ever born or surviving, obtained at the time of the interview, has not necessarily taken place in the family type in which the mother lived at the time of the survey. Hence it is advisable to consider events, such as the number of live births or use of contraception, only during a period close to the time of the survey to have some assurance of the reality, if any, of the relationship.

The following aspects of reproductive behaviour and family formation are considered for analysis in this chapter:

1 Births in the past five years to women married for five years and longer;
2 Births to date for women married for less than five years;
3 Length of the first birth interval for women married less than five years who had at least one live birth;[6]
4 Current use of contraception;
5 Age at marriage, for women married for less than five years.[7]

In most analyses the women selected are those whose first marriage has been intact.

Each of the analyses under 1–5 calls for use of control variables, both demographic and social. Current age, age at marriage, marriage duration are the most obvious ones. Urban-rural residence, religion, education, wealth, etc may be additional variables to be used in multivariate analysis.

Of the various techniques of multivariate analysis the model best suited for the type of variables with which we are dealing here appeared to be the analysis of variance (ANOVA). To ascertain the pattern of the association between the dependent variable and the set of predictors we used the multiple classification analysis (MCA). The two techniques are described in detail for instance in Little (1980) and Ogawa (1980) and in the SPSS manual (here with respect to the package programs provided).

Our analyses aim at assessing the net effect of the household structure category on a specific aspect of reproductive behaviour, such as recent childbearing, use of contraception, etc. To achieve that a hierarchical approach was called for. In simple terms, it means that the effect of all other independent variables was adjusted for before the variable 'household type' was introduced.

Some of the independent variables used here are what might be called typical demographic variables: age, marriage age, marriage duration, number of surviving children, etc. All of them can be measured on a continuous or at least an interval scale. The other group of predictors are social and economic characteristics of the respondents: religion, race, educational level, place of residence, etc. Most of them are typically categorical or, at best, interval variables. Accordingly, we designed the ANOVA and MCA procedures in such a way that the demogaphic predictors were introduced first, as covariates, to remove the extraneous variation from the dependent variable through linear regression procedure. Next the conventional ANOVA was performed using the selected socio-economic independents in the form of categorical variables on the 'corrected' or 'adjusted' scores of the dependent variable. The adjustments for the independent factors are made in the order in which they appear on the list; hence, the household type has to be introduced as the last factor. To minimize the problem of interaction effect we replaced the simple independent variable by a joint variable where such problem appeared to be serious (see eg Little 1980: 34–6).

[6] In this analysis negative first birth intervals suggesting that the first child was born out of wedlock were deleted. In both Sri Lanka and Bangladesh illegitimate births are rare and it was not likely that a respondent would admit to the interviewer what would be considered a shameful event. More likely, negative first birth intervals may have been the result of misreporting of either month or year of marriage or dating of the first birth or both.

[7] This approach captures the relationship of age at marriage with household type *after* marriage. Equally interesting and perhaps more important is the relationship of age at marriage by household type *before* marriage (in the family of origin). To obtain the latter information from the WFS data would be rather difficult if not impossible.

The SPSS package programs were used to perform ANOVA and MCA with options 4 and 10 (the former suppressing three-way and higher order interactions, the latter providing for the hierarchical design) and statistics 1, 2 for providing the MCA output in the desired form. The printout of the MCA shows, apart from the grand mean of the dependent variable, unadjusted and adjusted (for covariates and other independents) deviations from the grand mean of the means of the individual categories of each factor. To show in the MCA tabulation the closeness of the relationship between the predictors and the dependent variable, two measures are given: *eta* (for unadjusted differences) and *beta* (for adjusted deviations). In simple terms, *eta squared* indicates the proportion of variation explained by the given predictor alone; *beta squared* shows approximately what proportion of the variation is explained by the predictor after taking into account the proportion explained by covariates and other previously considered categorical variables (Ogawa 1980: 115).

3.2 SRI LANKA

Introduction

Sri Lanka is an island nation lying in the Indian Ocean to the south-east of India. Its area is 65 608 sq km and its population in 1981 is estimated at about 14.8 million (12.7 million at the time of the 1971 census). It is an agricultural country with about 76 per cent of its population rural, and its only large urban area consists of the capital Colombo and its environs. The south-west portion of this island and its mountainous south-central area have very abundant rainfall and these areas include large plantations of coconut, rubber and tea, the last named being the most important export crop. The northern and eastern portions of the island have considerably less precipitation, getting rainfall only during the north-east monsoon.

There are four major ethnic divisions of the population, each with its own culture. The Sinhalese, living in the south, west and central parts of the island, are 72 per cent of the total population.[8] The second largest group are the Sri Lanka Tamils constituting 11 per cent of the population. Their ancestors came to Sri Lanka from south India many centuries ago, and settled in the north and north-east parts of the island, though today many Sri Lanka Tamils are living or employed in or near Colombo. Another 9 per cent of the population are Indian Tamils, so-called because they came from India after 1850, mostly to work in the tea plantations of the central highlands; they have had traditionally poor living conditions, poor health services and little education. The Moors constitute about 7 per cent of the population. They are descended largely from Arab traders who came several centuries ago but now include a group of more recent arrivals. Many of them live on the east coast of the island and speak Tamil, but others live in Colombo and other towns, speak Sinhalese and English as well as Tamil, and are often engaged in business and in the lucrative gem trade. The Sinhalese are predominantly Buddhist, the Tamils predominantly Hindu and the Moors exclusively Muslim.

In matters of health and education the country is quite advanced. There is a very effective health infra-structure, and since the very successful anti-malaria campaign of the late 1940s, mortality has been very low among all groups except the Indian Tamils, with an infant mortality rate in the 1970s less than 50, crude death rate about 8 and life expectancy at birth in the neighbourhood of 65. Schooling is now free and compulsory, and most people are literate in their mother tongue (Sinhalese or Tamil) with a fair number literate in English as well. However, most Muslim girls are kept in school only through the primary grades, and Indian Tamils of both sexes often receive very limited education.

Marriage has for many decades been much later than elsewhere in south Asia, and by 1971 the singulate mean age of marriage had reached 23.5 for females and 28.0 for males. Today about one-fifth of the women are still unmarried at their thirtieth birthday. Not all marriages are registered, but the so-called 'customary' marriages are regarded as stable and are counted as marriages in nuptiality compilations. It is recognized that late marriage accounts for much of the recent decline in crude birth rate, which was 40 in 1950 and 27 in 1975 when the Sri Lanka Fertility Survey was taken. However, family planning became part of the national family health programme in 1965, and even before that date there were a number of pilot projects. Recently there has been considerable interest in female sterilization, and the number of women seeking post-partum sterilization after hospital deliveries has exceeded the service capacity.

There is believed to be very little illegitimacy in Sri Lanka. Abortion is illegal, but is believed to be quite frequent among married women who have already borne several children.

The annual rate of natural increase in Sri Lanka at the time of the Sri Lanka Fertility Survey (1975) was about 1.9 per cent. Because there is some net emigration from the country, the actual rate of population growth might have been as low as 1.7 per cent.

In Sri Lanka there has been no single pattern of family structure applicable to the entire island, and sometimes not even in single areas. Obeyesekere (1967) and Robinson (1975) both describe two different extended family and inheritance patterns which have both existed traditionally and side by side among the Kandyan (central highlands) Sinhalese, one the *diga* where inheritance was strictly patrilineal, and the other the *binna* where a woman did inherit from her father. In the *diga* situation a newly married couple usually lived in the husband's parental home and in the *binna* they often lived in the wife's. Yalman (1967) also refers to both of these extended family types, but also claims that the 'unit of food consumption in the Kandyan village consists of a wife, unmarried children, and a husband', ie a nuclear family (see Yalman 1967: 102). Today we still find newly married couples living with either the husband's or wife's parents, but as will be seen this appears to be more the case in the urban than in the rural setting and therefore may result from the serious housing shortage in Colombo and other Sri Lanka towns.

[8] Source for much of this paragraph is the Sri Lanka Fertility Survey *First Report*, p 2.

Table 1 Characteristics of the households by type, SLFS 1975: number of eligible respondents in a household, average number of household members, sex and age of the household heads (excludes tea-estates and all polygamous households)

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
Number of households	3986	1516	589	1299	7389
% of total	53.9	20.5	8.0	17.6	100.0
Average number of household members	5.8	7.0	8.7	3.7	5.9
Household head: Male					
N	3934	1239	559	485	6217
Age distribution (%)					
Under 30	8.6	7.9	2.6	17.9	8.6
30–39	26.6	22.9	5.5	13.8	23.0
40–49	28.8	24.6	10.0	16.7	25.3
50–59	20.8	21.6	28.4	20.9	21.6
60 and over	15.2	23.0	53.5	30.8	21.4
Household head: Female					
N	52	277	30	813	1172
Age distribution (%)					
Under 30	9.8	2.8	0.0	2.6	2.9
30–39	26.5	3.9	11.4	11.8	10.6
40–49	30.3	9.4	12.8	26.7	22.4
50–59	19.7	23.3	26.6	26.2	25.2
60 and over	13.8	60.5	49.3	32.7	38.3

Table 2 Distribution of households by location, SLFS 1975: number of households and average number of household members, by urban and rural location (excludes tea-estates and all polygamous households)

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
Colombo City, N	214	126	53	78	470
%	46	27	11	16	100
Average number of household members	5.8	7.3	9.8	4.6	7.2
Other urban, N	473	213	87	173	945
%	50	23	9	8	100
Average number of household members	5.8	7.1	9.4	4.3	6.1
Rural, N	3298	1177	450	1048	5974
%	55	20	7	18	100
Average number of household members	5.9	7.0	8.4	3.6	5.9
Totals, N	3986	1516	589	1299	7389
%	54	21	8	18	100
Average number of household members	5.8	7.0	8.7	3.7	5.9

Sri Lanka Households

The total number of households tabulated on an unweighted basis as shown in appendix A was 8136, including 15 apparently polygamous households, which it was decided not to use in subsequent analyses. When the tabulation in subsequent analyses of households is weighted, using the weights appropriate to the respective strata, the total (8136) is unchanged, but eliminating the polygamous households, the total weighted number is 8119. This number includes 730 households in stratum 17, the tea-estate area in the central highlands. These households and the eligible respondents in them will be treated separately in a later part of this chapter, since the tea-estate workers and their housing are so untypical that their inclusion here might tend to confuse results.

The remaining 7389 households are tabulated in tables 1 and 2, according to broad household type,[9] urban or rural location, and sex and age of household head as indicated in the household schedule. Average numbers of members are also shown. It must be remembered that these tables give weighted data and that also they include households in which there may be no eligible respondent. The average number of members is based on all members listed in the household schedule who are either *de facto* or *de jure* and therefore exceeds a strict *de facto* average by 2 or 3 per cent (see appendix A).

Table 1 shows that 53.9 per cent of the households are purely nuclear according to our definition. The average number of household members is 5.8. The purely nuclear families include 53 per cent of the aggregate household population (excluding tea-estate and polygamous households).

The nuclear extended households are 20.5 per cent of total households and include 24 per cent of the aggregate household population. Their average number of household members is 7.0.

The stem-joint-complex group are only 8.0 per cent of total households but include 12 per cent of the population; their average number of household members is 8.7.

The incomplete households include 17.6 per cent of total households but only 11 per cent of household population, the average members per household being only 3.7.

The great majority of the nuclear, nuclear extended and stem-joint-complex households include at least one eligible respondent (see appendix A, section V) and many of the nuclear extended and stem-joint-complex include more than one. However, about two-thirds of incomplete households do not include any eligible respondents. Some have only a single member, who may be a widow or widower.

In fact, when we turn to the lower part of this table, we find that 813 of the 1299 incomplete households are headed by women and that the majority of household heads, whether female or male, are 50 years old or older.

Some of the surprising findings of the lower part of this table – for example that 52 of the nuclear families were headed by women – result from the coding and classification methodologies. A married couple with husband present *de jure* but absent *de facto* would be classed as nuclear, but here it was entirely possible that either the wife or the husband could be regarded by the interviewer as the family head. If the husband was not even included as a *de jure* member of the household, presumably because he was away from home for a long period, he obviously could not be coded as the head and the couple could not be coded as a couple but would fall probably either into the incomplete household category or into some other category (not nuclear) depending on whether other married couples or relatives were present.

Table 2 shows the distribution of the different household types by locality as well as average numbers of household members. Here two important facts stand out: first, that the proportion of purely nuclear households is lowest in the urban areas, particularly in Colombo, and secondly, that type by type, except for the purely nuclear, the largest household sizes are in urban areas, particularly Colombo. Here two factors are in operation: the great housing shortage in Sri Lanka's cities which causes married couples to 'double up', and the fact, pointed out in chapter 1, that what appears as a nuclear family in rural areas may in truth be part of an extended family dwelling in more than one physical structure.

The data of tables 3 and 4 are drawn from the matched file of eligible respondent data, so that the households represented include only those households where eligible respondents are present. Records are used on only one eligible respondent per household to avoid multiple tabulation of the same household. As before, tea-estate and polygamous households are excluded.

The Sri Lanka Fertility Survey (SLFS) recode file for eligible respondents includes, among other data, the amount of land owned by the household and a standard-of-living score developed from housing amenities and household chattels (see appendix B). Land is measured in square perches (there are 160 square perches to an acre, 395 to a hectare). Other household data include number of rooms in the house.

Comparison of the different household types and in the different locations will show that while urban households rarely possess any land (those that own 10 perches or more sometimes indicate absentee ownership), they are considerably wealthier in terms of housing amenities and chattels. This is to be expected, since urban housing has a greater need for various amenities such as flush toilets, and also because urban housing is much more likely to have electricity than rural and therefore more likely to have electric appliances.

It appears also that the nuclear extended households in each sector have higher standard-of-living scores than the purely nuclear, and the stem-joint-complex have still more.[10]

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[9] These broad household types are:

Nuclear – one married couple with no relatives except never-married children
Nuclear extended – same as nuclear but with additional relatives
Joint-stem-complex – two or more married couples
Incomplete – no married couples.

Various analyses breaking down among the several nuclear extended types or among the several joint-stem-complex types have been performed, but do not reveal differences that would warrant presentation here.

[10] Standard-of-living score (Sri Lanka) and possession of certain chattels (Bangladesh) as used throughout this paper are calculated on family basis. This appeared to be justified on the grounds that the possessions selected by the WFS are such that most of them serve more than one person (the only exception being possibly the watch). On a *per capita* basis the wealth position of various family types would, obviously, be different.

Table 3 Characteristics of households with at least one eligible respondent, SLFS 1975: distribution of households by land owned (in square perches), and mean number of rooms, by urban and rural location (excludes tea-estates and all polygamous households)

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
Colombo City, N	175	114	51	27	367
Owning less than 10 perches	168	111	51	26	356
10–100 perches	4	3	0	1	8
Over 100 perches	2	0	0	0	2
Mean number of rooms	3.3	3.5	3.9	3.5	3.4
Other urban, N	385	192	87	65	728
Owning less than 10 perches	346	161	75	59	641
10–100 perches	25	18	6	2	51
Over 100 perches	14	13	5	4	37
Mean number of rooms	3.7	3.7	4.4	3.7	3.8
Rural, N	2668	1071	426	352	4517
Owning less than 10 perches	1238	494	189	236	2156
10–100 perches	911	357	144	74	1487
Over 100 perches	519	220	92	41	873
Mean number of rooms	3.3	3.9	4.2	3.2	3.5
Totals, N	3228	1377	563	443	5611
Owning less than 10 perches	1752	766	315	321	3154
10–100 perches	940	378	150	77	1545
Over 100 perches	535	233	97	45	911
Mean number of rooms	3.3	3.8	4.2	3.3	3.6

NOTE: There are 160 square perches to an acre, approximately 395 to a hectare.

Mean numbers of rooms per household, on the other hand, do not vary greatly either between urban and rural sectors or between household types. They are greater for the smaller urban communities than for either Colombo or rural areas. They are larger for nuclear extended and stem-joint-complex households than for purely nuclear, but the relative variation is less than the variation in standard-of-living score.

The standard-of-living score is clearly larger for the more complex household types than for the nuclear and thus is positively correlated with the number of household members when all household types are grouped together, but it does not follow that the score depends on the number of members for nuclear, nuclear extended or stem-joint-complex taken separately. In order to examine the interrelation between number of household members, number of household rooms and standard-of-living score, a regression analysis was made for the rural area of the south-west sample stratum of Sri Lanka, zone II.[11] This rural area is quite densely populated and is ethnically quite homogeneous, but in order to assure even greater homogeneity all non-Sinhalese were excluded. Incomplete households were also excluded, but 660 households remained (unweighted basis). It was anticipated that number of household members or number of married couples in the household would be highly correlated with standard-of-living score, but this did not turn out to be the case. Instead, the number of household rooms and the wife's years of education were the most highly correlated for each household type, and in fact number of household rooms alone produced R^2 values of over 0.33 in each case.

One observation, which will be discussed in more detail later, is that the average level of wife's education was higher in the nuclear extended households than in the purely nuclear, and still higher in the stem-joint-complex. Since it will be shown (and in fact is widely known) that fertility and education are inversely related, it will be seen in subsequent analysis that education explains much of the relatively low fertility found in extended family households.

Description of Eligible Respondents Classified by Household Types

Tables 5–11 present distributions of eligible respondents

[11] See map on p 21 of SLFS *First Report*.

