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## Fertility Patterns in Kerala, India: An Assessment of the Role of Modernization and Family Planning in Determining Fertility Norms and Behavior

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FERTILITY PATTERNS IN KERALA, INDIA  
AN ASSESSMENT OF THE ROLE OF  
MODERNIZATION AND FAMILY PLANNING  
IN DETERMINING FERTILITY NORMS AND BEHAVIOR

by  
Marilyn Fernandez

A Dissertation submitted to the Faculty of the Graduate School  
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Finally, my sincere appreciation to my parents who gave me the freedom to pursue the field of my choice, even if it meant leaving home. To them, I dedicate this dissertation.

## VITA

The author, Marilyn Fernandez, is the daughter of Sydney George Fernandez and Christine (D'Souza) Fernandez. She was born on December 8, 1952, in Trichur, Kerala, India.

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## CHAPTER I

# INDIA'S POPULATION PREDICAMENT: THE NEED FOR A DUAL APPROACH

### Introduction

Explosive population growth in India is generally considered the most serious obstacle to her social and economic development and a major contributor to the world's population growth. Although India encompasses only 2.4% of the world's land area, it contains 15% of the world's population. In mid-1978, India's population was 638.3 million (Nortman and Hofstatter, 1980: 10). And it has been increasing at the rate of more than one million a month as suggested by the preliminary estimates from the 1981 census which placed India's population at 683.8 million (Visaria and Visaria, 1981: 3). The major cause of this rapid population growth is the gap in the timing of the decline of the mortality and fertility rates. Mortality has declined considerably during the past few decades mainly due to significant improvements in world medical knowledge and public health measures. This improved mortality control technology was quite readily importable since it is relatively independent of a country's level and pace of socio-economic devel-

opment. In contrast, fertility which is more heavily dependent on the social and economic forces of development has not registered the same rates of decline, thus, creating rapid population growth. Mortality rates have declined from 48.6 per 1000 in the 1911-1921 decade to an estimated 15 per 1000 in 1978. Birth rates, on the other hand, have just declined to 34-35 per 1000 (estimate) in 1978 from a high of 45.5 per 1000 in the 1911-1921 decade.<sup>1</sup> The future direction of India's population change will, therefore, depend mainly on the trends in the birth rate.

A welcome trend in the levelling off of the nation's population growth rates during the 1971-81 decade is evident in the preliminary results of the 1981 census (Population Council, 1981: 325-334). According to the Population Council report, the average annual growth rate for the 1971-1981 decade was 2.23%, slightly higher than the 2.2% of the 1961-1971 decade. The states of Kerala, Tamil Nadu, and Orissa are the main contributors to this stabilization in the growth rate.<sup>2</sup> Among these three states, Kerala's experience is particularly significant in that the decline in her growth rate between 1961 and 1981 has been the most pronounced. Kerala's population grew at a high annual rate of

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<sup>1</sup>Data for the 1911-1921 decade were obtained from the United Nations (1965) publication while the Nortman-Hofstadter (1980) compendium was the source for the 1978 data.

<sup>2</sup>The average annual growth rates for Kerala, Tamil Nadu, and Orissa during the 1971-1981 decade were 1.74%, 1.59%, and 1.8% respectively.

2.34% in the 1961-1971 decade before dropping to a low of 1.74% during 1971-1981. A detailed analysis of Kerala's population experience in the 1970s may provide useful information and guidelines for an effective national population policy.

Continuous reductions in mortality rates and lack of significant opportunities for migration requires concentration on fertility declines as the principal source of the decline. Modernization and an effective family planning program have been the two major components of the population control policy at the national and state levels. It is hypothesized that modernization and the family planning program will influence fertility in two ways: at the normative level they may engender changes in individual's attitudes toward and desires for large families; at the behavioral level, they can lead to smaller family sizes. Unfortunately, these two approaches have been central to competing rather than complementary propositions.

#### Modernization And Fertility Behavior

A major theme at the 1974 World Population Conference in Bucharest was "Development is the best contraceptive." Citing the fertility reductions attained during the industrialization of the West, reductions that were achieved without family planning programs, the Third World argued for more aid in their economic development from the advanced nations (Tak, Haub, and Murphy, 1979: 31). The central

thesis of the development or modernization argument is that unless a small family is economically beneficial and hence desired, provision of family planning services will not be effective in controlling fertility. Modernization would create the necessary conditions and motivations that are likely to lead to a decline in fertility.

Moore (1974) and Desai (1976) discuss these necessary conditions in terms of the core processes that modernization involves. The following are some of the processes that are considered important indicators of modernization: changes in socio-economic status through improvements in education, income, and occupation; shifts from rural to urban living and from a predominantly agrarian to a predominantly industrial economy; better accessibility to modern health care facilities, improvements in life expectancy and reductions in infant mortality; improved work opportunities and status for women, changes in the structures and role relations in the family; and changes in the value orientations from a traditional-fatalistic outlook to one in which the individual has more control (rational choice) over his actions. Finally, demographic changes in the form of declining birth and death rates are also considered integral parts of modernization (Moore, 1974: 100-102).

Social demographers who view modernization as the prime mover of fertility decline use the theory of household choice as a frame of reference. One of its basic tenets is that economic factors ultimately influence fertility deci-

sion making (Carvajal and Geithman, 1976: 32-39). As Murdoch (1980: 26) stated it, "the great mass of poverty stricken peoples of the world have large families because they are poor and because having a large family is the economically rational decision for poor parents to make."<sup>3</sup> In other words, couples generally attempt to maximize the utility derived from children and other goods and services within the constraints of price, time, and income. The changes involved in modernization, like improvements in income, education, and work opportunities, especially for women, reductions in infant mortality, and egalitarian family relationships, open up other functions, sources of income, and means of personal satisfaction which are effective alternatives to childbearing. For example, compulsory education for children, legislation against child labor, and mechanization of agriculture are a few of the modern elements that will reduce the economic productiveness of the offspring in their childhood. At the same time, when higher education becomes an effective means to higher status, parents would tend to invest more in a few children. Fur-

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<sup>3</sup>The analysis of the failure of the Khanna study in a Punjab village by Mamdani (1972) provides a good example. According to Mamdani, the villagers refused to use contraception that was offered to them because to do so "---would have meant to willfully court economic disaster." (Mamdani, 1972: 21). Given the existing village economy, the only means to a higher status for these poor villagers was to have many sons. They could either contribute to the working of the land in lieu of hired labor and increase savings to be used in purchasing more land or they could find employment in the city in order to help the parents.

ther, the improvements in educational, occupational, and income status of people, by permitting savings for the future, will reduce dependence on children as a security for old age. In short, as the standard of living of couples improves, the costs of children relative to the benefits derived from them increases, influencing motivation in the direction of smaller families.

Following this argument, it is often recommended that planned economic and social growth should form the major part of the action program designed to control population (Glass, 1965: 23-24; Davis, 1975). In the absence of improvements in living standards, birth control programs will not be effective. According to Davis, the population policies of many developing countries ignore the motivation or desire to have large families. Favorable attitudes toward and acceptance of birth control methods, scientifically determined through the KAP surveys,<sup>4</sup> are falsely considered synonymous with desires for smaller families. It is possible for women to desire to use contraception after they have had a certain number of children, generally a number higher than the replacement level. Quite frequently, contraception is desired only for the purposes of spacing, although that is likely to reduce overall fertility to a

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<sup>4</sup>Knowledge, Attitudes, and Practice (KAP) surveys were conducted in several countries to determine the extent of the people's knowledge of, attitudes towards, and practice of contraception.

limited extent. Basic changes in the social and economic structure will be necessary if parental motivation for having large families is to be affected.

Davis (1975: 31-32) also cites the case of Taiwan where the birth rates declined dramatically from a high of 50.0 in 1951 to 32.7 in 1965. Although several researchers have attributed this decline to the family planning campaign in Taiwan, the program was begun only in 1963. In contrast, argues Davis, "the decline represents a response to modernization similar to that made by all countries that have become industrialized." (Davis, 1975: 32). Modernization in Taiwan represented a combination of rapid economic growth and population increase in a limited territory which made large families disadvantageous. These factors created a high demand for abortions and other contraceptives at a time when the family planning program was started. Thus, even the post 1963 decline in fertility is not completely due to the program.

Much research has also been done to document the role of socio-economic development in reducing birth rates. Kasarda (1971), Heer (1968), and Ekanem (1972) are among those who have used cross-sectional and time series data from different nations to analyze the relationship between economic development and fertility. These studies assume that people in the developed and rapidly developing societies would adopt family planning irrespective of whether a family planning program exists. They also postulate the



success of a program to depend on a high degree of urbanization and industrialization, with their concomitant shifts in desires toward small families. Hence, they concentrate on studying the relationship of economic development and fertility using different indices of development. For example, Kasarda uses levels of urbanization, industrialization, and education as exogenous variables whose effect on fertility is mediated mainly through the proportion of women employed in the non-agricultural occupations, proportion of women who are unpaid family workers, and extent of child labor.

Using data from Latin American countries, Oechsli and Kirk (1975) discuss how fertility declines are an integral aspect of modernization. Major declines in fertility were found to occur in those countries which had achieved sufficient social and economic progress to achieve substantially low levels of mortality. What is even more significant is that within a country such as Brazil fertility differences between regions corresponded with their levels of modernization. For example, the highest birth rates of 40 to 46 per 1000 were found in the Northeastern states of Brazil which were the least developed areas. On the other hand, the lowest birth rates (20-30) were associated with the most developed states while the regions with some development had birth rates between 30 and 40. This type of evidence is the basis for the argument made by the advocates of the development approach that unless a society undergoes modernization,

thereby changing the structural influences on the motivation for a large family, fertility reductions will not be achieved.

### Family Planning And Fertility

At the other extreme is the family planning perspective, best exemplified by the work of Tsui and Bogue (1978, 1979). They utilized socioeconomic and family planning data from 113 third world countries for the time period of 1968-1975 in evaluating the role of family planning programs. Although modernization was not substantial in these countries between 1968 and 1975, they had succeeded in reducing their fertility. Further, it was the countries with higher 1968 birth rates that had achieved pronounced declines in fertility. This success, according to Tsui and Bogue, was largely due to the organized family planning efforts initiated in these countries in the early 1960s. Hence, "instead of clinging to the doctrine that general economic and social development is the dominant cause of fertility decline, demographers should be willing to consider the possibility that a major factor in recent fertility declines in LDCs has been the massive intervention of organized family planning programs" (Tsui and Bogue, 1979: 103).

One of the classic examples of the role of family planning program in fertility declines is that of Java and

Bali in Indonesia.<sup>5</sup> According to researchers, it was the family planning campaign vigorously initiated in 1971 in Java and Bali that was responsible for seventy-five percent of the fertility reduction between 1967-71 and 1976. In Bali the birth rate in 1976 was 28 per 1000, a sharp decline from a high of 44 around 1968. By the end of 1976, nearly 50% of the eligible couples were also using birth control compared to practically no users in 1971. At the same time, there was relatively little change in fertility in other parts of the country where the program was not as strong during this period.

Tsui and Bogue propose a new theory of fertility to take account of this new evidence (1979: 104-105). If through family planning programs individuals are informed that limiting their family size will help in improving their living standards, they will tend to do so under certain conditions: if they believe the message; if they have the required knowledge about contraception; if they believe that the methods are effective, socially acceptable, relatively harmless, and easy to use; and if the methods are available readily and economically. Thus, even if standards of living, education, and other status characteristics are low, family planning programs which create the required 'cognitive preparation' and which provide the necessary services

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<sup>5</sup>The following discussion on Indonesia is taken from Murdoch, 1980: 54-55 and Tak, Haub, and Murphy, 1979: 33-34.

will achieve the desired reductions in family size.

Although this theory is very appealing and promising,<sup>6</sup> no conclusive evidence exists that a family planning program, in itself, can lead to substantial declines. An immediate example is that of India which has had an official program since 1952 and whose family planning budget has been increasing every year so that in 1975 it was almost one and one-half times its health budget (146%, Tsui and Bogue, 1978: 28). Yet, the decline in its total fertility rates has been only 8% between 1968 and 1975, one of the lowest among the 113 countries studied by Tsui and Bogue (1978: 13). At the same time, substantial declines in fertility have been achieved in countries even before family planning programs were begun, as in the case of Taiwan discussed earlier. In Indonesia (Murdoch, 1980: 55), fertility declines had begun before 1971, the year the family planning program was begun. These declines are attributed partly to the rising age at marriage of the 1960s, a trend that continued into the 1970s.

Moreover, the advocates of the family planning perspective do not make clear whether the fertility declines were attained by the programs in the absence of the changes in motivation generally occasioned by modernization. In Indonesia for example, between 1965 and 1974, when fertility

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<sup>6</sup>The source for the ideas concerning the pitfalls of the family planning perspective in the following two paragraphs is Murdoch, 1980: 55-56.

declines were spectacular, per capita gross national product also increased by an average of 4.1% per year, chiefly due to the sale of oil. Further, in Bali, where the fertility decline has been greatest, a large proportion of women were employed outside the home and demand for child labor was reduced because of collective farming which was introduced on a large scale during the same period. Thus, the evidence does not warrant the unequivocal conclusion of the primary role of family planning drawn by the supporters of the family planning perspective.

This is especially true of Tsui and Bogue's analysis (1978) of socio-economic and family planning data. In a regression analysis of the 1975 total fertility rates on the level of socioeconomic development in 1968, status of family planning in 1972, and the 1968 total fertility rate estimates, the model was found to explain 86% of the total variance. 76% of the variance was due to the 1968 total fertility rate, the strongest predictor. The family planning effort index accounted for 4.7% of the variance after the effect of the 1968 total fertility rates and the socioeconomic variables had been considered. The rest of the variance (5.5%) was attributed to the independent effect of the five socioeconomic variables. Therefore, Tsui and Bogue contended that family planning has an independent and significant impact on fertility. This conclusion, however, is only one side of the picture. An equally strong and independent influence is seen in the case of the socioeconomic

indices, even though they have to be considered collectively. Moreover, there is no difference in the total variation (5.5%) explained by the socioeconomic measures before and after the family planning index was introduced.<sup>7</sup> Changes in the regression coefficients of the socio-economic variables after the introduction of the family planning index also suggests an association between the extent of modernization in 1968 and family planning status in 1972. For example, the standardized regression coefficients for the per capita Gross National Product in 1968 was reduced in half from .125 to .067, after the family planning effort score was entered into the equation. Similar patterns are evident in the case of infant mortality rates and percentage of females employed in agriculture in 1968. The regression coefficients became much smaller after the family planning index was introduced. It is, therefore, a strong possibility that the effect of modernization on fertility is mainly indirect through its influence on family planning. A path analytic model, in lieu of the multiple regression model used by Tsui and Bogue, would have clarified the nature of the indirect role of modernization on fertility through family planning. Such an analysis would have also minimized the possibility of rash conclusions as to the predominant significance of family planning on fertility declines.

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<sup>7</sup>Unfortunately, the differences in variance explained by the family planning index before and after the socioeconomic measures were introduced are not available.

Another caution in accepting Tsui and Bogue's conclusion about the role of socio-economic development is voiced by Murdoch (1980: 57). Most research has indicated that socio-economic development is one of the major influences on fertility levels around 1968.<sup>8</sup> Fertility levels in 1968 were the best predictors of the 1975 fertility levels in Tsui and Bogue's analysis. Therefore, the same processes of modernization which influenced the 1968 fertility rates should be relevant to the fertility levels in 1975 too. Murdoch also criticizes Tsui and Bogue for omitting crucial determinants of fertility, such as distribution of income, literacy, and life expectancy, from their analysis. When critical factors are not included in the measurement of socio-economic development, the proportion of variance explained is bound to be smaller.

The major reason for these conflicting conclusions is the differences in perspectives adopted in interpreting the data. Taiwan is a good case in point. On the one hand, researchers such as Davis (1975) and Li (1973) concluded that the declines in Taiwan's fertility rates since 1956 were not induced by the family planning program initiated in 1963, but by the reduced infant mortality and improved educational status. A revealing example is found in the exam-

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<sup>8</sup>Even though some countries initiated family planning programs in the early sixties or even earlier, vigorous implementation of the programs did not start until the late sixties and early seventies when international attention began to be focussed on population and modernization.

ple of Taichung city, where fertility rates did not change much inspite of the concentration of action programs. In fact, the decline in the fertility of women in the major cities and rural towns of Taiwan was higher than that in Taichung (Li, 1973: 101). On the other hand, Srikantan (1977: 227) and Schultz (1973), among others, contend that the family planning program in Taiwan speeded up the fertility declines that had already begun much earlier under the influence of modernization.