Table 4 Characteristics of households with at least one eligible respondent, SLFS 1975: distribution of households by standard-of-living score and mean standard-of-living score, by urban and rural location (excludes tea-estates and all polygamous households)

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
Colombo City, N	175	114	51	27	367
0–4 points	50	24	7	8	88
5–9 points	67	45	21	12	145
10–14 points	33	35	20	6	94
15+ points	24	11	4	1	40
Mean score	8.0	8.6	9.2	7.5	8.3
Other urban, N	385	192	87	65	728
0–4 points	138	74	23	33	267
5–9 points	131	68	34	21	254
10–14 points	101	39	24	9	172
15+ points	15	11	6	3	35
Mean score	6.7	6.6	7.9	5.7	6.7
Rural, N	2668	1071	426	352	4517
0–4 points	1570	498	166	238	2471
5–9 points	857	386	171	91	1506
10–14 points	229	184	85	23	521
15+ points	12	3	4	0	19
Mean score	4.2	5.4	6.1	3.5	4.6
Totals, N	3228	1377	563	443	5611
0–4 points	1758	596	195	278	2826
5–9 points	1055	499	226	124	1905
10–14 points	363	258	129	38	787
15+ points	51	25	14	4	94
Mean score	4.7	5.8	6.7	4.1	5.1

Table 5 Distribution of eligible respondents by marital status within each household type, SLFS 1975

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	Total
Currently married					
In first marriage	3089	1358	781	119	5347
Other than in first marriage	145	43	24	6	218
Widowed	4[a]	80	6	231	322
Divorced or separated	10[a]	102	9	125	246
Total	3248	1583	821	482	6134

[a] These 14 women are unrelated to the household head and presumably are servants or lodgers.

Table 6 Percentage distribution of eligible respondents by age within household classification, SLFS 1975

Age group	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
Under 20	1.5	3.4	7.0	0.9	2.6
20–24	10.4	15.5	24.2	6.4	13.3
25–29	16.3	21.6	25.5	10.9	18.5
30–34	19.9	19.3	13.5	10.4	18.1
35–39	19.8	15.9	8.9	19.7	17.4
40–44	16.0	11.4	9.0	26.0	14.6
45–49	16.1	12.8	11.9	25.8	15.5
Total %	100.0	100.0	100.0	100.0	100.0
N	3248	1583	821	482	6134

Table 7 Percentage distribution of eligible respondents by education within household classification, SLFS 1975

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
No schooling	21.1	15.9	14.2	24.4	19.1
1–5 years	42.7	37.3	29.9	40.4	39.4
6–9 years	25.4	28.2	33.6	22.5	27.0
10+ years	10.7	18.6	22.2	12.7	14.5
Total %	100.0	100.0	100.0	100.0	100.0
N	3248	1583	821	482	6134

Table 8 Percentage distribution of eligible respondents by household's standard-of-living score, within each household classification, SLFS 1975

	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All
0–4 points	54.2	44.1	37.0	61.5	49.9
5–9 points	32.7	35.7	38.9	28.6	34.0
10+	13.1	20.2	24.1	9.8	16.1
Total %	100.0	100.0	100.0	100.0	100.0
N	3248	1583	821	482	6134

Table 9 Percentage distribution of eligible respondents by household type within each age group, SLFS 1975

Age group	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All respondents (= 100%)
Under 20	29.2	33.0	35.3	2.6	162
20–24	41.6	30.2	24.4	3.8	814
25–29	46.7	30.2	18.5	4.7	1133
30–34	58.1	27.5	9.9	4.5	1113
35–39	60.6	23.6	6.9	8.9	1065
40–44	57.7	20.1	8.2	13.9	898
45–49	55.1	21.4	10.3	13.1	949
All	52.9	25.8	13.4	7.9	6134
Under 25	43.3	30.3	22.0	4.3	2109
35 and over	57.8	21.8	8.4	11.9	2912

Table 10 Percentage distribution of eligible respondents by household type within each ethnic group, SLFS 1975

Ethnic group	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All respondents (= 100%)
Sinhalese	53.6	26.0	12.7	7.7	4783
Sri Lanka Tamil	51.4	26.4	14.3	7.9	811
Moors	48.2	22.3	19.5	10.0	436
Indian Tamil	60.8	22.3	13.1	3.8	68[a]
Other	47.6	30.6	13.3	8.5	35
All	52.9	25.8	13.4	7.9	6134

[a]These Indian Tamils are only a small minority of the Indian Tamils in Sri Lanka; the majority are in the tea-estates, which are not included in this tabulation.

Table 11 Percentage distribution of eligible respondents by household type within each marital duration group, SLFS 1975

Duration since first marriage (years)	Nuclear	Nuclear extended	Stem-joint-complex	Incomplete	All respondents (= 100%)
Under 5	28.0	34.4	32.6	5.0	1167
5–9	51.3	31.5	13.4	3.8	1111
10–14	62.3	25.3	7.2	5.2	1008
15–19	64.2	22.9	4.5	8.4	941
20–24	63.3	18.9	6.0	11.8	797
25–29	56.5	18.7	10.4	14.4	718
30+	53.2	19.7	13.8	13.4	393
All	52.9	25.8	13.4	7.9	6134

by current marital status, status of first marriage, marriage age, current age, duration since first marriage, type of residence area, education and race, for each of the broad household types. Tea-estates and polygamous households are excluded.

There are a number of observations which may be made from these tables, and from other tabulations of eligible respondents by household type:

1 Eligible respondents in incomplete households are primarily widowed, divorced or separated women. Those who are married are women whose husbands are not in the household even on a *de jure* basis. Accordingly, eligible respondents in incomplete households generally are in the older age groups and at long durations since first marriage.
2 In all other household types the great majority of women are currently married and also still in their first marriage. As tables 4.6 and 4.7 of the SLFS *First Report* also indicate, marriage stability is very strong in Sri Lanka.
3 The tables showing distributions by age and marriage duration among the household types confirm the hypotheses that young and newly married women tend more to be in nuclear extended or stem-joint-complex than in purely nuclear households. However, the proportion in nuclear households, after rising to over 60 per cent at the middle ages and marriage durations, then drops again at the older ages and durations. This is because the women at these later ages and durations are often members of the cohort who are mothers or mothers-in-law of the young married women living in their households; this is the life-cycle effect described in chapter 1.
4 Women who married at the very young ages are found to be in purely nuclear households in over 60 per cent of the cases, but this is because many of these women are members of an older cohort, whose marriage ages were relatively low. Most of the women who married aged 25 and over are recently married women, and many of them are living in the same household as one or more parents or parents-in-law.
5 As between Sinhalese and Sri Lanka Tamils (tea-estate Tamils are not included in these tables), there is little difference in household patterns. Moors are somewhat more likely to be in extended households.
6 As already observed, the extended households tend to have higher standard-of-living scores. Women in these households tend to have more education. Both of these phenomena arise, in part but not wholly, from the fact that people in urban areas are the ones most likely living in extended households under present circumstances. The higher average education level for women in extended households, as compared to nuclear, was noted particularly for women under 30.
7 Sixty-two per cent of eligible respondents whose husbands were either self-employed farmers or agricultural labourers lived in nuclear households. In most other occupational categories the proportion was under 50 per cent, which may be attributed to the fact that many in these other categories were urban.

Reproductive Behaviour of Eligible Respondents

Many tables and much textual analysis of the fertility eligible respondents are to be found in the SLFS *First Report.* The analyses given here are oriented to the classification of eligible respondents according to household type and are particularly concerned with the relation of reproductive behaviour to household type. As before, we shall exclude tea-estate residents (though they will be discussed in a later section) and polygamous households; and because of their small numbers we shall also exclude members of any racial groups other than Sinhalese, Sri Lanka Tamils and Moors. Thus our data will not exactly coincide with those in the SLFS *First Report.* We shall consider only those eligible respondents who have remained continuously in their first marriage. For the analysis of current use of contraception, we shall also exclude women who are currently pregnant and women who consider themselves infecund.

Our first analysis will be of births in the past five years to women who are still in their first marriage. Table 12 tabulates these women for the four broad household types – nuclear, nuclear extended, stem-joint-complex and incomplete – according to years since marriage, showing the mean number of births in the past five years for each type-age subgroup as well as for each type in total. The means for the nuclear and nuclear extended types are almost identical in total, but this is because of the difference in duration distributions; for each individual duration the mean number of births for the nuclear extended is less than for the nuclear households. Also the mean parity for stem-joint-complex at each individual duration, except one, is less than for the nuclear extended families. On a duration-standardized basis, an approximate test shows that the difference from one group to the next is significant at the .05 level.

Also it may be noted from the lower part of the table that the percentages of women who have had no births in the past five years are in general higher for the nuclear extended than for the nuclear and higher for the stem-joint-complex than for the nuclear extended households.

Results quite analogous to those of table 12 are obtained when breakdown is by age rather than marriage duration.

The women in incomplete households have had even fewer births in the past five years than those in any of the other groups. This of course is to be expected, since even though these women are married, their husbands are presumably absent from home much of the time. Consequently, these women will be excluded in the subsequent analysis.

The preceding analyses of the relationship between household type and reproductive behaviour took into consideration only age of the respondent or, alternatively or concurrently, her marriage duration. However, the household types vary in socio-economic respects as well: we noted that, for instance, wealth is not distributed evenly between various types of households; similarly, better educated women are likely to be found in one type of household than in another; among the Moors complex households were found more often than among the other

Table 12 Average number of children born in the past five years to eligible respondents still in their first marriage, by marriage duration and household type, SLFS 1975

Marriage duration (years)	Household type: Nuclear N	Nuclear P	Nuclear extended N	Nuclear extended P	Stem-joint-complex N	Stem-joint-complex P	Incomplete N	Incomplete P
0–4[b]	325	1.04	367	1.02	380	0.81[a]	47	0.82[a]
5–9	558	1.67	312	1.48	139	1.56	28	1.10[a]
10–14	601	1.20[a]	218	0.99	70	0.97	17	0.98
15–19	571	0.93	182	0.89	33	0.71	11	0.69
20–24	476	0.65	123	0.52	43	0.48	9	0.07
25–29	374	0.33	101	0.32	69	0.24	6	0.00
30+	183	0.10	55	0.09	47	0.06	1	0.00
Total	3089	0.96	1358	0.97	781	0.84	119	0.79

	Percentage without live birth in the past five years			
0–4[b]	22	29	37	40
5–9	10	16	14	32
10–14	28	32	33	35
15–19	41	40	52	55
20–24	54	66	56	89
25–29	73	75	81	100
30+	91	93	96	100

N Number of respondents.
P Average number of children born in the past five years.

[a] Significantly higher or lower ($\alpha \leq 0.05$) than other group averages.
[b] Because of truncation, most of these women could not have been exposed for full five years.

NOTE: As this table includes only women still in their first marriage, the totals agree with the first line of table 5, not with the total lines of tables 5–8.

ethnic groups; and urban-rural differences were also noted. If these social, cultural and economic characteristics are associated with differences in reproductive behaviour, as may be expected, by disregarding them we would be likely to attribute differences in, say, fertility (or lack of them) observed between various types of households to the fact that the respondent is a resident in a household of a given type whereas the true underlying cause may be due to the particular dominant socio-economic characteristics of that type of households (say, disproportionate representation of better educated wives).

To minimize such possibility we use ANOVA and MCA procedures as described earlier. We proceed with the assessment of the effects of the independent factors (socio-economic characteristics) after an adjustment for two covariates – metric independent variables – namely, age at marriage of the respondent and duration of marriage, in that order.

The categorical variables used in the model will be those that were found in the analysis of the characteristics of the households to vary significantly between the various household types: residence, standard-of-living score of the household, education of the respondent, and ethnic group. After these four variables are introduced, household type is entered last.

It is the practice to obviate significant two-way interactions by combining pairs of categorical variables as sets of joint variables if necessary. Such treatment was required in the ANOVA for births in the past five years since the education and household type categories had an interaction significant at the .04 level. Accordingly, the categorical variables were as follows:

Residence	–	Colombo
		Other urban
		Rural
Standard of living	–	Under 5 points
		5–9 points
		10 points or more
Ethnic group	–	Sinhalese
		Sri Lanka Tamil
		Moor
Education with household type	–	No schooling, nuclear household
		No schooling, extended nuclear
		No schooling, stem-joint-complex
		1–5 years school, nuclear household
		1–5 years school, extended nuclear
		1–5 years school, stem-joint-complex
		6 or more years, nuclear household
		6 or more years, extended nuclear
		6 or more years, stem-joint-complex.

The analysis does show that the variables used are highly significant (table 13). The covariate raw regression coefficients are both negative. The effect on recent fertility of the age at marriage, though statistically significant, was negligible compared to the additional and much more obvious effect of the second covariate, duration of marriage. Every added year of marriage duration for the same marriage age therefore decreases the mean number of children born in the preceding five years.

Of the categorical variables, residence was introduced first; urban had lower fertility than rural, Colombo lower than other urban, and adjustment for the covariates did not change the relationships appreciably, reducing the spread from 0.15 child to 0.13. Standard-of-living showed the expected differentials, but here adjustment for the covariates and residence reduced the spread considerably, from 0.41 to 0.19. Among the ethnic groups, Moor fertility was found to be much higher than Sinhalese as expected, with Sri Lanka Tamil intermediate; here too the adjustment for the preceding variables considerably reduced the spread.

As mentioned, it was necessary to take education and household type as a joint variable. While it is very clear from the table that the higher the education the lower the fertility, the interpretation for household type is less clear. However, except for women with six or more years' schooling, the respondents in nuclear households have had the highest fertility and those in stem-joint-complex the lowest.

We now apply the same technique in the analysis of births to date to women who have been married less than five years. Here it was unnecessary to form any joint variables since no two-way interactions were significant. In fact, except for the covariates practically none of the F values were significant, probably because only 1059 cases were involved; moreover all of the adjusted results were non-monotonic. The grand mean was 0.95. The covariate raw regression coefficients were – .013 for age at marriage and + .376 for years since marriage, both plausible for this particular group. The unadjusted and adjusted deviations for the categorical variables were as follows:

	Unadjusted deviation	Adjusted deviation
Residence		
Colombo	+ 0.04	+ 0.04
Other urban	– 0.03	+ 0.05
Rural	0.00	– 0.01
Standard of living		
Under 5 points	– 0.02	0.01
5–9 points	+ 0.05	+ 0.02
10+ points	– 0.05	– 0.03
Education		
No schooling	+ 0.10	+ 0.02
0–5 years	– 0.03	– 0.05
6+ years	0.00	+ 0.02
Ethnic groups		
Sinhalese	+ 0.02	+ 0.02
Sri Lanka Tamil	– 0.08	– 0.11
Moor	– 0.10	– 0.04
Household type		
Nuclear	+ 0.09	0.00
Nuclear extended	+ 0.07	+ 0.04
Stem-joint-complex	– 0.15	– 0.03

Note that the *unadjusted* deviations for household type do conform to the means in the first row of figures of table 12; for example, 0.95 + 0.09 = 1.04.

Table 13 Analysis of variance and multiple classification analysis of births in the past five years to eligible respondents who have been married at least five years and who have been continuously in their first marriage, SLFS 1975

A Analysis of variance

Source of variation		Sum of squares	Significance of F
Covariates		1177.62	0.000[a]
Age at marriage		4.62	0.007[a]
Years since marriage		1172.99	0.000[a]
Main effects		68.14	0.000[a]
Residence		13.35	0.000[a]
Standard of living		25.36	0.000[a]
Ethnic group		7.94	0.002[a]
Education with household type		21.50	0.000[a]
Two-way interactions[b]		33.24	0.758
Explained		1278.99	0.000[a]
Residual		2558.30	
Total		3837.29	
Covariate			
Age at marriage	0.007[c]		
Current age	−0.072[c]		

B Multiple classification analysis

Grand mean = 0.95

		Unadjusted		Adjusted for covariates and independents	
Variable and category	N	Deviation	*Eta*	Deviation	*Beta*
Residence					
Colombo	269	−0.13		−0.11	
Other urban	531	−0.05		−0.06	
Rural	3280	+0.02		+0.02	
			0.04		0.04
Standard of living					
Under 5 points	2015	+0.14		+0.06	
5–9 points	1380	−0.07		−0.02	
10+ points	685	−0.27		−0.13	
			0.16		0.07
Ethnic group					
Sinhalese	581	−0.04		−0.02	
Sri Lanka Tamil	559				
Moor	285	+0.26			
			0.09		
Education and household type					
None					
Nuclear	581	+0.03		+0.16	
Nuclear extended	170	−0.17		−0.07	
Stem-joint-complex	77	−0.53		−0.15	
1–5 years					
Nuclear	1199	0.00		+0.03	
Nuclear extended	373	+0.11		−0.01	
Stem-joint-complex	151	−0.12		−0.05	
6+ years					
Nuclear	935	+0.01		−0.06	
Nuclear extended	430	−0.02		−0.10	
Stem-joint-complex	165	+0.19		−0.02	
			0.10		0.08
Multiple R squared					0.325

[a] Significant at $\alpha \leqslant 0.05$.
[b] Detailed interactions not shown; none were significant at 0.10 level.
[c] Raw regression coefficient.

Table 14 Analysis of variance and multiple classification analysis of contraceptive score of eligible respondents who are neither pregnant nor infecund and who have been continuously in their first marriage, SLFS 1975

A Analysis of variance

Source of variation		Sum of squares	Significance of F
Covariates		351.09	0.000[a]
Age at marriage		5.20	0.024
Years since marriage		71.65	0.000[a]
Number of living children		274.23	0.000[a]
Main effects		246.50	
Residence		42.36	0.000[a]
Standard of living		36.96	0.000[a]
Education		78.96	0.000[a]
Ethnic group		81.59	0.000[a]
Household type		6.63	0.039[a]
Two-way interactions[b]		57.94	0.043[a]
Explained		655.53	0.000[a]
Residual		3979.35	
Total		4634.88	
Covariate			
Age at marriage	−0.008[c]		
Current age	+0.017[c]		
Living children	+0.160[c]		

B Multiple classification analysis

Grand mean = 0.82

Variable and category	N	Unadjusted Deviation	*Eta*	Adjusted for covariates and independents Deviation	*Beta*
Residence					
Colombo	282	+0.27		+0.28	
Other urban	518	+0.09		+0.14	
Rural	3151	−0.04		−0.05	
			0.08		0.09
Standard of living					
Under 5 points	1848	−0.10		−0.08	
5–9 points	1397	+0.09		+0.07	
10+ points	705	+0.08		+0.06	
			0.09		0.07
Education					
None	599	−0.17		−0.17	
1–5 years	1522	−0.04		−0.07	
6+ years	1830	+0.09		+0.15	
			0.09		0.14
Ethnic group					
Sinhalese	3159	+0.07		+0.07	
Sri Lanka Tamil	528	−0.29		−0.28	
Moor	264	−0.28		−0.33	
			0.13		0.14
Household type					
Nuclear	2313	+0.07		+0.03	
Nuclear extended	1033	−0.05		−0.03	
Stem-joint-complex	605	−0.18		−0.08	
			0.08		0.04
Multiple R squared					0.129

[a] Significant at $\alpha \leqslant 0.05$.
[b] Detailed interactions not shown: none were significant at 0.05 level.
[c] Raw regression coefficient.