### Complementarity Of Family Planning And Modernization

From the conflicting and complementary research on the correlates of fertility declines in developing countries discussed thus far, one definitive conclusion can be drawn. Both modernization and family planning programs seem necessary if future declines in fertility are to be achieved quickly and efficiently. Modernization induces shifts in motivation toward smaller families. The family planning programs not only legitimize these small family norms but also provide couples the necessary means to actualize these norms.

Historically, fertility declines, through voluntary family limitation, started in Europe under a wide range of levels in socioeconomic development (Walle and Knodel, 1980: 29-40). For example, reductions in fertility began in Hungary, France, and Bulgaria, when these societies were predominantly agrarian and had low literacy rates. On the other



hand, fertility declines through family limitation did not begin in England and Wales until it was highly urbanized and industrialized.

A mixed picture is also obtained in the case of today's developing countries. One of the best sources from this point of view is the cross-country study done by Mauldin and Berelson (1978). They analyzed the relation of several indices of socioeconomic development around 1970 and an index of the government's effort in family planning to changes in fertility between 1965 and 1975 in 94 developing countries.<sup>9</sup> Singapore, Korea, and Costa Rica, for example, which had a high level of modernization and a strong family planning program experienced around 29-40% declines in fertility (clearly the largest) between 1965 and 1975. Declines were modest in the case of countries with advanced development but weak family planning programs (Brazil, 10% and Turkey, 16%) as well as in nations with moderately strong family planning programs, but low levels of modern-

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<sup>9</sup>The index of socio-economic development comprised of adult literacy levels, proportion of 5-19 year olds enrolled in school, per capita GNP, proportion of adult males engaged in non-agricultural occupations, percentage of population living in cities with 100,000 or more, infant mortality rate, and life expectancy at birth. 15 items were included in the index of family planning effort reflecting the role of government in the family planning effort, availability of different methods of contraception, efforts to provide education, information, and methods and the sources used, and the extent of program evaluation. The composite score ranged from a low of 0 to a high of 30 since the responses were given a value of 2 for yes, 1 for a qualified yes, and 0 for no.

ization (India, 16% and Indonesia, 13%). Mauldin and Berelson's research indicates that "social and economic conditions in which family planning programs can be effective may not be so stringent as once believed" (Birdsall, 1980: 37).

Yet, while well organized programs that provide information and methods of family limitation have contributed to the fertility decline in many countries, its efficacy would be improved if there were concomittant modernization. Research has shown that lower status individuals, i.e., those with lower education, income, and other socio-economic statuses, generally have the least access to the modern family limitation services. Birdsall (1980: 38-39) presents data from the World Fertility Surveys for developing countries. Those with less education and rural women were the most likely not to use contraception, inspite of not wanting any more children. Rural-urban and educational differences in contraceptive use were also examined by Birdsall after controlling for the strength of the family planning program. In countries with strong programs and relatively advanced modernization, such as South Korea and Costa Rica, very few residential and educational differences were noted compared to the countries with weaker programs. Stronger demand for contraception and easier access to the modern birth control measures on the part of the educated and urban women are major reasons for the differences. These discrepancies are greater in countries where family planning is either not

subsidized or administered by the government and development is low.

The complementarity of modernization and family planning programs at the aggregate level has also been documented by Srikantan (1977) using data around 1970. From his analysis of the family planning programs of several developing countries, he concluded that well developed programs speed up fertility declines initiated by socio-economic development (as operationalized by declining infant mortality and increasing education of women).

Modernization and a family planning program are, thus, clearly interdependent and complementary approaches to the population problem. Improvements in the social and economic statuses of individuals influence motivation in favor of smaller families and create a demand for family limitation services. It is also suggested (although not much researched) that the influence of social and economic characteristics on motivation is mediated through social and cultural factors such as the secularization of attitudes, improvements in the status of women (van den Walle and Knodel, 1980), and openness to outside influences (Beaver, 1975). In this context, a well organized family planning program involving not only the provision of information and services, but also education regarding the benefits for both the individual and society to be derived from smaller families and aimed at all segments of society will help in actualizing these desires for small families. Herein lies the

need for integrating the family planning program with a nation's program for modernization. However, it is not necessary to achieve a threshold level of modernization (which in itself will vary among countries) before implementing the family planning program. As Tak, Haub, and Murphy (1979: 36) suggest on the basis of their analysis of data from the World Fertility Survey, modernization through its influence on education, age at marriage, and infant mortality on the one hand, and family size desires and contraceptive use on the other, is a long run and indirect tool in controlling fertility. In the short run, it is the universal provision of contraceptive information and effective service that will speed up the fertility declines that have already begun in most countries.

Many of the third world countries, recognizing the importance of population problems, have begun to incorporate population policies into their national development plans (Stamper, 1977). For example, 63% (38) of the governments of the 60 countries that Stamper studied do recognize that rapid population growth adversely affects their socio-economic development. Among these 38 countries, only 68%, however, have designed some specific policy to check the rate of population growth. Further, many of these policies do not get implemented during the plan periods. Thus, although population growth is recognized as a problem, there are severe discrepancies between policy and action.

### Modernization And Family Planning In India

Applying this framework to India, we find that some modernization has indeed been accomplished, especially since she gained Independence in 1947.<sup>10</sup> There has been increasing urbanization induced by both industrial and non-industrial forces (such as commercial and administrative). The scale of industrial production for various items has increased considerably. For example, production of coal tripled in the period between 1950-51 (32.8 million tons) and 1974-75 (95.3 million tons). Similarly, within this time period the installed capacity of electricity increased 10 times (from 1.8 million kilowatts to 18.5 million) and there was also a 12 fold increase in the amount of electricity generated (5.9 thousand million kilowatts to 69.4 thousand million). At this stage, the nation possesses the capacity to produce all types of goods and machinery, although not in the quantities required by a modern nation (Johnson, 1979: 133). Further, village and small scale industries, which are more common in India, create jobs and improve the level of economic activity in the smaller towns and villages while working closely with the agricultural economy. Thus, they are a significant element in India's transition to industrial modernization. In the field of agriculture too, the Green Revolution has

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<sup>10</sup>The data on the modernization and the family planning status of India were obtained from the following sources: Nortman and Hofstatter, 1980; Johnson, 1979; Tsui and Bogue, 1978; Government of India, 1979; Gueruvriere, 1973; Stamper, 1977).

played a significant role through the introduction of high yielding varieties of grain and provision of irrigation facilities, fertilizers, and other chemicals, and credit, among other things. For example, the total area under cultivation of crops, such as cereals, pulses, oilseeds, cotton, and jute has increased nearly 45% from 1947-48 to 1974-75.

Aside from the agricultural and industrial sectors, improvements have also been documented in the spheres of education, land reform, health, and general standards of living. There has also been increasing political socialization leading to the development of political consciousness. The caste system, the joint family, and the traditional value system have lost some of their overriding influence on the social structure. These changes, however, have been achieved through a continuous blending of selected traditional values with the ideology of modernization. This integration has been possible partly through the reinterpretation of Hinduism and its religious and philosophical foundations to fit the needs of modernization. India's modernization so far presents a unique pattern that challenges the view of a complete replacement of traditional culture as a basic prerequisite of modernization.

Nevertheless, India has a long way to go before she can be fully modernized. Despite her efforts to industrialize, about 70% of her labor force is still engaged in agriculture and cottage/small scale industries. The primary

sector (agriculture, forestry, fishing, and mining) is still the major contributor to her domestic product. There has, however, been a 6% increase in the contribution of the secondary sector and nearly 8% in that of the tertiary sector between 1950-51 and 1973-74.

A major setback in India's attempt at economic modernization is the rapid growth in population. Total food production doubled from a low of 55 million tons in 1950-51 to 110 million tons in 1976-77. Trends in national income, despite the lack of improvement, have been maintained at nearly the same level of increase (an average of 16%) over the various plan periods. Yet, the doubling of population between 1950 and 1977 has lowered the rate of increase in the per capita income to 2.5% during the fourth plan period (1969-1974) from 11% during the second five year plan.

A per capita income of Rs.850 at current prices or Rs.340 at the 1960-61 prices also conceals considerable inequalities in the distribution of income. For example, at the 1964-65 levels, the richest 10% of the population made an average income of Rs.2498 in 1973-74 in contrast to the Rs.227 earned by the poorest tenth percent. This top 10% also owns nearly 56% of the land and property. Similarly, although educational facilities at all levels have been expanded, 70% of the population is still illiterate and 55% of the students in professional colleges come from 5% of the families where the fathers are professionals. In spite of the social and fiscal policies of the government, glaring

inequalities exist in the standards of living and in the access to the means to improve living conditions. Recent research (Murdoch, 1980; van den Walle and Knodel, 1980) suggests that reducing inequalities in welfare is a crucial component of the attempt to achieve fertility declines.