Table 15 Multiple classification analysis of proportion of contraceptive use (any method) by eligible respondents who are neither pregnant nor infecund and who have been continuously in their first marriage, SLFS 1975

Grand mean = 0.44

		Unadjusted		Adjusted for covariates and independents	
Variable and category	N	Deviation	*Eta*	Deviation	*Beta*
Residence					
Colombo	282	+0.10		+0.09	
Other urban	518	+0.05		+0.06	
Rural	3151	−0.02		−0.02	
			0.07		0.07
Standard of living					
Under 5 points	1848	−0.07		−0.04	
5–9 points	1397	+0.05		+0.03	
10+ points	705	+0.07		+0.04	
			0.13		0.08
Education					
None	599	−0.12		−0.16	
1–5 years	1522	−0.04		−0.04	
6+ years	1830	+0.07		+0.09	
			0.14		0.18
Ethnic group					
Sinhalese	3159	+0.04		+0.04	
Sri Lanka Tamil	528	−0.18		−0.18	
Moor	264	−0.17		−0.16	
			0.18		0.17
Household type					
Nuclear	2313	+0.02		+0.01	
Nuclear extended	1033	−0.03		−0.02	
Stem-joint-complex	605	−0.05		−0.02	
			0.06		0.03
Multiple R squared					0.122

The MCA technique has also been applied in the analysis of contraceptive use. For this purpose, it was necessary to exclude all women who were pregnant at the time of the survey or who stated that they were infecund (other than by contraceptive sterilization) as well as excluding those not continuously married. However, women who were married less than five years were not excluded. The covariates chosen were age at marriage and years since marriage as before, and an additional covariate was number of living children, since it is known that in many Third World countries and particularly in Sri Lanka (see SLFS *First Report*, table 4.4.2) the use of contraception increases sharply with the number of living children.

The choice of dependent variable presented a problem. One alternative was to choose simply the proportion using any contraceptive method, traditional or efficient. In effect the dependent variable would be the dichotomous variable taking the value 0 if no contraception was currently used, 1 if any contraception method was being used. The use of such dichotomous variables is questionable, particularly if the resulting proportion is close either to 0 or 1, though in this case as will be seen the grand mean is 0.44 (admittedly for some individual categories the mean is much less). A second disadvantage with this dichotomous variable is that all forms of contraception, whether the 'safe period' method on one hand or virtually 100 per cent effective sterilization on the other, are treated the same.

The second alternative, therefore, was to formulate a somewhat crude contraceptive 'score', using 0 for no contraception, 1 for any traditional method, 2 for an efficient method other than sterilization, 3 for sterilization whether female or male. This score is admittedly crude, both because it cannot exactly evaluate the various contraceptive methods and because separate groups of women can have similar mean scores even with different mix of methods.

The MCA program produced rather similar results for each of these dependent variables. Table 14 shows the ANOVA and MCA results for the case where the contraceptive score was used, while table 15 shows only the MCA portion of the results for use of the dichotomous variable.

As expected, the number of living children, though

processed as the last covariate, accounted for a very large portion (over 40 per cent) of the explained variation; the years since marriage had captured a moderate part and age at marriage a relatively small part.

Each of the categorical variables, except household type, showed highly significant effects, with marked deviations from the grand mean both before and after adjustments. As expected, urban residents were found more likely to use contraception than rural, respondents in high standard-of-living homes more than those in poor, better educated more than poorly educated, and Sinhalese more than Tamils or Moors.

The effect of household type, on the other hand, did not show any real significance, whether the contraceptive score or the dichotomous variable was used as dependent variable. The level of significance for the household type results with the score variable appeared at first to be acceptable. However, when the women were subdivided into those married less than five years, for whom the mean contraceptive score was 0.42, and those married five years or more for whom it was 0.93, the household type differences for the latter group became insignificant ($\alpha = 0.726$). For the women married less than five years, it was necessary, because of significant interaction, to form a joint variable combining household type with urban-rural residence. This joint variable showed a significant effect ($\alpha = 0.005$) but examination of the results showed no clear indication of difference in contraceptive use by household type.

MCA applications were attempted in relation to two additional phases of reproductive behaviour – age at marriage and length of the first birth interval. In both instances, serious questions are involved.

For one thing, the analysis of either of these dependent variables must be limited to women recently married, and we have already seen in the case of number of births to women married less than five years that the number of respondents may be too small to generate statistically significant results. Limiting the analysis of age at marriage or first birth interval to women married less than five years also had this unfortunate result.

In the case of analysing age at marriage by household type, we also run into the question as to whether the type of household *into which* a woman married is the same type of household *from which* she marries, as pointed out earlier. We know only the household *into which,* whereas what might be more meaningful is the household type *from which,* which we cannot obtain from the data.

In the case of first birth interval, we fail to get information on women whose first children are not yet born, and as we see from the lower part of table 12 we miss well over 20 per cent of the women if we limit ourselves to women married in the last five years; this percentage varies considerably between household type.

Nevertheless, we present in abridged form in tables 16 and 17 the results of the analyses. We have excluded women married five years or more, and in the case of first birth interval have dropped not only cases where there was no birth but also cases where the first birth interval was less than seven months or was negative. In each analysis age at marriage was a covariate, and months since marriage was also a covariate in analysis of first birth interval.

In the analysis of marriage age, neither the results for residence nor for household type are significant, nor do they progress monotonically. The results for the other variables are significant and reasonable, showing marriage age higher for the better educated women and those in the more prosperous homes, Tamils marrying earlier than Sinhalese and Moors still earlier.

In the analysis of first birth interval, results for both household type and residence are significant, those for the other categorical variables not significant. It should be noted here that nuclear households show shortest birth intervals, and intervals in urban homes are shorter than in rural. The decidedly shorter intervals in nuclear homes are consistent with the higher fertility there.

Differentials in Education by Household Type

At various points it has been mentioned that eligible respondents in nuclear extended and stem-joint-complex households appear to have higher than average education levels. Obviously, most women acquire their education before marriage, so the question is what, if anything, there could be that tends to bring better educated women into these households. In order to research this, it was decided to apply the MCA technique. The dependent variable was years of respondents' schooling, with years in excess of ten taken as ten.[12] The covariates used were age at marriage and current age, in that order, and the categorical variables were residence, standard of living, ethnic group and household type.

The results of the analysis appear in table 18. It was found, as might be expected, that over one-half the explained variation lay in the higher age at which the better educated women had married, and almost a quarter in the joint variable for standard of living and ethnic group, with the women in the more prosperous homes being better educated and with Sinhalese and Sri Lanka Tamils being about equal in education with Moors far behind. Current age and urban vs rural residence were also significant factors, but household type of itself was found to have virtually no significance.

Tea-Estate Households

As mentioned earlier, the tea-estates in the central highlands of Sri Lanka present a special situation, largely because the type of housing quarters given the tea workers by the estate management often restricts space in such a way as to prevent extended family living. According to Jayaraman (1975: 21–4), the living quarters often consist of single-room units arranged side by side in a long concrete structure called a 'line', with each married male worker with his family receiving one unit. Jayaraman points out that there is a likelihood, but no assurance, that inter-related married couples and their families will receive adjacent line rooms. While he says that some extended families exist, 'the pattern of independent residence, motivation toward economic independence, accommodation facilities provided by the estate management and conflicts within the joint

[12] It has been observed that years of schooling in excess of ten are often not university schooling but apparently vocational training.

Table 16 Multiple classification analysis of age at marriage of eligible respondents married less than five years who have been continuously in their first marriage, SLFS 1975

Grand mean: 21.92 years

Variable and category	N	Unadjusted		Adjusted for covariates and independents		Significance of variable
		Deviation	*Eta*	Deviation	*Beta*	
Residence						0.382
Colombo	71	−0.16		−0.76		
Other urban	152	+0.46		+0.29		
Rural	836	−0.07		+0.01		
			0.04		0.05	
Standard of living						0.000
Under 5 points	446	−1.68		−1.49		
5–9 points	413	+0.70		+0.56		
10+ points	200	+2.29		+2.16		
			0.35		0.31	
Education						0.000
None	66	−1.71		−0.49		
1–5 years	277	−1.62		−0.72		
6+ years	716	+0.79		+0.33		
			0.26		0.11	
Ethnic group						0.000
Sinhalese	846	+0.43		+0.37		
Sri Lanka Tamil	143	−1.45		−1.09		
Moor	70	−2.28		−2.24		
			0.20		0.17	
Household type						0.247
Nuclear	321	−0.45		+0.14		
Nuclear extended	364	0.28		+0.18		
Stem-joint-complex	374	0.11		−0.29		
			0.07		0.05	
Multiple R squared						0.175
Covariate						
Months since marriage		−0.018[a]				

[a] Raw regression coefficient; $\alpha = 0.016$.

family explain to a considerable extent, the persistence of the elementary [ie nuclear] family system among Tamilian estate labourers' (Jayaraman 1975: 128). In the three estates he studied he found that 71.6 per cent of the residential units are elementary households.

In using SLFS data for the tea-estate households, we have selected only households with at least one eligible respondent and where the eligible respondent was Indian Tamil, in that way excluding the household of most of the managerial and clerical employees. Here we find that 64 per cent of the households were nuclear, 23 per cent were either nuclear extended or stem-joint-complex, and 13 per cent incomplete. The mean number of household members was 5.4, lower than for other Sri Lanka areas of residence. The mean number of rooms was 2.0, which disagreed with Jayaraman's observation, possibly because any small kitchen was to be counted as an additional room in the SLFS. The mean standard-of-living score was 2.5 points, in contrast with an 8.3 mean for Colombo, 6.7 for other urban areas and 4.6 for non-estate rural areas. Only 2 per cent of the eligible respondents had more than five years of schooling, and 57 per cent had no schooling. Clearly, the estate workers are a disadvantaged community. An MCA of estate respondents' fertility was attempted but failed to give significant results, because of the paucity of cases other than in the nuclear, low living standard and low education categories.

3.3 BANGLADESH

Introduction

Bangladesh is a densely populated country located largely in the deltaic land between India and Burma, bordered from the south by the Bay of Bengal. The population size was estimated to be around 90 million in 1980; the population density reached about 625 persons per sq km, one

Table 17 Multiple classification analysis of first birth interval of eligible respondents married less than five years who have been continuously in their first marriage. Limited to respondents who have had a birth and whose first birth was not less than seven months after marriage, SLFS 1975

Grand mean: 15.75 months

Variable and category	N	Unadjusted		Adjusted for covariates and independents		Significance of variable
		Deviation	*Eta*	Deviation	*Beta*	
Residence						0.037
Colombo	59	−0.36		−0.76		
Other urban	112	−1.97		−1.82		
Rural	657	+0.37		+0.38		
			0.10		0.09	
Education and standard of living						0.085
None						
Under 5	37	+3.20		+2.12		
5–9	8	−3.99		−3.76		
10+	4	−4.50		−5.73		
1–5 years						
Under 5	150	+0.41		+0.59		
5–9	61	+2.65		+1.78		
10+	6	−5.27		−4.65		
6+ years						
Under 5	163	+0.43		+0.77		
5–9	263	−1.07		−1.03		
10+	137	−0.37		−0.37		
			0.16		0.14	
Ethnic group						0.199
Sinhalese	668	−0.23		−0.25		
Sri Lanka Tamil	110	+1.34		+1.28		
Moor	51	+0.14		+0.52		
			0.06		0.06	
Household type						0.000
Nuclear	261	−0.71		−1.52		
Nuclear extended	295	−0.09		−0.04		
Stem-joint-complex	272	+0.78		+1.50		
			0.07		0.14	
Multiple R squared						0.156
Covariates						
Age at marriage		−0.164[a]				
Months since marriage		+0.175[b]				

[a] Raw regression coefficient; $\alpha = 0.012$.
[b] Raw regression coefficient; $\alpha = 0.000$.

of the highest in the world. The population is mainly rural with only 7 per cent living in urban areas.[13] The overwhelming majority – about 85 per cent – of the population are Muslims; Hindus form 13 per cent and Buddhist and Christians constitute just under 2 per cent of the population. Only about 22 per cent of persons aged five years and over are literate (30 per cent among males and just under 14 per cent among females).

Until about the mid-1970s the continuation of high fertility and moderate declines in mortality maintained a high rate of natural population growth of 2.9 – 3.4 per cent a year.[14] The crude birth rate in the 1970–5 period was estimated as 47.4 and the crude death rate as 20.5 per 1000 population (United Nations 1979).

[13] Unless stated otherwise, the data are based on the 1974 census of Bangladesh.

[14] Estimation of mortality and fertility levels and trends in Bangladesh is rather difficult because complete registration of vital events does not exist and census and survey data are characterized by very extensive misreporting of age, understatement of parity and other such problems. Extensive but unrecorded international migration and fluctuations of fertility and mortality rates in the years of natural disasters and political upheavals further complicate analyses of the available data. The recent report of the Committee on Population and Demography of the (USA) National Research Council, Panel on Bangladesh (*Estimation of Recent Trends in Fertility and Mortality in Bangladesh* (1981). Washington DC: National Academy Press) concluded that the rate of natural increase in the recent past has been in the range of 2.9–3.4 per cent a year for most years during the period from the early 1960s to 1975 (p 4).

Table 18 Analysis of variance and multiple classification analysis of years of education of eligible respondents continuously in their first marriage, SLFS 1975

A Analysis of variance

Source of variation		Sum of squares	Significance of F
Covariates		15 822.22	0.000[a]
Age at marriage		12 125.80	0.000[a]
Current age		3 696.41	0.000[a]
Main effects		6 650.27	0.000[a]
Residence		1 088.05	0.000[a]
Standard of living with ethnic group		5 427.25	0.000[a]
Household type		14.97	0.371
Two-way interactions[b]		316.26	0.231
Explained		22 788.74	0.000[a]
Residual		38 935.92	
Total		61 724.66	
Covariate			
Age at marriage	0.324[c]		
Current age	−0.100[c]		

B Multiple classification analysis

Grand mean = 5.03 (years)

Variable and category	N	Unadjusted Deviation	*Eta*	Adjusted for covariates and independents Deviation	*Beta*
Residence					
Colombo	354	+1.40		+0.62	
Other urban	695	+1.02		+0.60	
Rural	4163	−0.29		−0.15	
			0.17		0.09
Standard of living and ethnic group					
Under 5					
Sinhalese	1901	−1.07		−0.84	
Sri Lanka Tamil	399	−1.26		−0.84	
Moor	162	−3.02		−2.45	
5–9					
Sinhalese	1489	+0.64		+0.51	
Sri Lanka Tamil	227	+0.28		+0.24	
Moor	119	−1.31		−1.25	
10+					
Sinhalese	693	+2.54		+1.92	
Sri Lanka Tamil	149	+2.44		+2.10	
Moor	77	+0.50		+0.17	
			0.41		0.32
Household type					
Nuclear	3080	−0.49		−0.04	
Nuclear extended	1355	+0.56		+0.02	
Stem-joint-complex	777	+0.98		+0.12	
			0.18		0.02
Multiple R squared					0.364

[a] Significant at $\alpha \leqslant 0.05$.
[b] Detailed interactions not shown: none were significant at 0.05 level.
[c] Raw regression coefficient.

Marriage in Bangladesh is universal; marriages of females are heavily concentrated in the 15–19 age group, and less than one per cent of females have never married by the age of 30 years. Due to the comparatively large age difference between husbands and wives, typically 8–10 years (Ruzicka and Chowdhury Alauddin 1978: 17–33), the proportion of never-married males does not drop under two per cent until after age 45. The singulate mean age at marriage as calculated from proportions never married in each age group recorded in 1974 census, was still very low – 15.9 years for females and 23.9 years for males, though there is some evidence of a slight increase in age at first marriage since 1974.

Marriage dissolution by separation and divorce is not infrequent and occurs particularly in the early stages, that is within the first or second year after marriage. According to the *Bangladesh Fertility Survey 1975: First Report* (Ministry of Health and Population Control 1978: 55–6) 11.6 per cent of first marriages of all ever-married respondents were dissolved by divorce or separation. Divorce is more likely to occur in a Muslim than in a Hindu family; the Muslim concept of marriage is of a contract between kin or lineages rather than between individuals and hence has provisions for nullification in cases of serious maladjustment. Hindu marriage, by contrast, is considered an eternal union which cannot be terminated except by death of one of the partners.

Fertility within marriage continues to be high; there is virtually no childbearing outside marriage. At the time of the Bangladesh Fertility Survey (BFS), the use of contraception was still very low – only 9.6 per cent of exposed respondents (ie currently married, non-pregnant, fecund women) reported current use of contraception. The highest percentage of current users – 14.3 per cent – was found among women aged 35–44; this percentage increased to 16.1 in the same age group if the respondent had five or more surviving children. There was a marked difference between rural and urban women: 8.5 per cent of rural in contrast to 22.6 per cent of urban exposed respondents reported current use of contraception (Ministry of Health and Population Control 1978: 78–80).

Such generally low levels of volitional fertility control leave virtually only sexual abstinence and biological mechanisms to regulate childbearing effectively. Sexual abstinence is comparatively short after childbirth – usually around 40 days (Ruzicka and Bhatia 1982). Breastfeeding is almost universal and extends over a long period: the BFS estimated the average duration of breastfeeding as 17 months (somewhat longer in the rural than urban areas) (Ministry of Health and Population Control 1978: 85). Consequently, post-partum amenorrhoea is usually long, extending, according to some observations, on average over 17 months (Bhatia and Ruzicka 1979). Under such conditions the inter-live-birth interval is rather a long one: in a rural sample of women the median interval was found to be 33 months but was considerably shorter for younger women (under age 30) than for older ones (aged 30 and more). Of the younger women 75 per cent had the next birth within 36 months but only 36 per cent of the older women delivered a child within that period (Chen *et al* 1974; Osteria *et al* 1978). Under the conditions of what may be considered 'natural fertility', levels of fertility have remained rather high, reaching a total fertility rate of somewhere between 6.8 and 7.3 children on average over the 15 years or so prior to 1975. There is no firm evidence of any significant trend in fertility during the 1960s to 1975, the year in which the BFS was conducted (Committee on Population and Demography 1981:52).

Table 19 Distribution of households by type and average number of members, BFS 1975[a]

Household	Number of households	%	Average number of persons
Nuclear	2631	45.0	5.3
Nuclear extended A	717	12.2	7.2
Nuclear extended B	669	11.4	6.8
Stem-joint-complex	899	15.4	10.2
Incomplete	811	13.8	3.8
Polygamous	127	2.2	9.7
All	5854	100.0	6.3

[a] Data from the household schedule.

Social Organization and Family Structure

Some understanding of the domestic social organization, particularly in the rural areas of Bangladesh where most people live, is necessary for the understanding and interpretation of the results of the analyses that follow. In all areas except for a small minority of largely tribal groups, the domestic organization is patriarchal; descent is patrilineal and residence is patrilocal. Among the two largest groups, the Muslims and the Hindus, a bride upon marriage normally moves to her husband's locality and becomes part of his lineage. Typically, sometime after marriage or after the birth of the first child the son would establish his own household, even if this might in practice entail no more than constructing a new hearth near the parents' dwelling (Cain 1978).

The modal household structure, as shown in table 19, is nuclear: the primary domestic group is usually composed of a man and his wife (or, occasionally, wives) and their children. Polygamy, though socially acceptable and legally permitted, is rather uncommon. In the BFS there were only 2.2 per cent of households in which at least one male was married to more than one wife.[15] On the other hand, there are numerous households where, in addition to the nuclear family unit, there are other members (not couples) present: these are either of the household head's generation (brother/s, sister/s) or of his parents' generation (widowed mother, mother-in-law, aunt) or both. The former type was found in 12.2 per cent and the latter in 11.4 per cent of BFS households. About one in six households was of a more complex type consisting of two or more married couples.

Although the BFS was based on a *de facto* population, absent family members listed on the household schedule were taken into consideration particularly to obtain a

[15] The BFS may not have captured all polygamous households; omitted were undoubtedly those instances where the husband had one wife in the surveyed household and another wife in the place of his (temporary) residence, say in the city or other place where he worked.

Table 20 Sex and age of the head of the household, by household type, BFS 1975[a]

	Nuclear	Nuclear extended		Stem-joint-complex	Incomplete	Polygamous	All
		A	B				
Household head: Male							
N	2614	710	634	893	411	127	5389
Age distribution (%)							
Under 30	13.8	12.0	31.8	7.1	58.4	9.5	17.8
30–39	31.7	21.7	39.0	14.3	16.1	33.3	27.2
40–49	26.6	22.3	19.4	14.4	9.2	18.3	21.6
50–59	16.4	20.6	7.3	23.9	5.8	16.7	16.3
60 and over	11.5	23.5	2.5	40.3	10.5	22.2	17.0
Household head: Female							
N	17	7	35	6	400		465
Age distribution (%)							
Under 20	17.6	14.3	0.0	0.0	2.0		2.6
20–29	29.4	57.1	0.0	0.0	17.3		16.7
30–39	29.4	14.3	8.6	0.0	28.3		26.2
40–49	17.6	14.3	31.4	0.0	27.0		26.4
50–59	5.9	0.0	34.3	83.3	12.8		14.8
60 and over	0.0	0.0	25.7	16.7	12.8		13.3

[a] Data from the household schedule.

more realistic number of incomplete (zero-couple) households that would have been otherwise artificially increased by cases where the husband was only temporarily absent (see appendix A). Despite that, almost 14 per cent of BFS households fall into the category of incomplete households.

The typical family life cycle, in particular in the rural areas, is one in which the newly married couple starts its married life in the husband's parental household. The partitioning of such a complex household occurs in some instances a few years after marriage, often after the birth of one or several children. The new nuclear family unit separates and establishes itself as an economically independent unit – very often, in the rural areas, in the same *bari*.[16] Quite frequently, however, the extended family continues intact during the life of the family head (patriarch) and the split occurs at first after the patriarch's death (usually along with the division of inheritance, particularly land property). In such instances the widowed wife of the patriarch would take up residence in the family of one of her sons, usually the youngest (Aziz 1979; Cain 1978). The family life cycle has, obviously, many variations depending, *inter alia,* on the economic and social position of the family in the village. By and large, however, the above cycle normally applies in both Muslim and Hindu communities.

Characteristics of Household Types

The way various types of households come into existence determines to a large extent their respective sizes as well as other demographic and social characteristics. Nuclear families and single person or incomplete households will generally have the smallest size whereas various types of stem-joint-complex families will be the largest ones. In the BFS, the average household size was 6.3 persons which was almost one person more than the average size of nuclear households and nearly three persons more than the average for incomplete households. In contrast, the size of stem-joint-complex families and the households with at least one polygamously married husband exceeded the overall average by about 50 per cent (table 19). Of the 5854 households in the BFS,[17] 92 per cent were headed by a male and 8 per cent by a female.

The median age of the male household head was 40 years (table 20). However, in complex households only one out of five was younger than 40 years and two out of five were aged 60 years and over thus yielding an average age of the male head of 53.5 years. In contrast, in purely nuclear families, 45.5 per cent of all male heads were under 40 years of age and merely 11.5 per cent were 60 years or older; on average, the male head of a nuclear family was 42.6 years old. The 411 incomplete households with a male as head consisted of 101 headed by a married man (whose wife was obviously absent but apparently not divorced or separated) aged, on average, 52 years; of 21 households with a divorced male as a head aged, on average, 35 years; and of 208 households with a single man as head, of the average age of 21 years.

It may be recalled that the household classification was generated by using information on all persons listed in the household schedule,whether present or absent. Some of

[16] A *bari* is a cluster of houses usually around the common yard accommodating families whose heads are related by blood or affinal connections. The *bari* members usually co-operate with each other, in particular in a crisis. Normally, the *bari* has no formally recognized head, but the oldest male and female members of the *bari* are shown respect and may be consulted in particular in various social and religious matters (Aziz 1979:24).

[17] Tables 19 and 20 are based on household schedules; hence they also contain households in which there was no eligible respondent.

Table 21 Distribution of households based on household schedule and eligible respondent schedule, BFS 1975

	Nuclear	Nuclear extended		Stem-joint-complex	Incomplete	Polygamous	All
		A	B				
All households	2631	—— 1386 ——		899	811	127	5854
Households without eligible respondent	262	—— 93 ——		35	324	5	719
Households with one or more eligible respondents	2369	—— 1293 ——		864	487	122	5135
Records not matched	29	—— 18 ——		16	12	1	76
Matched records	2340	657	618	848	475	121	5059
Percentage distribution:							
All households	45.0	12.2	11.4	15.4	13.8	2.2	100.0
Matched households with eligible respondents	46.2	13.0	12.2	16.8	9.4	2.4	100.0

the households that at the time of the interview were headed by a female may have been coded as such because the husband was listed as a *de jure* member but was temporarily absent. That this was clearly the case becomes apparent when we look at the marital status of the female heads. Out of the 400 incomplete households headed by a female 109 had a married head, aged, on average, 32.5 years; 280 had a widowed head aged, on average, 46 years. Only eight and three female heads were recorded as divorced (or separated) and as single respectively, in both instances aged, on average, about 33 years.

For further analysis we have to turn to those households in which there was at least one eligible respondent. This eliminated 719 households and, in addition, 76 households with eligible respondents where the household schedule could not be matched with the individual respondent's schedule (table 21). Of the eliminated households more than 50 per cent were, as one would expect, incomplete households. As a result, the subsequent information on household characteristics is biased in the sense that incomplete households are under-represented. Their proportion dropped from 13.8 per cent in the sample of all households to 9.4 per cent in the sample of matched households with eligible respondents.

Household size by family type and rural/urban residence of the set of households with which we shall be dealing in the subsequent analyses is set out in table 22. The households in Bangladesh are quite large with 6.7 members on average. In all types, urban households were larger than the rural ones. This may be partly due to housing shortage in the major towns and cities in Bangladesh. Also, in the rural setting, it is comparatively easier for a young couple to erect a hut in the parental compound (*bari*). Polygamous and complex households were, as might be expected, the largest with an average of about ten persons while purely nuclear and incomplete households were the smallest ones but still averaging between four and six persons.

Distribution of the households by rural/urban residence and religion is shown in table 23. There is only one marked difference between the two main religious groups, the Muslims and the Hindus: among the latter, both in rural and urban areas, complex households were more prevalent than among the former. As to the representation of other household types, the differences by religion were not

Table 22 Size of the households by type and urban/rural residence, BFS 1975[a]

Household type	Rural						Urban					
	N	(Max)[b]	Percentage distribution by number of members			Average	N	(Max)[b]	Percentage distribution by number of members			Average
			−5	6−10	11+				−5	6−10	11+	
Nuclear	1802	13	57.4	41.7	0.9	5.3	538	14	48.5	49.8	1.7	5.7
Nuclear extended:												
A	468	26	26.7	63.5	9.8	7.3	189	17	25.4	57.1	17.5	7.7
B	471	18	35.5	58.6	5.9	6.6	147	22	26.5	54.4	19.1	7.7
Stem-joint-complex	677	35	6.9	55.7	37.4	10.1	171	25	3.5	51.5	45.0	10.6
Incomplete	379	18	73.4	24.5	2.1	4.6	96	11	62.5	36.5	1.0	5.1
Polygamous	88	17	10.2	63.6	26.2	9.3	33	21	9.1	45.5	45.4	10.9

[a] Only households with at least one eligible respondent.
[b] (Max) = the highest recorded number of household members.

Table 23 Distribution of household types by urban/rural residence and religion, BFS 1975[a]

Household type	Rural				Urban			
	Muslim	Hindu	Other	All	Muslim	Hindu	Other	All
Nuclear	47.1	42.1	51.9	46.4	46.1	44.4	40.0	45.8
Nuclear extended:								
A	12.0	12.2	11.5	12.0	16.1	16.7	–	16.1
B	12.3	12.2	–	12.1	12.9	9.4	40.0	12.5
Stem-joint-complex	16.0	24.0	28.9	17.4	13.3	21.1	20.0	14.6
Incomplete	10.1	8.2	7.7	9.8	8.3	7.8	–	8.2
Polygamous	2.5	1.3	–	2.3	3.2	0.6	–	2.8
All households	3220	613	52	3885	989	180	5	1174

[a] Households with at least one eligible respondent.

Table 24 Household type by urban/rural residence and respondents' place of origin, BFS 1975

Household type	Present residence			
	Rural		Urban	
	N	% with urban childhood residence	N	% with rural childhood residence
Nuclear	1807	1.1	548	71.7
Nuclear extended:				
A	685	2.2	252	62.3
B	621	2.7	193	69.4
Stem-joint-complex	1289	1.7	300	62.3
Incomplete	432	1.9	112	68.8
Polygamous	177	2.8	78	68.7
All respondents	5011	1.7	1483	66.8

strongly marked except for a higher percentage of polygamous households among the Muslims.[18]

The distribution of types of households did not differ very markedly between urban and rural areas (table 23). The extended nuclear households – type A – were somewhat more common in the urban than in the rural areas – presumably as the urban nuclear families were called upon to accommodate relatives (for instance, younger siblings attending school). Stem-joint-complex families with two or more couples were more frequently found in the rural than urban areas – 17.4 as against 14.6 per cent respectively.

A large proportion of the urban population of Bangladesh has a rural origin. In the BFS sample, two-thirds of the 1483 urban respondents reported rural childhood residence; this, of course, need not apply to their husbands or other family members as well. Nevertheless, it is worth noting that the percentage of eligible women with a rural background did not differ significantly (at 0.05 per cent level) between various types of households (table 24). To what extent the background of the urban women may have modified their reproductive behaviour will be examined later in this chapter.

It is sometimes assumed that complex households are richer as more than one member is contributing to the family's wealth. Landholding may also be a factor keeping the family together. In the Bangladesh survey, most rural households owned the house in which the family lived (84 per cent) in contrast to 49 per cent of urban households (table 25). In the urban areas, the household most likely to own the house in which the family lived was a stem-joint-complex household (62 per cent); this contrasted sharply with less than a half of incomplete, nuclear and extended nuclear families (type A) owning a house. In the rural areas the differences in house ownership between households of various types were less pronounced. The lowest percentage of house-owning families was found among incomplete households but even there it reached 76 per cent. However, this information does not say anything about the type of the house owned; in the rural areas many of the 'houses' are merely shacks with walls of bamboo mats and a thatched roof.

The ownership of land, unfortunately, was inquired only of those households that were engaged in agricultural pursuits (table 26). Hence, the urban absentee landlord was

[18] Because of the small number of households of other religions the structural differences by household type are difficult to evaluate.

Table 25 Household types and ownership of house, by rural and urban location, BFS 1975

House ownership	Rural/ urban	Household type: Nuclear	Nuclear extended: A	Nuclear extended: B	Stem-joint-complex	Incomplete	Polygamous	All
Number of households[a]	R	1800	468	471	677	379	88	3885
	U	538	189	147	171	96	33	1174
Home ownership: percentages – answering YES								
House owned	R	87.7	79.7	85.4	80.2	75.7	94.3	84.1
	U	47.0	43.9	51.0	62.0	44.8	51.5	49.1
House rented	R	0.9	0.2	0.2	0.0	0.3	0.0	0.5
	U	36.8	38.1	27.9	19.3	18.8	27.3	31.6
Other	R	11.4	20.1	14.4	19.8	24.0	5.7	15.4
	U	16.0	18.0	21.1	18.1	34.4	21.2	18.9

[a] Households with at least one eligible respondent.

probably left out completely. Rural farming families formed almost two-thirds of all rural households; only a slightly higher percentage owned land if the family was complex (78 per cent) than if it was nuclear (72 per cent). The size of the landholding was not obtained in the survey and thus further details on landholding are not available. It is worth noting, however, that the largest proportion of families holding land was found among those where at least one member was polygamously married (94 per cent of such rural agricultural households owned land).

Similarly, of the 140 households engaged in agriculture, the highest proportion owning land was among the polygamous (all eight of such households), nuclear extended (86.7 per cent) and complex families (73.9 per cent), in contrast to only 63.2 per cent of purely nuclear and 40 per cent of incomplete households.

A similar picture of wealth distribution is obtained from the tabulation of ownership of various items by household type (table 27). Rural households were generally poorer than urban ones. In all instances, rural polygamous households were those most likely to possess any of the selected chattels; they were closely followed by complex households. At the bottom end of the scale were the nuclear and incomplete households, with the lowest proportions of ownership of any of the selected items. In the urban areas the relationship between household type and ownership was less pronounced. Once again, polygamous households and complex families were the richest (in terms of proportions claiming ownership of the selected items). However, not infrequently the smaller extended family was more likely to own some of the objects than the former two types of families. The purely nuclear and incomplete families were generally the poorest. It is very likely that the larger number of persons contributing to the family's wealth in the complex households is the reason for the larger number of items they owned.

The distribution of the respondents by educational achievement into household types has revealed patterns to some extent similar to those found with respect to wealth.

In the rural areas, significantly higher proportion of better educated respondents (and lesser percentage of those with no education) were found in the stem-joint-complex group of households. The lowest level of education was recorded among the respondents residing in the purely nuclear households.

In the urban areas the highest educational levels were found in the extended nuclear (type A) households with the complex households being close second. The lowest educational levels were in the incomplete and nuclear households (table 28).

Table 26 Agricultural households by household type, BFS 1975

Land ownership	Household type: Nuclear	Nuclear extended: A	Nuclear extended: B	Stem-joint-complex	Incomplete	Polygamous	All
Agricultural households	Percentage of all households						
R(N = 2426)	60.9	63.2	61.1	72.2	49.6	77.3	62.4
U(N = 140)	10.6	7.9	11.6	13.5	20.8	24.2	11.9
Land holding	Percentage of agricultural households owning land						
R	72.1	77.7	79.2	78.1	70.7	94.1	75.4
U	63.2	86.7	70.6	73.9	40.0	100.0	67.1

Table 27 Percentage distribution of assets by household type and urban or rural residence, BFS 1975

Of the list of nine items [a] the family owned	Family type						
	Nuclear	Nuclear extended		Stem-joint-complex	Incomplete	Polygamous	All
		A	B				
A Rural							
None	80.9	72.9	72.0	59.5	81.8	47.7	74.5
One	5.6	5.8	6.8	7.1	3.4	13.6	6.0
Two	8.1	9.4	8.1	13.3	6.6	12.5	9.1
Three	3.2	5.6	5.3	8.4	3.7	10.2	4.9
Four	1.1	3.2	4.9	6.1	2.4	8.0	2.9
Five	0.6	2.4	2.1	2.5	0.3	3.4	1.4
Six and more	0.5	0.6	0.8	3.0	1.9	4.5	1.2
N (families)	1802	468	471	677	379	88	3885
B Urban							
None	57.4	41.3	42.2	39.2	70.8	36.4	50.8
One	4.5	3.2	10.2	5.3	1.0	0.0	4.7
Two	10.2	9.0	11.6	14.0	6.3	15.2	10.6
Three	5.4	9.0	10.2	8.2	5.2	18.2	7.3
Four	7.6	8.5	8.8	8.2	2.1	3.0	7.4
Five	5.6	9.5	6.8	10.5	4.2	12.1	7.2
Six and more	9.2	19.6	10.3	14.1	8.3	15.2	11.9
N (families)	538	189	147	171	96	33	1174

[a] Items selected: radio, boat, tea-set, iron, bicycle, watch, sewing-machine, bedstead, other 'modern' items. Not considered in the table was ownership of car (r 14; u 24); TV set (r 1; u 38); refrigerator (r 1; u 40); motorcycle (r 6; u 25) (in brackets is the number of rural (r) and urban (u) families reporting ownership of the item specified).