Other indices of the extent of modernization in India indicate only very moderate successes. In terms of production, the per capita consumption of energy (coal) in 1976 was only 218 kilograms, a mere 2% of the consumption in the United States (11,554 kilograms). Further, by 1975-76, only 29% of the villages were electrified, an essential precondition to the modernization of agriculture. Even the small farmers and peasants, the group most in need of participating in the development process, has not benefitted much from the Green Revolution.

Parallel to these developments, there have only been marginal improvements in health and other social aspects of modernization. Infant mortality has decreased from 130 per 1000 in 1968 to 122 in 1975. Conversely, people were expected to live two years longer in 1975 (life expectancy = 49.5) than in 1968 (47.2). Literacy rates have also increased 4% between 1968 and 1975, along with a 2% increase in the proportion of females enrolled in school (26.2% in 1975).

Another problem in India's modernization lies in the nature of her urbanization. While the urban population as a proportion of the total population has not increased much



(only 19.7% of the population in 1968 and 21.5% in 1975 lived in urban areas), in absolute terms the urban population increased by almost 26 million in the 7 years between 1968 and 1975. This urban growth has occurred with a relatively small level of industrialization, making available fewer opportunities for employment in manufacturing and related occupations to the city immigrants. Moreover, it is the excess of agricultural labor on land, and not the modernization of agriculture, that pushes the Indian villagers to the city (Mookerjee and Morrill, 1973: 17).

These peculiarities in the urbanization, industrialization, and economic growth in India also have important sociocultural implications. The cities in India provide a picture of a small, highly urban sector with very new and modern values coexisting with a mass of urbanites who are not very distant from the rural culture and its social structure. Urban residence, higher socio-economic status, and higher education of women were found to be related to egalitarian relationship between the husband and the wife by Conklin (1973). But, since these characteristics are limited to a small proportion of the population, traditional family relationships still prevail. While attempts have been made to improve the legal and social status of women in India, changes in the former have been more significant than those in the latter (Mehta, 1970). That only 26.2% of the females are enrolled in school in 1975 compared to 43.5% of the males is one indication of the sex disparities in the

access to education.

In general, India since Independence has achieved some success in her transition to a modernized society. But, the pace of modernization has not kept up with the expectations of the government planners and the progress that has been achieved has not been uniformly distributed.

Along with the planned policies to achieve modernization, the Indian government has recognized the importance of controlling population growth, if the fruits of modernization are to be more fully realized.<sup>11</sup> India is the first country to have initiated an official family planning program as a part of its national five year development plans as early as 1952. It was in the second plan period (1956 to 1961), however, that clear cut action and research programs were undertaken. During the fourth five year plan (1969-1974) the family planning budget was Rs.3,300 million and was Rs.5,842 million during 1974-1979, giving it a high priority.<sup>12</sup> Among the developing countries for which similar data is available, India is second only to Bangladesh in the proportion allocated to family planning.

A more detailed look at the components of the Family Planning program indicates a disproportionate amount (78%) being expended on provision of contraceptive services while

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<sup>11</sup>The family planning data is derived from Nortman and Hofstatter, 1980 and Stamper, 1977.

<sup>12</sup>The total government budget for 1969-74 was Rs.157,825 million while for 1974-79 it was Rs.393,032 million.

only 7% is geared to information, education, and personnel training. This unfortunate emphasis on the contraceptive methods is based on the assumption that there exists a demand for contraception, an assumption which cannot be justified, especially in terms of the modest modernization that has been achieved thus far. One mitigating factor is that as of 1978, IUD insertions and sterilizations are not only provided free of cost, but the government provides some compensation to acceptors<sup>13</sup> of these methods for costs of transportation and drugs, and for loss of wages incurred. These and other contraceptives are provided by a system of urban and rural welfare centers (N=7,240 in 1978), rural subcenters (42,875), and postpartum centers (492). There were also 7 central training institutes and 46 health and family welfare training centers in 1978.

How effective have these programs been in influencing the extent of contraceptive use? The total number of acceptors tripped in 1976 (12.8 million) from a low of 4.4 million in 1974 and then declined to 5.6 million in 1978. A promising feature is that more women are accepting contraception at a younger age and at an earlier period in their pregnancy history. For example, during 1965-69, the wife's

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<sup>13</sup>Even the term family planning 'acceptors' suggests that the initiative for contraceptive use comes not from the couples but from the program. In other words, individuals accept the contraceptive methods offered to them by the family planning program, but generally do not request or actively seek out the available services on their own.

median age and the number of living children were 30.1 and 4.0 respectively for IUD acceptors which declined to 27.7 (age) and 2.4 children during 1977-78. Similarly, the median age and number of surviving children for the acceptors of female sterilization declined to 29.9 and 3.4 respectively in 1977-78 from a high of 34 years and 4.4 children. Another indication of the success of the program is seen in that the percentage of married women in the reproductive age using contraception doubled between 1969 (8%) and 1976 (17%) and increased even more sharply by 6% in the three years between 1976 and 1979.<sup>14</sup>

While these figures appear very impressive, especially in the context of the slow pace of modernization, the actual test of the success of the program lies in its effect on the birth rates. In spite of these achievements, there was only an 8% decline in the total fertility rates between 1968 (TFR=5671) and 1975 (TFR=5241) (Tsui and Bogue, 1978: 13). The estimated birth rate in 1978 was 34-35 per 1000, still higher than the 30 per 1000 target set for the end of the fifth five year plan in 1979.

Many studies, nonetheless, indicate that there has been a shift away from the large family norms, with 3-4 children generally being considered the ideal (University of Kerala, 1965; Anker, 1973). The two children family

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<sup>14</sup>The actual figures would be higher because this data includes only acceptors from the public sector units.

(replacement level fertility), the motto of the Indian family planning program, and families with five or more children seem to be much less popular. The average ideal of 3-4 children held by a major section of the population is still too large from the point of view of the nation's overall population. Even if these women succeeded in limiting their births to 3 or 4 children, it would still result in a high rate of multiplication of the population and will postpone further the time when the national goal of replacement level fertility will be reached.

Therefore, the first problem this study is concerned with is the analysis of some of the factors associated with differences in family size ideals in order to identify the factors that have contributed to the lowering of family size ideals. The clue to some of the important variables is evident in Kingsley Davis' (1975: 30) argument that the motivation to have children is socially sanctioned and, therefore, cannot be changed merely through family planning propaganda and mass communication aimed at educating the woman as to the problems of numerous births. In addition to the program, basic changes in the social structure and economy are also necessary to achieve a reduction in the number of children wanted.

Equally important from the perspective of national population growth is how much couples have been able to achieve their ideals, because sizeable differences exist between family size that is considered ideal and the family

size that is actually achieved. This problem becomes even more important in the context of the intensive programs that have been launched in India, especially since 1970, in order to popularize family planning. The numerous KAP (Knowledge, Attitude, and Practice) studies of family planning methods show that knowledge of and favorable attitudes toward family planning are quite widespread (Lahiri, 1974: 324). The next logical question, then, is why the knowledge and favorable attitudes are effectively utilized by only 23% of the married women of reproductive age (1979 levels). Ultimately what is significant is the actual number of surviving children each family has.

Therefore, the second problem that this study deals with refers to the identification of some of the factors that distinguish the couples who have actualized their ideal family size from those who have not. The same factors--social structural, economic, and family planning--that may help differentiate among the family size ideals can also be effective in explaining the differences in actual family sizes of couples and in distinguishing between couples who have been able to achieve their ideals from those who have not. In other words, the two problems under consideration in this study are related. Modernization and an effective family planning program which may bring about a lowering of the ideal family size can also be expected to create a stronger dedication to realizing the ideal, ultimately leading to success in obtaining the low ideal. The broad policy

implication of this study would be as follows: if the characteristics which help distinguish the small ideal-actualizers from the larger ideal-non-actualizers could be made as universal as possible, considerable reductions in family sizes and closing of the gap between mortality and fertility rates could be achieved in India.