Table 28 Percentage distribution of eligible respondents by household type, residence and educational level, BFS 1975

Education of respondent and residence	N	Household type					
		Nuclear	Nuclear extended		Stem-joint-complex	Incomplete	Polygamous
			A	B			
A Rural							
None	3964	38.6	13.2	12.3	23.3	8.9	3.7
1–5 years	877	28.6	15.6	11.4	33.7	7.5	3.2
6+ years	156	14.7	14.7	16.7	44.2	7.1	2.6
All	4997	36.1	13.7	12.3	25.8	8.6	3.5
B Urban							
None	894	39.3	13.8	13.5	17.9	9.6	5.9
1–5 years	339	36.3	20.1	12.7	20.6	5.0	5.3
6+ years	246	30.1	24.0	11.8	27.6	3.7	2.8
All	1479	37.1	16.9	13.0	20.1	7.6	5.3

An analysis of fertility by household type must consider variations among households of different types by such demographic characteristics of eligible respondents as current age, age at first marriage, and status of the first marriage. Table 29 sets out the age distribution of the eligible respondents by family type. There are marked differences between the six household types in this respect: the youngest respondents (under age 25) were more often present in stem-joint-complex and polygamous households (56 and 53 per cent of all respondents respectively) than in purely nuclear and incomplete households (34 and 23 per cent respectively). In contrast, incomplete households contained a larger proportion of older respondents (35 years and above) than any other household type.

The age distribution of respondents by household type is a product of the family formation pattern and the family life cycle stage discussed in the earlier part of this section. This aspect emerges even more clearly if we set the percentage distribution across the rows (table 30). A larger proportion of the younger respondents (under the age of 25 years) than overall average is concentrated in the complex households, that is in the type in which most newly married

Table 29 Percentage distribution of eligible respondents by age and household type, BFS 1975

Age group	Nuclear	Nuclear extended		Stem-joint-complex	Incomplete	Polygamous	All
		A	B				
Under 20	12.7	27.3	26.2	34.6	11.0	29.8	22.4
20–24	21.5	22.1	22.6	21.4	11.9	23.1	21.0
25–29	22.0	15.7	16.6	12.1	13.8	14.9	17.0
30–34	17.5	10.7	10.7	6.1	15.3	11.0	12.4
35–39	12.7	9.8	7.6	6.5	16.2	8.2	10.2
40–44	8.0	9.2	7.9	11.0	16.7	7.5	9.6
45–49	5.6	5.2	8.5	8.4	15.1	5.5	7.4
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	2355	937	814	1589	544	255	6494
Under 25	34.2	49.4	48.8	56.0	22.9	52.9	43.4
35 and over	26.3	24.2	24.0	25.9	48.0	21.2	27.2

couples start their family life cycle. This household type also shows a higher concentration of the oldest eligible respondents, undoubtedly due to the presence of the parental generation. Higher concentrations of middle aged women (25–39 years) in purely nuclear households point to the stage of the life cycle when the family has separated itself from the more complex household but has not yet married sons to bring their wives into the household.

The heavier concentration of the oldest eligible women in incomplete households is due to the fact that many of them are widows, as was shown in the earlier tables.

The presence of a mother-in-law (less often, in Bangladesh, of a mother) of the wife in the extended nuclear families (type B) only slightly increased the proportion of eligible respondents aged 40 years and over in this household category.

A set of tabulations probing the differences by age at first marriage, status of first marriage and marriage duration between the various types of households is presented in tables 31–33.

The highest proportion of eligible respondents who were married for less than five years was found in the stem-joint-complex (30.7 per cent) and polygamous (23.5 per cent) households (table 31). The lowest proportions of such respondents were in incomplete households and purely nuclear families (5.9 and 8.4 per cent respectively).

Of all eligible respondents almost four-fifths still lived in an intact first marriage (table 32). In about the same proportion the first marriage was dissolved by the husband's death or by divorce (10 and 11 per cent respectively). Not surprisingly, the widowed and divorced women were concentrated in incomplete households. A relatively high proportion of women whose first husband had died was also found in the extended nuclear households where the mother-in-law (or, less often, the wife's mother) was present.

The frequency with which respondents whose first marriage ended in divorce were found in extended nuclear (type A) and polygamous families has two different causes. In the former case, of the 156 women whose first marriage ended in divorce, 96 were still divorcees at the time of the survey and, presumably, currently sheltered in their parents' or brother's household. Of the 45 divorced respondents now living in polygamous households, 40 were currently married and only 5 were divorced or separated. Presumably, most of the former were first or second wives of the same husband, while the rest were relatives sheltered after the divorce in their relative's household.

Table 30 Percentage distribution of respondents by household type and age, BFS 1975

Age of respondent	Household type						All respondents (= 100%)
	Nuclear	Nuclear extended		Stem-joint-complex	Incomplete	Polygamous	
		A	B				
Under 20	20.6	17.6	14.7	37.8	4.1	5.2	1455
20–24	37.2	15.2	13.5	25.0	4.8	4.3	1364
25–29	46.9	13.3	12.2	17.4	6.8	3.4	1104
30–34	51.0	12.4	10.8	12.0	10.3	3.5	805
35–39	45.0	13.8	9.3	15.5	13.2	3.2	662
40 and over	29.1	12.2	12.1	27.9	15.7	3.0	1104
All	36.3	14.4	12.5	24.5	8.4	3.9	6794
Under 25	28.6	16.5	14.1	31.6	4.4	4.8	2819
35 and over	35.1	12.8	11.0	23.2	14.8	3.1	1766

Table 31 Percentage of respondents married for less than five years, by household type, BFS 1975

Current household type	Eligible respondents: All ever married	Eligible respondents: Married for less than five years	% married for less than five years
Nuclear	2355	197	8.4
Nuclear extended:			
A	937	194	20.7
B	814	166	20.4
Stem-joint-complex	1589	488	30.7
Incomplete	544	32	5.9
Polygamous	255	60	23.5
Total	6494	1137	17.5

Table 32 State of the first marriage of ever-married respondents and cause of dissolution by household type, BFS 1975

Current household type	Status of first marriage: Intact	Status of first marriage: Death of spouse	Status of first marriage: Divorce or separation	% Intact	% Widowed	% Divorced
Nuclear	2033	89	233	86.3	3.8	9.9
Nuclear extended:						
A	733	48	156	78.2	5.1	16.6
B	609	127	78	74.8	15.6	9.6
Stem-joint-complex	1409	72	108	88.7	4.5	6.8
Incomplete	148	293	103	27.2	53.9	18.9
Polygamous	189	21	45	74.1	8.2	17.7
Total	5121	650	723	78.9	10.0	11.1

Table 33 Respondents married for less than five years, first marriage still intact, by age at marriage and household type, BFS 1975

Age at first marriage	Nuclear	Nuclear extended: A	Nuclear extended: B	Stem-joint-complex	Incomplete	Polygamous	All
Under 10	0.5	1.5	2.4	0.4	3.1	–	1.0
10–12	19.3	19.1	15.1	21.1	18.8	23.3	19.6
13–14	40.6	28.9	39.8	31.8	37.5	30.0	34.0
15–17	32.5	35.1	35.5	35.5	31.3	40.0	35.0
18–19	5.1	6.2	3.6	6.4	3.1	6.7	5.6
20 and over	2.0	9.3	3.6	4.9	6.3	–	4.7
Average (SD)	14.2 (2.18)	15.1 (3.66)	14.4 (2.52)	14.6 (2.81)	14.1 (2.61)	14.2 (2.13)	14.6 (2.81)
Total N	197	194	166	488	32	60	1137

It should be emphasised that the percentages of intact marriages in table 32 in no way suggest differential stability of marriage in various types of family. The survey did not investigate in which household type the first marriage started; it only provided information on where the eligible respondent was found at the time of the survey – and that could have been many years after the dissolution of the first marriage.

In table 33 the age at marriage of respondents married for less than five years and still living in their first marriage is set out. The average age at first marriage varied within only a narrow range between 14.1 and 15.1 years. Child marriages were still very common in Bangladesh with between 17 and 23 per cent of brides aged less than 13 years.[19]

[19] The percentage would be slightly higher if marriages that were terminated were considered. Of all eligible respondents married in the past five years, 21.5 per cent were first married at an age below 13, but 20.6 per cent among those whose marriage was still intact at the time of the survey.

Table 34 Average number of children born in the past five years to respondents still in their first marriage, by marriage duration and household type, BFS 1975

Marriage duration (years)	Household type: Nuclear N	Nuclear P	Nuclear extended A N	Nuclear extended A P	Nuclear extended B N	Nuclear extended B P	Stem-joint-complex N	Stem-joint-complex P	Incomplete N	Incomplete P	Polygamous N	Polygamous P
0–4[a]	197	0.94[b]	194	0.63	166	0.61	488	0.51	32	0.47	60	0.55
5–9	372	1.50	129	1.56	125	1.55	261	1.51	31	1.42	34	1.38
10–14	441	1.56	113	1.54	134	1.61	189	1.59	27	1.63	34	1.56
15–19	362	1.37	76	1.49	80	1.55	93	1.49	22	1.14	25	1.40
20–24	304	1.16	65	1.32	61	1.41	80	1.36	18	0.94	6	1.67
25–29	174	0.91	80	0.79	25	0.76	104	0.73	9	0.56	13	0.46
30+	183	0.42	76	0.34	18	0.67	194	0.34	9	0.56	17	0.35
	Percentage without live birth in the past five years											
0–4	31		51		51		58		62		55	
5–9	10		9		11		10		10		18	
10–14	9		8		7		7		0		15	
15–19	13		14		10		14		18		24	
20–24	22		17		11		19		28		17	
25–29	41		49		40		56		56		62	
30+	70		72		44		77		44		82	

N = number of respondents.
P = average number of children born in the past five years.
[a] Because of truncation, most of these women could not have been exposed for full five years.
[b] Significantly higher ($\alpha \leq 0.05$) than any other group average.

Reproductive Behaviour

It may be presumed that within a comparatively short time before the survey – say five years – not many currently married respondents would have changed the household type of their residence and that the fertility of this five-year period might reveal the differences – if any – in reproductive behaviour in various household types. In the earlier section we noted that there were no marked differences in the average age at marriage of respondents still living in an unbroken first marriage. Hence, it should be sufficient to control for marriage duration when comparing fertility in the past five years by marriage type. Table 34 sets out average parities, ie average number of children born in the past five years, by marriage duration and household type. The lower section of the table shows the percentage of respondents who had no live birth during that period.

The fertility pattern by marriage duration is typical of a population with young age of brides and virtually no volitional control of fertility. In all household types it reveals a steep increase in fertility from a moderate level at 0–4 years of marriage[20] to a peak at durations 10–14 years, followed by a gradual decline to the lowest level after 30 and more years of marriage. Subfecundity, lower coital frequencies and, eventually, onset of menopause and probably of terminal sexual abstinence late in marriage depress fertility and increase the proportion of respondents with no live birth.

Statistical tests[21] have shown, however, that levels of recent fertility did not vary significantly at any marriage duration category between the various household types except for one, namely nuclear households at 0–4 years of marriage duration. Nuclear families in the early years after marriage showed significantly higher average parities than any other household type.

In other words, one could surmise that in the nuclear family there is less social control and more privacy, particularly early in marriage before any children are born, in contrast to the complex family (see eg Nag 1967: 161). However, it may be recalled that nuclear families often stem from the separation from a complex family of a couple after childbirth or a few years after marriage. A detailed examination of the 0–4 marriage duration category revealed that the respondents in the nuclear families had

[20] The level of fertility at 0–4 years duration is low for at least two reasons: (1) truncation effect – most respondents recently married had not been exposed to risk for the full past five years; (2) adolescent subfecundity – due to the high proportion of very young brides under 13 years of age.

[21] The analysis of variance by household type was performed first, using the number of births in the past five years as the dependent variable. For the marriage duration groups showing statistically significant (at 0.05 level) variation between household types, the Student-Newman-Keuls procedure (see *SPSS*, 2nd edition: 422–33) was used to test differences in average parities between all possible group means. The significance level adopted for all three tests was 0.05.

been married, on average, for 4.2 years in contrast to between 2.4 and 2.9 years reported by respondents in the other family types. When we separated the respondents married for less than five years by single years of marriage duration in table 35 the life cycle hypothesis appeared to be reasonably supported: respondents at the very beginning of married life (with a marriage duration of less than one year) were heavily concentrated in stem-joint-complex families (55 per cent) and only 6 per cent were in nuclear families. By a marriage duration of two years the proportion of the former declined to 41 per cent and of the latter rose to 16 per cent; at a marriage duration of four years about one-third of all respondents were in each of the two categories of families (33 and 35 per cent respectively). The average number of live births in the early stage after marriage, if marriage duration is controlled for by single years, did not show significant differences between the six household categories.

In most societies there is a social limit to the continued reproduction. It is usually 'defined in terms of a life cycle stage attained by the family as a whole' (Ware 1979: 75) rather than in specific terms. For instance, the social norms may stipulate not so much how many children a couple should have, but rather when to have them, how to space them and when to stop having them. The form of such norms and their practical implementation vary between cultures as does the rigidity with which they are observed or enforced. The sociological and anthropological literature has long recognized the 'pregnant grandmother complex' and Caldwell and Caldwell (1977) described the practice of 'terminal sexual abstinence' in some African societies. In Bangladesh a study of the sexual behaviour of rural families found that most of the women interviewed considered that childbearing and regular sexual life should stop when the woman was 'getting old'. Although only few would specify this stage as the time when her children married and she herself became a grandmother (Ruzicka and Bhatia 1982), the meaning given to 'old' was not merely in terms of chronological age.

It may be surmised that if norms restraining procreation are observed, they will be more strictly adhered to in complex households where several generations live together and the social controls are likely to be more rigidly exercised, than in nuclear families. Comparing average issue during the past five years of the BFS respondents married for 25 or more years and controlling the current age, we found average issue of 0.90, 0.62 and 0.25 per woman aged 35–39, 40–44 and 45 and over respectively. In none of these age groups did the issue by household type differ significantly (at 0.05 level) from the group average or between family types.

Hence, at this level of analysis, at no stage of the family life cycle did there appear to be differences in reproductive behaviour between various household types during the early 1970s.

Turning to the length of the first birth interval of respondents who reported at least one live birth, the following points should be made:

1 The analysis has to be limited to women who had been married relatively recently and had the first birth in, say, the past five years; women married for more than five years not only are less likely to be still in the same household type as at the birth of the first child but are also less likely to recall adequately the exact dates of marriage and of the first birth.
2 We realize that the analysis of the data thus reduced cannot add substantively to the results of the preceding one of average parity of recently married women, as long as we are primarily interested in differentials between household types. It is, nevertheless, presented here as another aspect of the childbearing pattern in the Bangladesh society.

The BFS data on marriage duration are not of a high quality. Of the 418 respondents married for less than five years, still in their first marriage and with at least one live

Table 35 Average number of children born in the past five years to respondents married for less than five years and still in their first marriage, by household type, BFS 1975

Marriage duration (years)	Household type											
	Nuclear		Nuclear extended				Stem-joint-complex		Incomplete		Polygamous	
			A		B							
	N	P	N	P	N	P	N	P	N	P	N	P
0	19	0.11	49	0.06	38	0.05	162	0.07	8	0.00	21	0.05
1	21	0.43	34	0.35	32	0.44	91	0.35	9	0.22	13	0.46
2	32	0.78	45	0.71	33	0.61	82	0.57	4	0.25	6	0.67
3	49	1.08	38	0.89	35	0.94	81	0.86	6	1.00	9	0.89
4	76	1.28	28	1.50	28	1.18	72	1.19	5	1.20	11	1.27
	Percentage without a live birth in the past five years											
0	89		94		95		93		100		95	
1	62		71		59		65		78		54	
2	31		42		42		46		75		33	
3	24		24		26		30		0		33	
4	13		4		21		18		40		9	

Table 36 Average first birth interval of respondents married for less than five years, still in their first marriage, who had at least one live birth in the five years preceding the interview, BFS 1975

Characteristics	Household type[a]			
	Nuclear	Nuclear extended		Stem-joint-complex
		A	B	
	Average interval (months)			
All respondents	24.0	22.0	20.7	22.6
N = 365	80	65	64	156
Age at marriage:				
Under 15	26.1	24.0	22.6	25.0
N = 180	51	27	33	69
15–17	20.4	21.5	19.9	21.6
N = 148	26	28	26	68
Muslims – rural	24.8	23.2	21.5	24.8
N = 204	48	34	32	90
– urban[b]	21.4	20.7	17.2	20.0
N = 86	20	21	15	30
Hindu – rural	26.5	22.0	26.6	20.3
N = 53	10	8	12	23

[a] Averages for the incomplete and polygamous households are not shown here as there were only 9 and 21 respondents respectively in these households.

[b] There were only 18 Hindu urban families with respondents satisfying the criteria.

birth in the five years preceding the survey, 23 appear to have delivered their first child before marriage and another 31 within less than eight months after marriage. If this were true, 5.5 per cent of first births would be out of wedlock and at least 12.9 per cent conceived outside marriage. By Western standards these are not high frequencies, but in a rather conservative society observing rather rigid norms of sexual behaviour and imposing a taboo on pre-marital sex the above proportion of premaritally conceived live births is too high to be believed. Some of the first birth intervals are undoubtedly distorted – whether by the respondent's incorrect statement of the month of marriage and first birth or because of the imputation of those months is impossible to say. We have excluded in table 36 the negative intervals but retained those shorter than eight months. From this table are also excluded the incomplete and polygamous households as the number of respondents was too small (nine in incomplete and 21 in polygamous households).

The average length of the first birth interval of the respondents married for less than five years who had at least one live birth prior to the survey was 22.6 months; the averages did not vary significantly (0.05 level of significance) between various types of households. The differences remained statistically non-significant even when age at marriage, religion and residence were controlled for.

We have already mentioned the very low levels of contraceptive use in Bangladesh at the time of the BFS. The *First Report* pointed out that the prevalence of current use increased with the number of surviving children, level of respondent's education and urban residence.[22] Tabulating the proportions currently using contraception (of any kind) by rural/urban residence, number of surviving children and type of household in which they resided did not reveal any statistically significant differences between household types (table 37). There were observed quite marked fluctuations between household types at the same level of surviving parity in both rural and urban areas. Though in most instances, it appeared that the level of contraceptive use was higher in the complex households than in the other types such differences may have been due to random fluctuations because the number of respondents in many household type categories was comparatively small and, in the rural areas, the overall level of contraceptive use was very low. This conclusion remained valid when we examined levels of contraceptive use by age (instead of surviving

[22] One would also expect that current use of contraception may be higher among the women who expressed a desire not to have any more children. While this appeared to be the case in the BFS, an examination of the distribution of the respondents who said they did not wish any more children suggests that this question was either misunderstood by the respondents or the interviewers failed to ask it correctly (*First Report:* 87). It is rather hard to believe that in a society that attaches such a high importance to having a large number of children (mean number of children wanted was, on average, 3.5 for childless respondents and 5 or even more for women with 6 and more surviving children) over 13 per cent of childless women and 42 per cent with 1 surviving child would answer that they did not desire any more children.

Table 37 Eligible respondents 'at risk' by residence, number of surviving children, household type and current use of contraception, BFS 1975

	Residence	Rural				Urban			
		Household type							
	Surviving children	Nuclear	Nuclear extended A	Nuclear extended B	Stem-joint-complex	Nuclear	Nuclear extended A	Nuclear extended B	Stem-joint-complex
0	N (respondents)	100	93	75	247	19	25	14	58
	% (current users)	4.0	3.2	4.0	0.4	0.0	0.0	7.1	12.1
	$x^2 = 6.978$					$x^2 = 5.677$			
1	N	186	78	79	193	52	32	26	48
	%	4.3	2.6	7.6	8.3	17.3	9.4	11.5	25.0
	$x^2 = 4.757$					$x^2 = 4.031$			
2–3	N	456	111	132	250	148	52	42	64
	%	7.0	7.2	9.1	11.6	24.3	21.2	9.5	26.6
	$x^2 = 4.656$					$x^2 = 5.029$			
4–5	N	441	89	72	164	132	39	19	27
	%	10.9	10.1	11.1	11.6	35.6	35.9	21.1	25.9
	$x^2 = 0.135$					$x^2 = 2.382$			
6+	N	274	102	48	132	86	32	23	44
	%	13.5	11.8	12.5	18.9	31.4	34.4	21.7	36.4
	$x^2 = 3.102$					$x^2 = 1.597$			

x^2 ($\alpha = 0.05$, df = 3) = 7.815

parity)[23] for respondents who declared that they did not wish to have any more children (rather than all respondents 'at risk'). Those tabulations are not shown here.

Admittedly, the diversity of social and economic conditions between various household types may still mask the differences in reproductive behaviour patterns even after the main demographic factors have been taken into account. Hence, a series of analyses was performed, separately for rural and urban families, using selected demographic variables as covariates and socio-economic categorical variables as factors in ANOVA and MCA procedures. As explained earlier, the hierarchical approach was followed. Three dependent variables were examined:

1 Births in the past five years to respondents married for five years or more, still in their first marriage;
2 Births in the past five years to recently married respondents (duration of marriage less than five years) still in their first marriage;
3 Current use of contraception by currently married women.

The results are presented in tables 38–40.

After several trials with the set of factors the model presented in table 38 was decided upon despite the inconvenience of having statistically significant interaction between current use of contraception and family assets (in the rural subsample) and between education and household type (in the urban subsample). We shall show later, that creating joint variables did not in any way change the conclusion, namely that household type – after adjustments were made for the demographic covariates and the selected socio-economic factors – had no significant bearing upon fertility of respondents married for five and more years in the five years preceding the survey.

It may be worth noting, that age was the important covariate that captured almost all (94 per cent) of the variation explained by the covariates in rural and practically all (99 per cent) in the urban areas. Further, it may be pointed out that the effect of education on fertility in the rural areas was not statistically significant, while in the urban areas that variable was the second strongest one in the set (after adjustments for demographic covariates and religion).

The results of the MCA show slightly higher fertility in urban than rural areas (unadjusted average issue during the past five years). In both rural and urban areas Muslim respondents had higher fertility than Hindus – even though this difference was reduced by the adjustments for age and marriage duration. The adjusted fertility of the urban Muslims was larger than of the rural, but Hindu fertility was about the same in the two areas. In the towns, higher than primary education turned out to depress fertility considerably, and low education (primary school or less) appeared to act in the opposite direction.

The variable 'use of contraception' needs some explanation; it not only separates women who were or were not currently using any contraceptive method ('modern' or 'traditional') but also those who were – at the time of the survey (but obviously not necessarily during the five years prior to the survey) – pregnant or suspected themselves to be infecund. In both rural and urban areas this latter group alone was the cause of the significant difference in recent fertility by the variable 'use of contraception'. With that subgroup deleted there was almost no difference in recent fertility of the users and non-users.

[23] Here again are excluded the incomplete and polygamous households because of the small numbers of respondents.

Table 38 Analysis of variance and multiple classification analysis of births in the first five years to eligible respondents who have been married at least five years and who have been continuously in their first marriage, BFS 1975

A Analysis of variance

Source of variation	Rural		Urban	
	Sum of squares	Significance of F	Sum of squares	Significance of F
Covariates	380.5	0.000	145.7	0.000
Age of respondent (years)	359.3	0.000	144.9	0.000
Years since marriage	21.2	0.000	0.8	0.315
Main effects	66.3	0.000	39.5	0.000
Religion	6.4	0.002	3.1	0.049
Education	1.1	0.453	14.9	0.000
Current use of contraception	47.2	0.000	16.5	0.000
Family assets	7.3	0.004	4.6	0.056
Type of household	4.3	0.094	0.4	0.916
Two-way interactions[a]	26.8	0.424[b]	30.2	0.501[c]
Explained	473.6	0.000		
Residual	1864.0			
Total	2337.6			
Covariate				
Age	−0.042[d]		−0.050[d]	
Years since marriage	−0.032[d]		−0.009[d]	

B Multiple classification analysis

Variable and category	Rural (Grand mean = 1.25)					Urban (Grand mean = 1.32)				
		Unadjusted		Adjusted for covariates and independents			Unadjusted		Adjusted for covariates and independents	
	N	Deviation	*Eta*	Deviation	*Beta*	N	Deviation	*Eta*	Deviation	*Beta*
Religion										
Muslim	2301	0.03		0.02		698	0.05		0.04	
Hindu	533	−0.11	0.06	−0.10	0.05	149	−0.24	0.11	−0.17	0.08
Education										
None	2282	−0.03		−0.00		506	−0.03		0.04	
1–5 years	497	0.12		0.01		213	0.16		0.12	
6+ years	55	0.20	0.07	−0.01	0.01	128	−0.15	0.10	−0.35	0.15
Current use of contraception										
No	2044	0.09		0.07		516	0.13		0.08	
Yes	233	−0.04		−0.01		191	−0.08		0.01	
Not at risk	557	−0.30	0.17	−0.25	0.14	140	−0.37	0.19	−0.31	0.14
Family assets										
None	2008	−0.03		−0.03		411	−0.03		−0.08	
1–3 items	631	0.02		0.04		196	0.10		0.10	
4+ items	195	0.23	0.07	0.20	0.07	240	−0.03	0.06	0.06	0.08
Household type										
Nuclear	1375	0.02		0.02		434	−0.03		−0.00	
Nuclear extended A	391	−0.07		−0.01		141	0.03		0.02	
Nuclear extended B	333	0.19		0.07		109	0.22		0.04	
Stem-joint-complex	735	−0.08	0.09	−0.06	0.04	163	−0.08	0.09	−0.03	0.02
Multiple R squared					0.191					0.220

[a] Detailed interactions are not shown; none were significant at 0.05 level.
[b] Statistically significant (at $\alpha < 0.05$ level) interaction between current use of contraception and family assets.
[c] Statistically significant (at $\alpha < 0.05$ level) interaction between education and household type.
[d] Raw regression coefficient.

The richer families in the rural areas and, to a lesser extent, in the urban area had higher fertility. The difference by household type was only marginal in both and not statistically significant: the highest level of (adjusted) recent fertility was in both subpopulations among the nuclear extended families with mother (in-law) present, 1.32 and 1.36 birth in rural and urban families respectively. The lowest was, again in both areas, fertility in the complex group of families, 1.19 and 1.29 births respectively for rural and urban subsamples.

The interactions mentioned above caused us to run a separate analysis by using joint variables; the results are shown for the two relevant segments.

Average issue per woman in 5 years prior to survey

	Rural: use of family planning			Urban: use of family planning		
Assets	No	Yes	Not exposed	No	Yes	Not exposed
None	1.29	1.20	0.97	1.33	1.26	1.04
1–3	1.33	1.30	1.14	1.56	1.55	1.01
4+	1.62	1.42	0.81	1.45	1.23	0.96

Household type	Rural: years of education		Urban: years of education	
	None	1+	None	1+
Nuclear	1.28	1.23	1.34	1.28
Nuclear extended A	1.22	1.33	1.52	1.18
B	1.33	1.25	1.31	1.49
Stem-joint-complex	1.17	1.26	1.19	1.46

The variation explained by the joint variable 'household type – level of education' was not statistically significant at 0.05 level in either of the two subsamples. Moreover, the observed differences between various household type categories by education of the respondent did not display any systematic pattern.

The analysis of the childbearing prior to the survey of respondents married for less than 60 months is, as pointed our earlier, confounded by the truncation effect. To reduce it, marriage duration was used in months rather than years as one of the covariates.

In the urban and rural samples both covariates had regression coefficients in the expected direction and accounted for almost the total explained variance in the ANOVA analysis. It is worth noting, that in the rural sample the additional variation explained by the marriage duration was slightly larger than that captured by age; in the urban sample, additional variation accounted for by marriage duration was relatively even greater, accounting for over two-thirds of the variation explained by the covariates. This is probably due to the younger age at marriage of many of the rural respondents – and thus somewhat longer first birth interval because of adolescent subfecundity.

In neither of the two subsamples was the variation explained by the four categorical variables statistically significant except that in the urban sample, family assets appeared to have significant effect on the level of childbearing. The richest families had, on average, higher fertility than the poorest ones: 0.97 as compared to 0.63 births per respondent (adjusted data).

No other categorical variable was able to explain a statistically significant part of the variation in recent childbearing. More to the point of our concern here, there was no statistically significant difference in adjusted fertility by household type.

The results of the analysis of the factors associated with current use of contraception must be interpreted with a great deal of caution for at least two reasons: the general one, deriving from the problems of the use of a dichotomous dependent variable in ANOVA and MCA mentioned earlier in this paper. The other more specific one to Bangladesh is the overall low level of volitional fertility control, particularly in the rural areas; the fact that two-fifths of current users depend on 'traditional' methods (particularly abstinence and withdrawal) and those reporting the use of the pill or condom in the rural areas may often be rather irregular users – depending on the access to supplies.

In the analysis, the results of which are set out in table 40, we used three covariates: the number of surviving children, years since first marriage and age. The sample was limited to respondents currently married for at least five years, and 'exposed to risk', that is not pregnant and not considering themselves to be infecund.

In the urban sample, the three covariates accounted for just over one-quarter of the explained variation in current use of contraception, while in the rural sample the proportion was about one-third. Interestingly, in the rural sample, 90 per cent of the variation explained by the covariates was captured by the number of surviving children alone. In the urban sample, however, this was just over one-half, while the age of the respondent accounted for nearly 40 per cent. This is not only due to the fact that the 'number of surviving children' was listed as the first variable in the hierarchical approach. When we reversed the order in the rural sample placing age as the first variable and the number of surviving children as the last one, the 'number of surviving children' variable still accounted for nearly 80 per cent of the variation explained by all three covariates (age alone capturing about 20 per cent and marriage duration less than 2 per cent). This suggests that in the rural families the strongest motivation for adopting contraception is family size; contraception is used for limiting rather than spacing of birth. Five independent factors were investigated: family assets, religion, education of the respondent, her childhood residence and household type. Because of strong interaction, education and household type had to be transformed into a joint variable in both areas and childhood residence with family assets in the urban areas.[24]

Of the three factors used in the final analysis, each had a significant impact on the level of contraceptive use in the rural areas and all but religion in the urban areas. Admittedly, the explanatory power of both covariates and the other independents in the rural area was rather poor, R^2 (multiple) being only 0.036. The respondents residing in

[24] Only less than two per cent of rural residents reported urban childhood residence; the variable was therefore not introduced in the analysis of the rural sample.

Table 39 Analysis of variance and multiple classification analysis of births to date to eligible respondents who have been married for less than five years and who have been continuously in their first marriage, BFS 1975

A Analysis of variance

Source of variation	Rural		Urban	
	Sum of squares	Significance of F	Sum of squares	Significance of F
Covariates	161.0	0.000	65.5	0.000
Age of respondent (years)	78.4	0.000	18.0	0.000
Months since marriage	82.6	0.000	47.5	0.000
Main effects:	4.0	0.089	6.0	0.038
Religion	0.4	0.269	0.8	0.127
Education	1.2	0.135	1.1	0.233
Family assets	0.7	0.325	2.5	0.034
Type of household	1.8	0.099	1.6	0.213
Two-way interactions[a]	2.9	0.991	7.2	0.634
Explained	167.9	0.000	78.7	
Residual	215.4		80.8	
Total	383.3		159.5	
Covariate				
Age	0.112[b]		0.075[b]	
Months since marriage	0.020[b]		0.311[b]	

B Multiple classification analysis

Variable and category	Rural (Grand mean = 0.58)					Urban (Grand mean = 0.80)				
		Unadjusted		Adjusted for covariates and independents			Unadjusted		Adjusted for covariates and independents	
	N	Deviation	*Eta*	Deviation	*Beta*	N	Deviation	*Eta*	Deviation	*Beta*
Religion										
Muslim	642	−0.02		−0.01		221	0.03		0.02	
Hindu	133	0.10	0.07	0.05	0.03	37	−0.20	0.11	−0.14	0.07
Education										
None	497	−0.03		−0.03		105	0.09		0.14	
1–5 years	203	0.07		0.04		64	−0.16		0.11	
6+ years	75	−0.00	0.06	0.07	0.05	89	0.01	0.12	−0.09	0.15
Family assets										
None	491	−0.02		−0.02		90	−0.03		−0.17	
1–3 items	209	0.08		0.05		87	−0.06		0.02	
4+ items	75	−0.06	0.07	0.00	0.05	81	0.10	0.09	0.17	0.18
Household type										
Nuclear	144	0.31		0.11		52	0.32		0.09	
Nuclear extended A	133	−0.04		−0.01		61	0.05		0.03	
Nuclear extended B	126	−0.04		−0.01		36	0.12		0.11	
Stem-joint-complex	372	−0.09	0.22	−0.03	0.07	109	−0.22	0.27	−0.09	0.11
Multiple R squared					0.431					0.448

[a] Detailed interactions are not shown; none were significant at 0.05 level.
[b] Raw regression coefficient.

Table 40 Analysis of variance and multiple classification analysis of current use of contraception by eligible respondents who are neither pregnant nor infecund and who have been continuously in their first marriage for at least five years, BFS 1975

A Analysis of variance

Source of variation	Rural		Urban	
	Sum of squares	Significance of F	Sum of squares	Significance of F
Covariates	2.66	0.000	5.33	0.000
Number of living children	2.44	0.000	2.72	0.000
Years since marriage	0.23	0.110	0.57	0.066
Age	0.00	0.891	2.04	0.001
Main effects	5.25	0.000	16.66	0.000
Religion	0.96	0.001	0.25	0.225
Household assets	1.16	0.002	–	–
Childhood residence and household assets	–	–	12.36	0.000
Education and household type	3.13	0.000	4.05	0.001
Two-way interactions[a]	2.02	0.475	Interactions suppressed	
Explained	9.94	0.000	21.99	0.000
Residual	199.22		116.34	
Total	209.16		138.33	
Covariate				
Number of living children	0.015[b]		0.026[b]	
Years since marriage	−0.001[b]		−0.004[b]	

B Multiple classification analysis

Variable and category	Rural (Grand mean = 0.10)					Urban (Grand mean = 0.27)				
		Unadjusted		Adjusted for covariates and independents			Unadjusted		Adjusted for covariates and independents	
	N	Deviation	*Eta*	Deviation	*Beta*	N	Deviation	*Eta*	Deviation	*Beta*
Religion										
Muslim	1837	−0.01		−0.01		579	−0.01		−0.02	
Hindu	440	0.04	0.06	0.04	0.06	126	0.07	0.07	0.07	0.07
Household assets										
None	1598	−0.01		−0.00				n/a		
1–3 items	517	0.00		−0.01						
4+	162	0.09	0.08	0.04	0.04					
Childhood residence and household assets		n/a								
Rural										
None						261	−0.11		−0.09	
1–3 items						116	−0.06		−0.08	
4+						113	0.10		0.05	
Urban										
None						76	−0.04		−0.01	
1–3 items						42	−0.03		−0.03	
4+						97	0.31	0.32	0.29	0.28
Education of respondent and family type										
None										
Nuclear	954	−0.02		−0.02		222	−0.08		−0.02	
Nuclear extended A	237	−0.03		−0.03		50	−0.11		−0.08	
Nuclear extended B	216	−0.04		−0.03		54	−0.14		−0.09	
Stem-joint-complex	424	−0.01		−0.01		88	−0.05		−0.01	
1+ years:										
Nuclear	173	0.07		0.06		134	0.21		0.14	
Nuclear extended A	62	0.06		0.05		72	0.08		−0.03	
Nuclear extended B	56	0.09		0.08		34	−0.09		−0.14	
Stem-joint-complex	155	0.11	0.14	0.11	0.13	51	0.10	0.28	0.02	0.18
Multiple R squared					0.038					0.159

[a] Detailed interactions are not shown; none were significant at 0.05 level.