### Kerala: A Case In Transition

Kerala provides a striking example of the transitional nature of Indian society. It is unlike any other state in that it is fairly well advanced in some aspects while lagging behind in others.<sup>15</sup> Per capita income in Kerala in 1972-73 was a third lower (Rs. 579) than the all India average (Rs. 850). Corresponding to this, Kerala is one of the few states in India that had 50% or more of its population below the poverty level around 1970-71 with the rural component having an average of Rs.28 per month and the urban poor an average of Rs.43 per month for consumption expenditure. Hence, it is not surprising that the estimated average caloric intake per day around 1973 was 2,200, nearly 200 calories lower than the average per capita calories required for India in general. A diet survey of a region in Trivandrum district suggests the possible socio-economic biases in the high extent of undernutrition. Lower income, lower edu-

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<sup>15</sup>The following sources were used for data regarding Kerala: U.N., 1975; Johnson, 1979; Nortman and Hofstatter, 1980.

cation, and lower occupational statuses interact in determining the large proportion of undernourished and the severity of undernourishment.

The industrial backwardness of Kerala is a primary cause of the poor living standards in the state. Analysis of the labor mobility, however, reveals a paradoxical situation. On the one hand, given the low levels of per capita income, there has been some decline in the proportion of the population engaged in the primary sector from 64.2% in 1901 to 59.3% in 1971. Yet, the labor force movement during this period has been into the tertiary sector and not the secondary sector. Some factors responsible for the growth of the tertiary sector are the high density of population limiting the capacity of the agricultural sector to absorb more people, and the increase in contractual employment. At the same time, industrialization in Kerala still involves processing of agricultural and other goods using labor-intensive methods. Further, nearly a half of the manufacturing is of the household type. These trends have over the years resulted in large scale and increasing unemployment, especially among agricultural laborers and the educated sections. For example, in 1965 there was an 8.3% unemployment rate among individuals over 15 years of age in the total labor force. Kerala also has the highest levels of literacy and educational attainment in India, But, the inadequate growth of employment opportunities has resulted in higher rates of unemployment among the educated in Kerala than



elsewhere.

Another paradox in Kerala's economic situation is seen in the growth of real wage rates by 238%, despite the growing unemployment, the largest increase among all the states between 1956-57 and 1971-72. Unionization of agriculture and the rise of collective bargaining and land reforms are a few factors responsible for the rise in wages. This positive trend, in turn, has saved the consumption standards and inequality rates from further deterioration which would otherwise have occurred given the inadequate growth in wage employment.

Other policy measures adopted during the 1960s to reduce inequalities in the living standards in Kerala include a system of public distribution of food grains through a network of fair price shops in both the rural and urban areas, provision of free noon meals to low income children in elementary schools, and land reforms designed to eliminate the tenancy system and to set ceilings on land ownership. These programs, however, have not been effectively implemented. Inadequate supplies of food has been the major weakness of the distribution program. Loopholes in the land reform legislation and the reluctance on the part of both landlords and tenants to participate in the reforms have slowed down the process of transferring the rights of ownership to the tenants. Even public works programs, such as the crash program for rural employment and the one lakh housing scheme designed to create more employ-

ment, while having short run remedial effects, have not been self sustaining.<sup>16</sup>

In the context of these mixed achievements in the field of socio-economic modernization, it is necessary to assess the demographic trends in the state. Around mid-1973, Kerala had the lowest crude death rates in India, in both its rural (7.9) and urban areas (6.3). Rural-urban differences in the crude death rates are also the smallest for Kerala. Further, not only does Kerala have the lowest infant mortality rate (50 per 1000 live births in 1971), but also has the longest expectation of life at birth (61 years in 1971).<sup>17</sup> A combination of low crude death rates and low infant mortality rates suggest that the low death rate cannot be attributed solely to the younger age structure of the population. These successes, on the contrary, are primarily due to the comparatively lesser inequalities in the access to health care in both urban and rural areas achieved through spreading out the health care facilities and health expenditures to all areas.

Shifts in birth rates, on the other hand, have not

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<sup>16</sup> The one lakh (100,000) housing scheme was a public works program undertaken by the Government of Kerala in early 1972. It was designed to provide permanent housing to landless and homeless agricultural laborers throughout the state.

<sup>17</sup> The corresponding rates for India are a crude death rate of 16.9 per 1000 in 1972, an infant mortality rate in 1971 of 122 per 1000 live births, and life expectancy in 1971 of 47 years.

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been so dramatic. As the data in Table 1 suggests, the declines in birth rate between 1931 and 1960, although consistent, were slightly lower in Kerala compared to the all India average. But, since 1960 Kerala has achieved more substantial declines in birth rates than the nation as a whole. In fact, birth rates in Kerala in 1974 were lower than the national target of 32 per 1000 that was set to be achieved by 1974 by the family planning program. Further, unlike the rest of India, rural fertility in Kerala has declined as significantly as urban fertility. It is these patterns that may provide a primary explanation for the low average annual growth rate in Kerala's population during the 1971-81 decade as discussed at the beginning of this chapter. Improvements in education and health conditions played a major role in the decline, especially during the 1960-1968 period since the family planning programs did not become widespread until the late sixties.

It is generally hypothesized that both family planning and socio-economic factors have contributed to the declines in fertility and population growth since 1970. Very little research has been done, especially at the individual level, to determine the factors responsible for the declines in birth rates and for the variations in fertility. This study, which analyzes cross-sectional data from Kerala, is an attempt in that direction. Analysis of Kerala's fertility patterns may provide guidelines for policies applicable

TABLE 1  
BIRTH RATE TRENDS IN KERALA AND INDIA:  
1931-1978

(Per 1000)<sup>1</sup>

Period	Kerala	India
1931-1940	40.0	45.2
1941-1950	39.8	39.9
1951-1960	38.9	41.7
1968 (Rural)	33.2	39.0
1970 (Rural)	31.9	38.8
1972 (est.)	31.8	36.6
1974 (est.)	27.0	NA
1978 (est.)	NA	34-35

<sup>1</sup>Source: United Nations, Poverty, Unemployment and Development Policy: A Case Study of Selected Issues with Reference to Kerala (New York: Department of Economic and Social Affairs. ST/ESA/29, 1975).

to the rest of India. Most of the progress in Kerala has been achieved through progressive fiscal and social programs of the government designed to reduce inequalities and improve the standards in the living conditions of the people.

## CHAPTER II

### DEMOGRAPHIC TRANSITION THEORY AND ITS RELEVANCE TO KERALA

A useful framework for the analysis of the two central concerns of this study --identifying the factors involved in the lowering of family size ideals and achieving the smaller ideals--is provided by the Demographic Transition model, especially as applied to the present stage in the population history of India. The transition theory is intrinsically connected with the concept of modernization in that "it seeks to characterize three 'stages' of fertility and mortality levels, viewed as derivative from the fundamental economic and social changes of 'development or modernization'" (Teitelbaum, 1975: 174). It is, however, necessary to evaluate the extent to which the transition theory is applicable to a developing society such as India. A brief discussion of the theory in the context of modernization and of the existing research with the transition theory as an organizing principle will aid in this evaluation.

The Demographic Transition Theory And Its Applicability  
To Developing Countries

Among the theories that have been put forward to explain changes in demographic behavior, the transition theory is perhaps the most explicit and simple, and consequently has evoked the most analysis and criticism. Unlike many other theories, the transition theory has its basis in actual historical experience. It was originally developed in order to explain the declining trends in mortality and fertility in the Western world. Later, its applicability was extended to the developing countries, still in the early stages of their transitions. The theory, thus, became the basis for the prediction of future population trends in these countries. In recent decades, however, the theory has been subject to severe criticism, both in its applicability to the Western world and to the developing countries.

Some of the principal proponents of this theory are W.S. Thompson, Blacker, Notestein, Cowgill, and Stolnitz. As these theorists postulate it, Stage I was characteristic of primitive societies and is marked by a population equilibrium achieved through high birth and death rates because the technology needed to control births and deaths is absent. Mortality remains high because of the very precarious nature of existence and the lack of modern means of transportation, medical technology, sanitation, and other amenities. The continued survival of the population, therefore, necessitated the maintenance of high fertility rates commensurate

with the high death rates. Strong, institutionalized, pronatalist norms, backed by societal sanctions maintained the fertility rates at a high level.

Once industrialization and urbanization set in and the technology for death and birth control is developed, death rates tend to be controlled first, since health and long life are universal goals. Stage II, the stage of population explosion, is created by declining mortality rates and fertility desires or actual fertility rates that remain unchanged. It is only later that birth rates are reduced leading to a third stage in which equilibrium is achieved through low death and low birth rates. Fertility declines cannot occur until the pronatalist social and economic institutions are replaced by new institutions which will support the adoption of the small family norm. For example, the shifts away from the extended agrarian family reduce the importance of the family in the spheres of production, recreation, education, and other functions that weaken the pronatalist pressure. With improvements in the educational opportunities and the removal of children from the labor force, the economic value of children is reduced. Further, once infant and general mortality levels decline, fewer births will be necessary to maintain the desired family size.