[b] Raw regression coefficient.

the richer rural families, Hindus, and somewhat educated ones were more likely to use contraception (all other things being equal) than the poorer ones, Muslims and with no schooling. The significant effect of the joint family type-education variable was largely on account of the educational differential as can be seen from the following summary:

	Percentage currently using contaception	
Rural respondents	No schooling	Some education
Nuclear household	8.28	16.27
Nuclear extended A	6.48	15.43
B	7.63	18.79
Stem-joint-complex	9.12	19.66

The differences between household types at the same educational level category are not striking; moreover, the 'some education' includes a small number of respondents with 6+ years of education (table 32) largely concentrated in the complex group of families.

In the urban group religion, though clearly suggesting the same pattern of contraceptive use as in the rural sample, was not a statistically significant factor. Rural childhood background of the respondent did reduce her likelihood of using contraception, in particular in the richer families:

	Per cent using contraception	
	Childhood background of respondent	
Household assets	Rural	Urban
None	18.02	23.98
1–3 items	19.58	22.84
4+	31.59	64.30

Education and family type both exercised an influence on the likelihood of contraceptive use; as could be expected, the women with some education were more likely users than those with no formal schooling. However, it is worth pointing out that in both educational level categories the nuclear extended households with mother (in-law) present were least likely to have an eligible respondent using contraception.

Given the comparatively small numbers and the limitations of the use of a dichotomous variable as a dependent variable in ANOVA and MCA, we certainly do not wish to attach undue importance to this finding that may be purely fortuitous. The pattern of the contraceptive use by house hold type was not very consistent apart from the likelihood that respondents in purely nuclear and the complex group of urban families were more likely to use contraception than the other two types.

	Per cent using contraception	
	Education (years of schooling)	
Type of household	None	1 or more
Nuclear	24.1	39.70
Nuclear extended A	19.31	22.50
B	16.46	11.78
Stem-joint-complex	25.93	28.75

3.4 CONCLUSION

These concluding pages are intended to serve two purposes, first to make appropriate comparisons between the findings for the two countries, Sri Lanka and Bangladesh, and second to indicate the scope of possible investigations using family or household structure as a variable.

We have already pointed out that the cultures of Sri Lanka and Bangladesh are considerably different and that therefore the data distributions did not warrant making parallel tabulations for the two countries. Nevertheless, there is enough similarity between our statistical treatment of the SLFS and BFS data for us to make the following observations:

Households

1 Purely nuclear households are more than one-half of all Sri Lanka households and include more than one-half of the total population. In Bangladesh they are slightly less than one-half but nevertheless are the most common household type.
2 In both countries, the nuclear households are relatively less prevalent in urban areas than in rural. In both countries, there are more members per household in urban areas than in rural. Urban housing shortage is likely to be a major cause for this; however, we have had to record households in terms of physical dwelling units, and it is possible that in rural areas the real family group may often extend beyond a single dwelling unit.
3 In both countries there are a substantial number of incomplete households – ie households without a married couple present, but often headed by a widow or widower. Such households have a high relative frequency in rural as well as urban areas.
4 In both countries, and in both urban and rural areas, the extended nuclear and the stem-joint-complex households tend to be the more prosperous in terms of goods owned.[25] In terms of goods owned, urban households were more prosperous than rural.[26]

Eligible Respondents

1 In both Sri Lanka and Bangladesh, marriage is virtually universal. However, in Bangladesh women marry very

[25] Also in terms of quality of housing (in the case of Sri Lanka, where such data were available). In rural areas the more complex households were more prosperous in terms of land ownership. In Bangladesh, the households where there were one or more polygamous marriages were most prosperous of all.

[26] As pointed out earlier, this assessment is on a family rather than individual basis.

early, often before age 15, whereas in Sri Lanka marriage has gradually been getting later and later so that today many women are not marrying until their late 20s or even their 30s.

2 Marriage is very stable in Sri Lanka, with only a small proportion terminating in divorce (today not many terminate in widowhood either, since mortality rates are low). In Bangladesh, on the other hand, widowhood and divorce are more common, though the latter is often followed by re-marriage. The following are comparative figures for eligible respondents aged 35–39:

	Sri Lanka	Bangladesh
No of respondents 35–39	1194	665
	%	%
Proportion currently married	89.6	83.2
In first marriage	85.4	71.6
In subsequent marriage	4.2	11.6
Proportion widowed	5.5	14.6
Proportion divorced or separated	4.9	2.3

3 In both countries, most couples during the first few years of marriage live in the same household as their parents (see N values in tables 12 and 34) and later tend to form their own homes. However, in Bangladesh the newly married couple living with parents almost always live with the husband's parents, but in Sri Lanka such couples are about equally divided between living with husband's parents or with wife's.

4 In neither country is there substantial difference among the respondents of differing ethnic or religious groups as to types of household.

5 In both countries the better educated respondents are more likely to be found in the nuclear extended and the stem-joint-complex households than in the purely nuclear, but the type of household in which the respondent now lives is not a cause of this. Better education is associated with standard of living in terms of ownership of chattels, houses and land. In Sri Lanka, where roughly one-half of the women have had at least six year's schooling, better education is associated primarily with higher marriage age. In Bangladesh, the relations are less clear as only a small minority of women have had six or more years of schooling.

Fertility

1 In Sri Lanka childbearing generally starts within a year or two after marriage whereas in Bangladesh it is more delayed (see percentages in first row of lower half of tables 12 and 34). The delay in Bangladesh results from the relative subfecundity common to very young brides.

2 Fertility has been found to vary in both countries more or less in the expected manner, when analysed by the usual socio-economic variables. Thus it very definitely decreases as education increases and it is also lower in the more prosperous households than in the poorer. In Sri Lanka it is also found that fertility varies with residence, being less in urban areas than in rural, and least in Colombo. In Bangladesh, however, rural and urban fertility have not been markedly different until the mid-1970s. In Sri Lanka it varies considerably by ethnic group, being highest for Moors (Muslims). In Bangladesh it is higher for Muslims than for Hindus, but not to a great extent.

3 With regard to household type, the Sri Lanka data seem to indicate that fertility is highest in nuclear households, even after allowing for the effect of all other variables. In Bangladesh there is no clear picture.

4 While incomplete households have been omitted from the analysis of fertility by household type, a separate analysis was made to test the effect of absence of the husband. Wherever an eligible respondent is represented as married but her husband is not listed even on a *de jure* basis in the household schedule, a special code for 'husband absent' was assigned to her. Multiple classification analysis (MCA) of the husband-absent and husband-present married women, after controlling on age, marriage duration, residence (rural/urban), race (for Sri Lanka) or religion (for Bangladesh), women's education and standard-of-living score (Sri Lanka) or household assets (Bangladesh) did show lower fertility for the husband-absent woman, as shown below:

Mean births in past five years to women married at least five years (adjusted for covariates and independents)

	Sri Lanka	Bangladesh
Married, husband absent	0.79	1.08
Married, husband present	0.95	1.25

The fact that the husband is not listed in the household schedule is supposed to mean that he is not 'usually' present. In Bangladesh particularly, it is not uncommon for husbands to be absent from home for months at a time for employment in a distant town or for fishing in a distant river or delta.

5 In Sri Lanka, the analysis of data on length of first birth interval does indicate that these intervals are shortest in purely nuclear households and longest in stem-joint-complex. There are no conclusive data for Bangladesh on this.

6 In Sri Lanka, contraceptive use among women currently exposed to the risk of pregnancy is found to be less common in the more complex households than in the nuclear, after allowing for all other relevant variables. This is not consistent with the finding of lower fertility in the more complex households, but household type accounts for a small part of the explained variation, and past high fertility seems to be the most important positive predictor of current contraceptive use. In Bangladesh, what is interesting to observe is that contraceptive use is the lowest where the wife lives in the same household as her mother-in-law.

In the discussion in chapter 1, care was taken to explain some of the limitations of the WFS household data as a tool for relating reproductive behaviour to household type. Two points were particularly stressed: (1) the difficulty arising from the need to use physical dwelling units as households, and (2) the fact that the data can show only the *current* household type, which therefore cannot be related to fertility of a time period long past. We have been careful in our analysis to give heed to point (2). As for point (1), it is probable that its effect is not so bad as we might have

feared. When, for example, we see in table 35 how the distribution of respondents by household type changed progressively even by single years of marriage duration, we realize that this could not have been the case had the physical dwelling unit been a very unrealistic basis for household definition and classification.

At the same time, we would like to remind the reader that the various choices we have made, both in method of household classification and in analysis, have been only illustrative and do not by far represent all the avenues that might have been taken. Other analysts will find it well to consider other methodology, particularly when such other methods are more suited to their particular purpose.

It is also possible that several additional variables not within the scope of this paper may advantageously be analysed with respect to household type. Among these might be occupation and place of work (either the eligible respondent's or her husband's), desired family size, survival of children, number of children living at home, education of children (included in WFS data of several countries) and so forth. The range of possibilities could be quite extensive.

This analysis had two aims: first to discuss whether the WFS surveys were a suitable vehicle for the analysis of the relation between household structure and fertility; and secondly to examine two surveys, those of Bangladesh and Sri Lanka, in order to explore the relation in these countries.

The major finding is that the relation between current household structure and fertility is either negligible or very weak. In Sri Lanka there appears at the time of the survey, once several other characteristics had been controlled, to have been slightly higher fertility among women in nuclear families, coupled, somewhat surprisingly, with slightly lower levels of intentional fertility control. In Bangladesh not even modest differentials of these types could be detected. So impressively weak are these relationships that one is tempted to conclude that household structure has at no time any substantial impact on fertility levels and that the small differentials discovered in Sri Lanka are due to variables not included in the analysis. Even if this were not the case, we might well decide that the matter is one of no social significance.

Yet this conclusion might be misleading, or, at least, such results might not be found in a society dichotomized between persons who live either solely in nuclear families or solely in more complex families from the time of marriage. In much of south Asia this is not the situation. A study in another society in the region found at the time of study approximately half the population resident in nuclear families and half in more complex ones (Caldwell, Reddy and Caldwell 1982), yet it was also able to establish that the great majority of couples in either type of family had lived in stem-joint families for a substantial period after marriage, a period that included most childbearing and the first decisions for or against fertility control. The Sri Lankan data indicates the presence of a modified form of this pattern. In these circumstances, our findings may not settle the matter.

There remains a case, not for dropping the investigation of the relation between household structure and fertility, but for carrying out two further procedures. First, in societies which are more clearly divided by lifetime residential patterns, the kind of analysis illustrated in this occasional paper might well adduce more satisfactory evidence for or against a relation between household structure and fertility. Secondly, there is a strong case for including in some future surveys of the WFS type full residential history as well as fertility, contraceptive and marriage histories. Nor should the data for the four histories be collected independently but the various stages should be interrelated in the collection. Such an interrelation is more important for this kind of analysis than the achievement of slightly more accurate dates for any one series.

Even when such data are secured, the problems of analysis, and those of positing cause and effect, are far from simple. A study which attempted this approach showed that different conclusions could be drawn when the household structure parameters were set up in different ways (Ryder 1976). Some light may be thrown on problems of cause and effect, especially on whether family structure determines fertility or whether fertility determines when families divide, by collecting information from respondents on the reasons for the division of the family. It may even be worthwhile to include a supplementary question on whether fertility or family numbers played a role in the decision.

Such work will be difficult, but will be worth attempting. This is so even if most findings of these new surveys are negative or if they indicate that significant relations exist only in some societies or only at certain stages in a society's history.

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Appendix A - Methodology of Classification

This appendix describes some of the technical problems involved in derivation of household classifications for this illustrative analysis; it is hoped that it may prove helpful to other analysts working with WFS household data.

I CONTENTS OF HOUSEHOLD SCHEDULE

The WFS household schedules for Sri Lanka and Bangladesh required the following items of information for each household member:

1 Name.
2 Relationship to the household head.
3 Whether or not the member usually lives in the household.
4 Whether or not the member slept in the household last night (ie the night before the household interview).
5 The sex of the member.
6 The month and year of birth and age of the member.
7 The marital status of the member.
8 Whether or not the member is an eligible respondent and therefore to be interviewed individually regarding her pregnancy history, marital history, contraceptive use, educational and employment background, etc. An eligible respondent must be a woman under 50 who has been married and who has slept in the household the previous night.

The information on the household head was given in the first line of the schedule, and that on other household members on suceeding lines, one line to a member.

Similar information is included in household schedules of other WFS countries. For Bangladesh and some other countries the schedule also obtained information on each household member's education (not merely on the eligible respondent's education) and in some countries brief information on each female member's fertility.

Also in Sri Lanka, as a supplement to the household membership schedule, the questionnaire inquired into the household's housing quarters (structure, number of rooms, sources of water and lighting, etc) the valuable objects which it owns (automobile, bicycle, radio, etc) and the amount of land farmed by the household and its crops and livestock. In Bangladesh, somewhat similar questions were asked in the individual eligible respondent questionnaire.

II PROCEDURE FOR CODING HOUSEHOLD RELATIONSHIPS

There is a more or less standard procedure adopted by WFS in coding the data on each member listed in the household census. In order to appreciate the method of determining relationships from the coded information in the household data set, and to understand the data limitations, one should note the following items carefully, as they are the items of information on which relationship is based:

1 The household member's line number in the household schedule.
2 The member's generation code (3 if in the household head's generation, 2 if in the head's parents' generation, 1 if in the grandparents' generation, 4 if in the head's children's generation, 5 if in the grandchildren's generation, 6 if in other generations, 7 if unrelated to the head).
3 A couple code, if a member of a married couple. The husband and wife in the first married couple (ie the first represented in the household census) would each have couple code 1, the husband and wife in the second couple code 2, etc, with a maximum couple code of 7. Couple code 8 was assigned by us to any married member whose spouse is absent and to any ex-married person; or blank to never-married members.
4 A mother's line number, indicating the line number of whichever other member of the household, if any, is the mother of the given member. If no other member is the mother, then the mother's line is 88.
5 The member's sex, the usual code being 1 for male, 2 for female (in the Sri Lanka household data, 1 for female, 2 for male).
6 The member's age, and month and year of birth, with 99s for unknowns.
7 The member's marital status, generally omitted for childhood ages. The usual code is 1 for married, 2 for widowed, 3 for divorced, 4 for separated and 5 for single (for Sri Lanka, 3 for married, 4 widowed, 5 divorced, 6 separated; 1 for single, 2 for married but marriage not consumated).
8 Whether the member is an eligible respondent (1 being coded if she is, a blank or 2 otherwise).

Even though the household census originally stated the relationship of each person in the household to the head, the coding does not give the complete relationship but reduces it into terms of the above items of information, particularly items 2, 3 and 4. Thus the wife of the household head would be generation 3 and would have the same couple code as the head (presumably couple code 1) and their daughter would be in generation 4 and would have as her mother's line the line number which her mother had in the census listing (usually line 02).

The following illustrates the coding for a household whose members are described in the household census as follows:

Line no	Relationship to head of household	Sex	Age	Marital status	Appropriate coding				
					Generation	Couple code	Mother's line	Marital status	Eligible respondent
1	Head	M	57	married	3	1	88	1	
2	Wife	F	53	married	3	1	03	1	
3	Wife's mother	F	70	widowed	2	8	88	2	
4	Daughter	F	34	married	4	2	02	1	1
5	Daughter's husband	M	37	married	4	2	88	1	
6	Daughter's daughter	F	11	unmarried	5		04		
7	Daughter's son	M	8	unmarried	5		04		
8	Son	M	31	married	4	3	02	1	
9	Son's wife	F	24	married	4	3	88	1	1
10	Son	M	23	unmarried	4		02	5	

In addition to the above information, the coded information includes two columns relating to residence: (1) whether the member usually lived in the household and (2) whether the person slept there the preceding night. Temporarily absent and temporarily present persons were both to be included in the household census, but an ever-married woman under age 50 could be included as an eligible respondent only if she had slept in the household the preceding night. Considerable reference to these two columns will be made in section VIII of this appendix.

One shortcoming of this coding procedure is that it does not always permit the exact determination of relationships. In the above example, we can tell from the coding that couple 2 consists of the head's wife's daughter and son-in-law and that couple 3 consists of the head's wife's son and daughter-in-law, but this is only because the head's wife is present. If the head were a widower, there would be no mother's line to enable us to determine how these two younger couples were related. In some countries or societies where it is the prevailing custom for a newly married couple to live with the bridegroom's parents (or in other localities the bride's parents), we might infer the relationship, but elsewhere this would not be possible. Except perhaps for the order in which they appear in the schedule we might guess that both of the couples in generation 4 were the head's sons and their wives, or alternatively the head's daughters and their husbands. For that matter, the household members in generation 4 might be the head's nephews and nieces and still receive the same coding.