Within these general trends, differentials exist in the rates of declines in different subgroups of the population. By utilizing the appropriate control technology,



deaths and then births will be controlled, first in the upper social and economic classes and only later in the lower classes. Another differential exists in the tendency for urban birth rates to decline faster than the rural rates. Similarly, birth rates decline faster in the nuclear families than in the extended agrarian families. To quote Stolnitz (1964: 30), "All nations in the Modern Era which have moved from a traditional, agrarian based economic system to a largely industrial, urbanized base have also moved from a condition of high mortality and fertility to low mortality and fertility."

Research using both historical and current data, nonetheless, lends support to the theory only in general terms. Transition theorists support the broad thesis that traditional societies are characterized by high mortality and fertility levels in contrast to the low vital rates in the industrialized societies. It is in their transition to modernization, that societies experience the demographic transition. Apart from this broad pattern, there is no uniformity in the actual process of transition of the modern societies. According to Ansley Coale, a leading transition theorist (1974: 64-65), "the weakness of the concept is associated with the difficulty of defining a precise threshold (a checklist of essential characteristics, or a combined score on some socioeconomic scale) of modernization that will reliably identify a population in which fertility is ready to fall."

Ansley Coale (1974: 56-63) and Teitelbaum (1975: 176-177) have summarized some of the major differences, not only among Western societies in their premodern states, but also among the developing countries of the present day and the premodern societies before the Industrial Revolution. These differences highlight the discrepancies in the specifics of the demographic transition. For example, wide variations existed in the fertility levels of premodern societies. During the early nineteenth century, family size was as low as 5.0 in Sweden while it was estimated to be well over 8.0 in many African groups. Similarly, a fertility rate of over 45 per 1000 in countries such as Tanzania and Iran is much higher than the rate of 35 per 1000 that existed in early nineteenth century Britain. These differences between pretransition Europe and the developing countries is primarily due to the prevalence of late marriage and smaller proportion married in nineteenth century Western Europe. The practice of early and universal marriage in most of today's developing societies is in direct contrast to the Western pattern. As Coale suggests (1974: 56), "the difference between the highest and lowest pre-transition fertility levels is a magnitude comparable to the change in fertility during the transition itself."

Another exception to the general model lies in the process of transition. According to the theory, the rapid population growth in the transition stage is due to the lag in the decline of mortality and fertility rates. Reductions

in mortality were achieved earlier because of the improvements in public health and medical knowledge and also because health and life are valued in every society. These same reasons (emphasis on health and life) maintained fertility at constant high levels. Besides, it was the reduction in infant mortality, by ensuring the survival of the desired number of children, that provided the initial motivation for controlling the family size at later stages of development. Historical evidence, however, indicates discrepancies in this pattern. Dov Friedlander (1969) points out that fertility and mortality rates declined almost simultaneously in nineteenth century France, without the lag and the accelerated population growth. In fact, according to Habakkuk (1953), when rapid population growth did occur, as in England during the eighteenth century, it was the result of rising birth rates and not declining mortality levels. This phenomenon of rising birth rates, in contrast to the fairly constant fertility rates proposed by the transition theory, in the early stages of the transition, was also found in many developing countries of Latin America between 1940 and 1959 (Davis, 1975: 31). The reduction in mortality and improved health conditions that accompany modernization contribute to a rise in birth rates by ensuring the successful completion of pregnancies, the survival to adulthood, and the reduction in the chances of widowhood. To quote Davis (1975: 31), "some of the upward pressure on birth rates-----arises from the fact that, with lowered mor-

tality there are simply more couples."

Advocates of the transition theory (for example, Kam-meyer, 1970: 502) hold that the notion of some increase in fertility as a result of improved living conditions is not incompatible with the transition theory. Increases in birth rates due to the improvements in the official recording of births has also been noted in countries, such as Japan (Taeuber, 1960). There is, however, a serious difficulty with this critique of the transition theory. The critics, in their argument for the role of the increase in fertility, generally tend to ignore the relevance of declining mortality, even if largely indirect, in the accelerated population growth in the early stages of modernization. For example, Tabbarah (1971: 267-268) speaks about the beneficial impacts of health measures on improving fecundity by reducing the incidence of mortality and morbidity associated with childbearing and consequently raising fertility. Thus, both declining mortality and rising fertility were common in the initial stages of the transition and together led to the population growth.

There is, however, no doubt that fertility rates declined after the transitional stage and even after a slight increase in the modernized nations. The transition theory generally holds that these reductions were achieved by these societies in the process of their industrial development and modernization. Nevertheless, considerable variations exist in terms of the economic stage at which fertil-

ity began to decline in the West. According to Goldscheider (1971: 135-181), the birth rates began to decline in France in the late 1700s, almost sixty years before industrialization took place. On the other hand, declines in the English fertility rates did not begin until nearly fifty years after the Industrial Revolution. Goldscheider suggests that the nature of England's industrialization was compatible with her delayed response. Industrialization provided opportunities for rural to urban migration, reducing the pressure on land and the pressure to limit family. Alternately, the possibility of utilizing family labor in the early factory system increased the economic benefits of large families. In France, in contrast, the small rural land holdings, the result of the redistribution of land under the Napoleonic code, increased the agricultural density. This, coupled with the dearth of rural to urban migration opportunities (due to the late industrialization), created sufficient economic pressure on families, especially in the rural areas. Faced with a choice between maintaining a large family and reducing living standards or vice versa, they chose the latter.

These patterns also explain why, unlike the projections of the transition theory, urban fertility was higher than rural fertility towards the end of the nineteenth century in countries such as France, Spain, Bulgaria, and Sweden. Economic pressures to reduce fertility were not as strong in the urban as in the rural areas. It also suggests

an explanation for the absence of prolonged lags between declines in the death and birth rates in these countries.

Some of these factors prevail in today's developing countries too (Teitelbaum, 1975: 176-177). For example, there are very few possibilities for substantial international migration and for occupational and rural to urban mobility in developing countries. These factors pressured European populations, such as France and Sweden, to control their fertility during their demographic transitions because smaller families were one of the most effective means to achieving higher living standards. Yet, they have not led to any large reductions in fertility in a majority of the third world nations, suggesting that the relationship between economic development and demographic transition is not automatic. A major difficulty in providing opportunities for spatial and occupational, especially agricultural to non-agricultural movement, is the rapid rate of natural increase in these countries. This natural increase, at a rate which is much higher than the rates that prevailed during the European transitions, is caused by the high fertility and the momentum for further population growth inherent in the huge population base. Opportunities for women to enter the labor force, an important variable in fertility reduction, is also restricted by the rapidly expanding labor force. Growing populations also hinder the provision of universal education, consequently limiting the impact of education on family size.

A significant lead as to why the socio-economic trends just discussed have not exercised the same influence in the developing societies as they did in some of the European societies is available in the recent research on the European transitions. Coale (1974: 62-63) cites historical research in Spain which indicates not socioeconomic, but regional or linguistic bases for marital fertility differences in the early 1900s. In other words, adjacent provinces with similar languages and history had similar levels of marital fertility, inspite of having different proportions of literacy and agricultural labor force.

Similar research using Latin American data by Beaver (1975) reveals a fairly close correlation between the openness of a culture to outside influences and the declines in fertility achieved. For example, Argentina and Uruguay with strong European backgrounds and openness to outside influences had the lowest fertility levels. The least amount of decline was evident in countries that were most resistant to external influences, such as, the Indian cultures of Bolivia and Paraguay. Beaver proposes that even if the necessary economic circumstances conducive to reductions in birth rates prevail in a society, cultural factors may still determine the timing and extent of the declines achieved. At the same time, as Murdoch (1980: 52) indicates, economic development, irrespective of the cultural setting, has played a significant role in the low fertility rates of groups such as the Chinese in Asia, the Indians, Goans, and

Pakistanis in Uganda, and the Indians and Malays in Malaysia.

These developments dispute the automatic adjustment of fertility to decreased mortality, industrialization, and improved standards of living suggested by the Transition theory. They also provide the possibility of identifying the precise circumstances in which fertility control will begin. Hence, Coale (1974: 65) delimits three broad conditions necessary for a significant decrease in marital fertility to occur: (1) fertility decisions, made consciously by weighing, either implicitly or explicitly, the benefits and demerits of having children, should be an acceptable and viable behavior pattern in a culture; (2) it should be socially and economically advantageous (even if only perceived) for couples to have small families; (3) birth control information and methods must be easily and widely available to the husband and wife who are sufficiently motivated and who jointly decide to utilize fertility regulation methods.

Coale's propositions shed further light on the differences between the third world countries and the transitions of countries, such as France and Sweden. In most of the developing countries, small families are perceived as disastrous, both economically and religiously. Further, deliberate fertility decisions are not an acceptable form of behavior among large sections of the populations, especially in the early stages of their childbearing history. The subor-



dinate role of women and the informal taboos surrounding discussions of sex, procreation, and family planning also hinder efficient and sustained use of fertility control methods.

Coale's statement of the three prerequisites is an important first step toward restating the demographic transition theory at the micro level. Demographic transition theory, in its traditional form and even after accounting for the variations in the details of the transition, focusses on fertility and mortality and their relationship with modernization at the aggregate level. To quote Schut-zer (1978: 269), "the aggregate focus of the transition framework --- does not permit the easy incorporation of the results of microlevel demographic research with a motivational focus." Emphasis on the motivation or desire for children will be a useful corrective to the notion of the automatic movement of societies through the stages postulated by the transition theory.

Schutzer (1978: 276-279) provides a restatement of the demographic transition theory using a microlevel fertility variable<sup>1</sup> --completed family size. He concentrates on completed family size as the focus of his revision for two reasons. It is in the context of the family that most fertility decisions are arrived at in conjunction with the eco-

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<sup>1</sup>A similar revision was provided by Tabarrah in 1971, although it was mainly a classification device. Schutzer, however, does not seem to be aware of the work.

conomic and social status of the family, and tastes, preferences, and other personal attitudes of the couple. Further, the completed family size provides the final picture of the aggregate decisions, choices, implementation of the decisions, and changes in the decisions, if any, regarding the number of children and the spacing that have been made over the entire childbearing history.

Three indices of completed family size are used in the revision. The first index is natural fertility which is "the size of completed family that would occur in the absence of any voluntary control of fertility" (Schutzer, 1978: 277). Desired fertility, the second index, is defined as "the completed family size that those making fertility decisions view as optimum at the time the decisions are being made" (1978: 277). The size of the desired family will be influenced by socioeconomic considerations, availability of time, and other extra-familial opportunities. Actual fertility is the third index and is the result of "a series of discrete decisions or non-decisions, as well as an adjustment for the actual and anticipated loss of children through premature mortality" (1978: 277). Natural and actual fertility are similar in that they are both responsive to variations in nutritional and health conditions; yet, actual fertility, unlike natural fertility involves the couples' attempt at adjusting to the environment.

The demographic transition of a nation involves a

movement from a stage in which the size of the actual family is determined by fecundity to a state of demographic development where the former is influenced by the size of the desired family. A nation could be demographically developed at either a high or low desired family size. Due to the high infant and child mortality rates and cultural restrictions (such as taboos regarding intercourse during breastfeeding) on childbearing, the natural family size is small in the early phases of demographic development. Populations in the early stages of development lack definitive notions of desired family size and generally the norm is to have as many as one can. Hence, the actual number of children couples have depends on the level of natural fertility. Fertility at this stage, according to Tabarraah (1971: 269) is a biological phenomenon.

In the process of improvements in the socioeconomic contexts of nations and the modernization of their traditional cultural patterns (such as, equality between the man and the woman), couples become aware of a family size that is desirable. With the development of this awareness, nations enter the second stage of development. At this stage, desired family size theoretically can either rise, remain stable, or decline. In reality, however, with modernization and its related developments, desired family size has in the long run tended to decline, even if there is an initial short term increase. In the unlikely event that desired family size either remained constant at a high level

(continuing the predevelopment notion of the more the better) or even rose consistently, the second stage would be characterized by an increase in the actual family size in an attempt to meet the high desires. The increase in actual fertility is made possible by the improvements in living conditions. Better nutrition and higher health standards improve fecundity by reducing the incidence of morbidity and mortality associated with childbearing. Populations enter the third stage when the high family size desires are actualized.

Although, according to Schutzer's theory, such a culmination of the transition where both desired and actual fertility remain high is a theoretical possibility, it is unlikely that high fertility will persist in the context of advanced modernization. Nor is high fertility desirable from the perspective of a nation's overall population growth and economic development. These developments, therefore, cannot accurately be viewed as the third or final stage in the transition. It would be more appropriate to state that societies characterized by such fertility patterns remain 'stuck' in the second stage.

If, on the other hand, desired family size declines in the second stage, it will fall below the increasing biological fertility levels at some point in this stage. At that phase, actual family size will be higher than the desired family size. Again, demographic development will be reached in the third stage when couples adopt various measures to

bring their actual family size in conformity with their lowered desired family size.

According to Schutzer (1978: 278), family planning programs providing birth control information and methods will be most successful in reducing actual family size only at the point where the actual family size of a group or a population is in excess of what is desired. Prior to this stage, no sizeable reductions in actual family size can be achieved. Nevertheless, he argues that family planning programs could be used earlier to influence family size desires by legitimizing the small family norm and to encourage the practice of family planning even if only for spacing and health reasons. Since desired family size is determined within the constraints of social, economic, and other psychological factors, fertility in the third stage is a socio-economic phenomenon. In the second stage it is partly socio-economic and partly biological (Tabarrah, 1971: 269).

Schutzer cautions that this model does not apply to individual couples in the sense that they do not move through the various stages delineated above. Rather, different populations, as a result of shifts in its members' fertility aspirations and behavior undergo changes in the patterns of their fertility. Thus, it is possible to identify the stage of demographic development that a population or a subgroup has reached, by analyzing their family size desires, actual family size, and the level of their modernization.

Most developing nations of today are in the second stage of their demographic development, with a declining desired family size pattern. Several trends that prevail in these developing countries have the potential of speeding up their demographic development so that their actual family size is brought in conformity with their declining desired family size. Teitelbaum (1975: 177) suggests some examples of these positive trends such as the moderately rapid pace of development, international aid in development, and the role of governments in the national family planning programs which can not only provide the methods of family limitation but can also legitimize the small family as an economically viable norm.

#### Role Of Modernization In the Demographic Transition Theory

Schutzer, in his attempt at modifying the transition theory, was mainly concerned with using micro fertility variables to postulate the process of demographic development. He does not analyze in any depth the factors--for example, modernization, development, and family planning--that bring about the changes in fertility. Both macro and micro fertility studies, conducted with the transition theory as either an explicit or implicit organizing framework, incorporate indicators of modernization as explanatory factors. Conceptualization of the indices of modernization

has closely followed the developments in modernization theory. Studies in the classical structural-functional model of modernization use a macro-sociological approach to explain how modernization involves changes in societal institutions, in the interrelationships among institutions, and in the cultural values of the society, and the structural consequences of these changes. The transition theory, in its original formulation used macro social and structural changes--industrialization, urbanization, changes in the occupational and income structure, changes in the cultural norms, changes in the structure of the family--in accounting for fertility and mortality declines.

While the structural models refer to modernization at the societal level, the theorists in the social psychological model of modernization deal with those sets of attitudes, values, and behavior of individuals that are prerequisites for their participation in modern society or are even acquired by such participation. When applied to transition theory social psychological modernity was used as an intervening variable (Miller and Inkeles, 1974) to spell out the mechanisms through which societal modernization influenced fertility behavior. Miller and Inkeles (1974: 171) define social psychological modernity to include elements such as openness to new experience, belief in one's ability to control one's fate to some extent, emphasis on planning and punctuality, independence from traditional parental authority, and the acceptance of such ideas as those of mod-

ern science, equality of women, and family size limitation. These characteristics developed by individuals in the process of modernization motivate them to adopt birth control and to limit their family size.

These models of modernization and the transition theory have been criticized on several grounds (Tipps, 1973). One major criticism is that classical theories are ethnocentric. They assumed that all societies would follow a unilinear path and converge toward the model of the modern capitalist (Western) society. As discussed earlier, critics of both the modernization and transition theory point out the considerable diversity in the timing and pattern of changes in the development of the developed societies themselves. In the case of modernization, for example, Goode (1966) has discounted the obvious link between modernization and the nuclear family system. Industrial societies themselves reveal a wide variety of family systems and in some societies the nuclear family system existed even before industrialization. Examples also exist of non-Western societies that have modernized and completed their demographic transitions through paths different from those of the classical transitions. In Japan, it was the commitment to the Emperor and to the family, a collectivistic orientation, and lack of social mobility--factors that hampered economic change in the West--that encouraged the modernization of the Meiji period (Hagen, 1958).