There is some doubt whether the interviewer carefully ascertained (or could ascertain) which member is the household head. Sometimes, both in Sri Lanka and Bangladesh when there were couples in two generations, the husband in the older couple has been coded as the head, sometimes the husband in the younger. If the household consisted of a married couple (with their children) and a widowed parent, the parent, particularly if male, has often been coded as head, but sometimes the young husband. In other cases, an adult unmarried son has been coded as head. What would be desirable would be for that household member who has major authority to be coded as household head, but the various instructions issued by WFS do not seem to be specific on this point. The WFS 'Training Manual' states (p 39) that the interviewer's assignments may consist of 'name of principal member of the household', suggesting the possibility that this may have been designated in advance by a local registrar or village headman, and later goes on to say (pp 40–1): 'It is necessary to specify who is an eligible respondent for the household interview . . . these questions can, in principle, be answered by any adult who is a usual member of the household'. This suggests the possibility either that the person who gives the household information may be accepted by the interviewer as the household head, or that this person's word as to who is household head may be accepted by the interviewer without question.

III ERRORS THAT AFFECT DETERMINATION OF RELATIONSHIP

Even though both Sri Lanka and Bangladesh household data, on which the classifications in this study are based, appear reasonably well coded,[27] they had not been mechanically edited, and various errors showed up in the form of inconsistencies, and of course it is only reasonable to assume that there were errors of other types which cannot be detected in this manner. Here are some of the error types which have been found in the work:

1 Errors in generation code: sometimes two members of

[27] Comparisons made in this study between the eligible respondent's own statement of her age and marital status and the household record (which was often given by someone else) showed good consistency. In both the Sri Lanka and Bangladesh data, ages agreed without discepancy or with only a one-year discrepancy in 97 per cent of the cases, marital status without discrepancy in almost 99 per cent of the cases.

a married couple with one couple code were shown as being in different generations.

2 Errors in couple code: sometimes a married woman whose husband was neither present nor listed in the household was given a couple code; sometimes two pairs of husband and wife were given the same couple code. In polygamous households, a husband and his two or more wives should have the same couple code, but there have been some cases where polygamy is understood to be illegal and where nevertheless three or more persons have the same couple code.

3 Errors in marital status: sometimes marital status was missing, even for a woman designated as member of a married couple, or sometimes a woman designated by a couple code as being a member of a married couple was shown in a non-married status – this is quite aside from the fact that a woman's marital status ascertained in her interview as an eligible respondent turned out to be different from what appeared in the household schedule.

4 Errors or omissions of a mother's line designation: there is a larger than expected proportion of married couples in a younger generation where neither husband nor wife is designated as son or daughter of the wife in the older generation.

The above error types can adversely affect the task of household type classification as will be seen. There are errors of other types which can effect the matching of household classification data with the individual eligible respondent's recode record (the record that gives her age, marriage history, pregnancy history and various other characteristics).

It should be noted that these various errors are not necessarily coding errors; they could as well be key-punch errors or even errors in the transcription of punch-card data to tape. In any event, they do pose a serious problem in household classification if they are at all numerous.

IV COMPUTER PROGRAMS FOR CLASSIFICATION OF HOUSEHOLDS

Copies of the actual FORTRAN computer programs used for classification of households in Sri Lanka and Bangladesh are available from the Department of Demography, Australian National University. Each program includes comment lines which identify many of the symbols used, so that readers conversant with FORTRAN may be able to follow the program. However, the more essential parts of either program may be described here in everyday language:

1 For each household, the program first reads in the data for each individual household member (the member's line number, generation code, couple code, mother's line, sex, age, marital status, and whether or not the member is an eligible respondent).

2 The program associates together the members of each married couple by matching members on the basis of their couple code.

3 The program determines what persons other than members of couples are present in the household, specifically those of the couples' own generation, the next older generation and ever-married members of a younger generation. It does not take into account the relationship of never-married members of any generation younger than the youngest married couple. (Note: the terms older, younger and youngest refer to generation, not to age.)

4 On the basis of pre-determined formula, the program computes the household classification type for the household. For example, to a household which includes only one married couple with no other persons in the couple's generation, no persons in the next older generation and no ever-married persons in the next younger generation, the program would assign the type code 1.

5 The program assigns to each eligible respondent in the household the household's type as obtained in step 4, and the eligible respondent's generation code and marital status.

6 The output of the program includes the following:

   (a) A disk output record for each household, whether or not there is an eligible respondent in the household, containing the household identification, the household type and some household characteristics such as number of members and sex and age of head.

   (b) A disk output for each eligible respondent, containing her identification, her generation code, the household type and some other characteristics; this disk record is subsequently matched and merged with the eligible respondent's individual recode record[28] (matching described in section VI of this appendix).

   (c) A printed output tabulating all eligible respondents according to household type and generation code.

For Sri Lanka, disk output on household type includes sub-type. For Bangladesh, the number of wives of the husband is included in disk output. For both countries, number of eligible respondents in the household is included. Age and marital status of the eligible respondent as shown in the household schedule are also included so that they may later be compared with the age and marital status shown in her recode record.

V CLASSIFICATION OF HOUSEHOLD TYPES, SRI LANKA

The 15 types into which Sri Lanka households were classified are described in chapter 2 and also in the following chart:

[28] The recode record is the standard WFS record prepared for each eligible respondent, derived from information obtained in her individual questionnaire.

1 Households with one married couple

Type	Additional related persons included in the household		
	Persons in couple's own generation	Persons in couple's parents' generation	Persons in couple's children's generation
1	None	None	Never-married only
2	Never-married only	None	Never-married only
3	No restriction	None	Never-married only
4	Never-married only	None	No restriction
5	No restriction	Husband's mother[a]	No restriction
6	No restriction	Wife's mother[a]	No restriction
7	No restriction	Other persons[a]	No restriction

[a] See chapter 2 text for more exact description.

2 Other households

8	Two married couples in the same generation.
9	Two married couples in successive generations, with younger couple the son and daughter-in-law of the elder.
10	Same as 9, but with younger couple being daughter and son-in-law.
11	Other two-couple households.
12	Three or more married couples in the same generation.
13	Other households with three or more married couples.
14	Households without married couples.
15	Households where three or more persons had the same couple code.

The following is a tabulation (unweighted data) by type of households and eligible respondents:

Type	Number of households	% of total	Number of eligible respondents: As found from household classification computer program	% of total	Number of eligible respondents: Successfully matched and merged with recode records	% of total
1	4436	55	3669	54	3642	55
2	281	19	257	25	256	25
3	123		141		141	
4	310		365		360	
5	330		336		336	
6	291		325		323	
7	288		281		279	
8	64	8	128	13	126	13
9	248		288		286	
10	258		355		351	
11	20		31		31	
12	3		9		9	
13	40		88		87	
14	1429	18	548	8	536	8
15	15	–	24	–	24	–
Totals	8136	100	6845	100	6787	100

VI CLASSIFICATION OF HOUSEHOLD TYPES, BANGLADESH

In the case of Bangladesh, a much more complicated set of household types was set up for single-couple households. The following criteria were used for differentiating these types:

1 Whether, in the married couple's own generation, there were:

(a) No additional related persons other than the couple themselves.
(b) Additional persons, but no additional ever-married persons.
(c) Additional ever-married persons.

2 Whether, in the married couple's parents' generation, there were:

(a) No ever-married related persons.
(b) Ever-married male related persons but no ever-married female related persons.
(c) Ever-married female related persons but no ever-married male related persons.
(d) Ever-married related persons of both sexes (not married to each other).

3 Whether, in the married couple's children's generation, there were:

(a) No ever-married persons.
(b) One or more ever-married persons.

The combination of these criteria produced 24 types, specified as follows:

Type	1	2	3	Type	1	2	3
1	a	a	a	13	b	c	a
2	a	a	b	14	b	c	b
3	a	b	a	15	b	d	a
4	a	b	b	16	b	d	b
5	a	c	a	17	c	a	a
6	a	c	b	18	c	a	b
7	a	d	a	19	c	b	a
8	a	d	b	20	c	b	b
9	b	a	a	21	c	c	a
10	b	a	b	22	c	c	b
11	b	b	a	23	c	d	a
12	b	b	b	24	c	d	b

Types 8, 12, 16, 20, 23 and 24 were found not to have any households. Types 25–32 for Bangladesh correspond exactly to types 8–15, respectively, for Sri Lanka.

For Bangladesh, the distributions by type of households and eligible respondents were as follows:

Type	Number of households		% of total	Number of eligible respondents: As found from household classification computer program		% of total	Number of eligible respondents: Successfully matched and merged with recode records		% of total
1	2631		45	2384		36	2355		36
2	308			496			477		
3	83			78			78		
4	3			4			4		
5	390			407			405		
6	28			47			44		
7	1			2			2		
9	153			141			140		
10	3			7			6		
11	29	1386	24	27	1798	27	26	1751 [1]	27
13	165			208			201		
14	1			1			1		
15	6			8			8		
17	100			141			139		
18	22			49			46		
19	16			23			21		
21	76			154			148		
22	2			5			5		
25	122			246			240		
26	422			638			631		
27	78			146			142		
28	70	899	15	112	1628	24	109	1589	24
29	39			105			101		
30	168			381			366		
31	811		4	559		8	544		8
32	127		2	264		4	255		4
Totals	5854		100	6633		100	6494		100

VII THE MATCHING PROCESS

The outputs of the household classification program (see section IV of this appendix) included:

1 A household output, in which a record was included for each household irrespective of whether there were any eligible respondents, such records being of potential use in studying household structure independently of fertility or other characteristics of eligible respondents, and
2 An eligible respondent output for each woman designated in the household data as being an eligible respondent.

There were often, and particularly in Bangladesh, two or more eligible respondents in the same household; in fact Bangladesh had more eligible respondent output records (6633) than household records (5854), while in Sri Lanka the households exceeded the eligible respondents.

The eligible respondent output record for each country consisted of the identification of the woman (her household number plus a two-digit line number representing the line number in the household schedule in which she appeared), plus the following items of information derived from the household schedule or the classification program:

1 Household type.
2 Household sub-type (Sri Lanka only).
3 The woman's generation code.
4 Her marital status as coded in the household schedule, or a special code if she were shown as married but with husband absent (ie not listed in the household schedule).
5 Her age as shown in the household schedule.
6 The number of eligible respondents in the household.
7 Her sequence among such eligible respondents.
8 The number of wives her husband is shown as having (Bangladesh only).

A computer program was then applied to match this household record for the eligible respondent with her individual recode record, so called because it was derived from the recoded information prepared from the eligible respondent information obtained from the individual questionnaire.

The computer program both matched and merged the data, adding to the recode record (wherever there was a successful match) the various items from the household record listed above. There were a number of mis-matches, cases where there was either a household record without a corresponding recode record, or a recode without a household. The former were the more numerous, largely arising from the fact that some eligible respondents were not interviewed for the individual questionnaire. The latter were relatively few (in the case of Bangladesh only 21) and resulted apparently from an incorrect transcription of identification number onto the individual questionnaire. In the case of Sri Lanka, about half of the mis-matches of recode records were resolved, partly by means of comparison of the woman's age in both records; for Bangladesh, no attempt was made to resolve the mis-matches, as they were very few.

The results were as follows: for Sri Lanka there were 6787 matched eligible respondents records (unweighted data) out of a total of 6845 eligible respondent outputs from the household data, and in comparison with a total of 6810 recode records. For Bangladesh there were 6494 matched records out of a total of 6633 outputs from the household data and in comparison with 6515 total recode records.

VIII SPECIAL PROBLEMS IN TREATMENT OF DATA

The following section takes up special problems that came up in connection with the procedures utilized in this study.

The Weighting of Data

The WFS projects in both Sri Lanka and Bangladesh involved stratified sampling, which necessitated the assignment of different weights to data of different strata in order to produce data that would be representative of the country as a whole to be included in published reports. In Bangladesh the corrective weighting was simply that rural data received one weight and urban a second and lower weight to make up for the fact that the sampling proportion was higher in urban areas. In Sri Lanka, on the other hand, there were 17 different strata, each with its own weight, though for the four strata in Colombo city the weights were almost identical.

For the purposes of this illustrative analysis, no weighting was employed for Bangladesh, as much of its analysis was conducted separately for rural and urban areas (and incidentally rural and urban fertility were quite similar) so that weighting was not of particular importance. For Sri Lanka, on the other hand, the weighting factors were applied and figures given in the text are based on weighted data except where otherwise indicated.

Editing the Household Data

In view of what has been pointed out regarding the nature and effect of errors in the household data, and since the data had not been mechanically edited, nor was it possible to refer to the source documents, several edit checks were built into the household classification computer program. These checks did the following:

1 Flagged cases where a data card (containing data on four members) appeared to be missing;
2 Checked to see that each member of a married couple had a code indicating married status;
3 Checked to see that each member of a married couple had the same couple code;
4 Checked to see that the mother's line code was either within the range of line numbers for other household members or was 88, never zero;
5 Checked to see that a household member meeting eligible respondent qualifications (as to sex, age, *de facto* residence and marital status) had been coded as an eligible respondent;
6 Flagged all cases where three or more household members had the same couple code.

Wherever possible, cases identified under one of these conditions were remedied. For example, under check (5) it was sometimes possible to identify and match an eligible respondent who had in fact been interviewed as such

but whose recode record had not been matched with her household record. Check (6) made it possible to verify the situation of a polygamous marriage (when one male and two or three females had the same couple code) as distinct from the case where two males and two females had all received the same couple code (instead of two couple codes).

Question of Residence

It has already been mentioned that the household information for each person included two items as to residence in the household, namely (1) whether the person usually lived in the household and (2) whether the person had slept there the night immediately preceding the survey interview. The first of these is to denote *de jure* residence, the second *de facto*. Whether or not an ever-married woman under age 50 was treated as an eligible respondent depended upon whether she had slept in the household the preceding night.

The programs used for this study included *all* persons listed in the household except those few who are indicated as neither *de jure* nor *de facto* residence. The purpose of this treatment was to maximize the possibility of counting all married couples where we have both spouses listed and thereby get a more proper household classification.

As will be seen, even though we used this procedure, we still found a comparatively large number of women who are represented as married but whose husbands are not listed in the household schedule even as *de jure* residents. These we treated as 'married, spouse absent', but did not represent them and their husbands as constituting married couples for the purpose of classifying the household. Presumably, those husbands listed as *de jure* but not *de facto* were those who are away from home on a temporary basis, while those who are not listed at all are absent for most of the time, presumably because of distant employment. It might be thought that many of the wives whose husbands were not listed at all were in reality separated or divorced, but when their household output records were merged with individual recode records for eligible respondents it was found that most of them had represented themselves in their individual interviews as married. On the other hand, as pointed out in chapter 3, the fertility of these women was distinctly lower than that of women whose husbands were listed in the schedules.

There is no doubt that our procedure has increased the size of many households over what the size would have been had we handled everything strictly on *de facto,* or, for that matter, strictly on *de jure* basis. The following unweighted household population statistics for Sri Lanka and Bangladesh should be of interest, they relate to the two columns for each listed member which indicate (a) whether he usually resides in the household and (b) whether he slept in the household the immediately preceding night:

	(a) = yes (b) = yes	(a) = yes (b) = no	(a) = no (b) = yes	(a) = no (b) = no	Total
Sri Lanka	45 685	1721	492	6	47 904
Bangladesh	33 289	2372	1378	24	37 063

We did exclude those persons who were listed 'no' on both counts, but even so we had a total household population of 47898 for Sri Lanka, whereas a strictly *de facto* population would have been 46177 (the sum of 45685 and 492), a difference of between 3 and 4 per cent; a difference of 6–7 per cent resulted for Bangladesh.

Had we taken the population strictly on a *de facto* basis, the household classification results would have been greatly different from the results we actually used. For Bangladesh, for example, we would have had 300 additional household and 195 additional eligible respondents (on a pre-matching basis) in the incomplete household category (type 31) who are now included in other household types. The decision as to whether to go strictly *de facto,* or to include all members who are on either *de facto* or *de jure* basis, was a crucial one.

Appendix B – Sri Lanka Standard-of-Living Score

The standard-of-living score for Sri Lanka was developed in the London WFS office and points were counted as follows:

3 points for motorized vehicle;

2 points each for refrigerator, telephone or tape recorder;

2 points each for water supplied by pipe or pump, for flush or water-seal toilet, for electric or petromax lighting, for tile or asbestos roof;

1 point each for private well, for bucket or cesspit toilet, for cement, stone or brick walls, for metal roof, for bicycle, sewing machine, radio, clock or watch.

Appendix C - WFS Standard Classification of Households

While this illustrative analysis was under preparation, the WFS office in London created a simpler standard classification of households that is now being introduced on the WFS household member tapes. The WFS classification of household type differs from the one developed in this analysis in several ways. First, it is based on *de jure* household members only. Secondly, the types were constructed by looking only at men with couple codes 1–7 and no correction was done for missing halves of the couples. Thirdly, no identification of the additional members of the family was attempted (such as mother-in-law, polygamous households, etc).

The five main categories in this standard classification are:

1 – household with no couples
2 – nuclear (one couple) households
3 – laterally extended households (two and more couples of the same generation)
4 – vertically extended (two and more generations with one couple in each)
5 – vertically and laterally extended (two and more generations with two and more couples in at least one).

Because of the differences in the principal approach to the household data classification the distribution of the households by type derived from the WFS standard and the classification used in this analysis will be different. In particular it should be noted that nuclear under the WFS standard includes households that in this illustrative analysis are called nuclear extended.

The distributions of total household populations by household types using the WFS standard classification for Sri Lanka and Bangladesh are given below:

Household classification according to WFS standard

	Household type (percentages)					
Country	No couple	Nuclear	Laterally extended	Vertically extended	Laterally and vertically extended	N
A Sri Lanka						
Total	11.20	77.67	1.21	8.90	1.04	47 666
Urban	12.26	73.25	2.22	9.73	2.55	8 829
Rural	10.64	78.78	0.89	8.98	0.71	35 147
Estate	13.77	77.72	1.59	6.37	0.57	3 690
B Bangladesh						
Total	9.23	66.08	5.00	14.08	5.61	36 351
Urban	8.99	69.44	4.88	11.93	4.76	3 236
Rural	9.25	65.69	5.01	14.30	5.75	33 114