Criticisms have also been brought against the classi-



cal theorists' conception of the relation between tradition and modernity. The classical theorists viewed tradition and modernity as mutually exclusive. Therefore, when modernization took place old traditions were weakened and replaced by the modern. Critics, on the other hand, point to the continuity between the traditional and modern eras. Gusfield (1967) discusses how the caste and joint family, considered impediments to economic growth, have in fact proved to be mobilizing elements in both traditional and modern India. Similarly, Freedman (1979: 63-79) cites the case of Taiwan where large scale adoption of contraceptives and the rapid decline in fertility were achieved even when the family maintained many of its traditional features and attitudes. The extended family structure where older parents live with their married sons, where children provide financial support to their parents in old age, and where intergenerational kinship ties predominate are some examples of these traditional elements.

A third difficulty with the classical model centers on the inclusiveness of the concept of modernization rendering it 'vague and confused' (Nettle and Robertson, 1966: 281). The breadth of the concept precludes specifying the limits of its application; consequently, it eludes a precise definition. Goldberg (1975: 91) addresses the same issue in discussing modernization in relation to fertility. He argues for selecting only those variables that have a direct impact on fertility instead of using the large set of val-

ues, attitudes, and behaviors that are attributed to modern men.

These criticisms necessitated and have resulted in a reformulation of the classical model of modernization and its relation to the demographic transitions. In the revised model, there is a greater emphasis on the role that premodern conditions play in the future developments of these societies and in their adaptations to borrowed elements. The revisionist school does not subscribe to the automatic spread of the modernization process, and consequently the automatic completion of the demographic transition. They recognize the variations, the stresses and the strains, and even reversals that may occur in the process of modernization. The differences in starting points and the different paths each society takes results in a constant interplay between the traditional and modern forces, creating unique features in the modernized and modernizing societies. It, therefore, becomes necessary to examine the divergences in the modernization and the demographic transitions in different countries. Distinctions have to be made between the developed and developing countries. Even among the developed countries, there is the need to differentiate between the capitalist and socialist countries (Desai, 1976: 99-100) and to work out the specifics of each national modernization and demographic transition. No single model--capitalist or socialist--can be replicated because of the different nature of individual societies.

Despite these variations, modern societies do possess some common features. O'Connel (1976: 17-24) succinctly summarizes them in three categories: (1) an analytical-causal and inventive outlook which refers to the development of an inquiring mind and inventive attitude, both at the individual and societal level; this outlook results in (2) the rapid accumulation of tools and techniques; (3) and the flexibility of will and the capacity of both the society and the individual to accept and adopt to new changes without breaking down. In demographic terms, these modernized societies are characterized by low mortality and fertility. With regard to fertility, the three broad elements (specified by Coale and discussed earlier) concerning the small family norm, the nature of fertility decisions, and the availability of birth control technology prevail in the modernized context.

Nevertheless, an overarching model, either in the theory of modernization or demographic transition, does not seem empirically feasible. It appears feasible to develop regional models, applicable to areas with similar cultural histories or backgrounds. The present study is to be viewed as an attempt to specify a system of factors that will be most relevant to the achievement of fertility declines in Kerala and ultimately in India and may consequently lead to the completion of the Indian demographic transition.

### Model Of The Modernization-Demographic Transition Tradition

In attempting to provide a causal explanation of the demographic trends, transition theory, being a theory of social change, attempts to link micro level changes implicitly or explicitly with macro level changes. Using a framework provided by Miller and Inkeles (1974), an inclusive model could be stated as follows: societal modernization as indicated by changes in social institutions from the traditional to modern forms --> individual participation in these modern institutions --> emergence of modern attitudes and aspirations which include small family size norms --> favorable attitudes toward limiting families --> individuals' use of birth limitation --> ability to actualize small family norms --> societal modernization. This model, thus, links different levels of variables--macro social, social psychological, and psychological--in explaining how fertility declines could be achieved.

Many studies, particularly those undertaken in the tradition of the classical Demographic Transition theory, remain purely at the macro level of analysis. They use macro structural indicators of the social, cultural, economic, ecological, and demographic situation to explain differences and changes in fertility rates. However, these variables, such as urbanization, industrialization, changes in value orientations, and educational improvements, are not viewed as influencing fertility per se; they are used as indicators which implicitly reflect changes occurring in the

life patterns of individuals or their households and which collectively influence fertility in a given direction. Most of these studies merely indicate the extent of the relationship between social and economic modernization and fertility rates. They do not specify the causal nature of the relationship. In order to specify how social and economic development influences fertility rates, it is necessary to incorporate micro level variables in the modernization-fertility relationship. Development does not operate in a vacuum; it induces changes in fertility through its effect on individuals.

At the other extreme are found studies that operate only at the individual level in the case of both the causal and fertility variables. The micro economic theory of fertility uses principles of consumer behavior to explain variations in individual fertility and behavior. The micro-economic independent variables, such as changes in income, prices, and tastes, are viewed as manifestations of macro level social and economic development.

In between the above two extremes are those studies that attempt to link macrostructural indicators of urbanization, industrialization, and modernization with micro-fertility indices through intervening micro variables. The model presented at the beginning of this section specifies several kinds of intervening variables. Rosen and Simmons (1971: 49-51) discuss the rationale underlying this model. Urbanization and industrialization, and their objective man-

ifestations--the cost of raising a family in circumstances where almost everything has to be bought in the market, the declining economic utility of children, the cost of their education, rising material aspirations--impose strains on the economic resources at the disposal of the family and make large families expensive. But, these influences on family size operate through values, attitudes, and capabilities that individuals acquire in these modern circumstances, enabling them to respond more effectively to the challenges and strains of urban industrial life. As Rosen and Simmons argue (1971: 50), "an analysis of fertility decline, therefore, should link social structural factors which influence fertility with data about personal orientations and modes of decision making which help men and women respond to social circumstances."

Much research has been done in establishing many of the relationships that can be delineated among the variables considered above. But, a majority of the research studies is restricted in the range of variables considered simultaneously and as a coherent system. Studies emphasizing the psychological and social psychological aspects of modernization are limited in the range of variations in the macro social contexts in which the relationships are examined. Many studies examining the influence of social psychological factors on family size are restricted to the urban areas. Some examples are the Indianapolis study by Kiser and Whelpton (1958); Groat and Neal's study in Toledo, Ohio (1967);

the study of fertility and family planning in Taiwan by Freedman, Takeshita, and Sun (1964); Rainwater's study of a sample in Chicago, Cincinnati, and Oklahoma city (1965); Stoke's study on family structure and socioeconomic variations as related to fertility in Lexington, Kentucky (1973); Michel's study of the French urban family (1967); Mitchell's study of the family in urban Hong Kong (1972); and Khalifa's study (1973) in Cairo, Egypt. At the same time, studies are also limited to rural areas alone (Crader and Belcher, 1975; George, 1973).

Unlike most of the aforementioned studies which include a sufficient range in the variations in social and economic status, others (Miller and Inkeles, 1974) concentrate on certain educational and occupational strata. There is also another set of research in which social and psychological factors are omitted. Such studies use only demographic and socioeconomic variables to explain differential fertility (Loebner and Driver, 1973; Kim, Rider, Harper, and Yang, 1974). These lacunae have rendered difficult the task of specifying the mediating mechanisms between the social structural and social psychological levels of analysis.

Two additional patterns can also be delineated in fertility studies (Mitchell, 1972). One group consists of research on the causes and correlates of differentials in family size desires and actual fertility. The second trend pertains to studies attempting to identify the social and psychological factors that influence the knowledge and atti-

tudes regarding family planning technology and the motivation to adopt it. Many of the studies in the latter tradition, especially those pertaining to India, are limited to the adoption of specific methods of contraception, mainly IUD and sterilization. The KAP surveys, dealing with birth control knowledge, attitudes, and practices, conducted in many countries are another example of the primary emphasis on family planning. Even research dealing with both kinds of variables--family size norms/actual family size and attitude to/practice of family planning--tend to conceptualize them separately as two ways of operationalizing the same variable, fertility. Consequently, they examine the relationships of independent variables first to family size norms and behavior and then to the family planning variable or vice versa.

It is important to examine the interrelationships between these two aspects of fertility behavior. Research has documented that when a larger number of children are desired, the need to accept family planning and to practice it diligently is less imperative (Sagi, Potter, and Westoff, 1962). In accordance with Schutzer's (1978) modification of the transition theory (see also Davis, 1975: 33), the emphasis on the provision of family planning itself, without the necessary changes in family size norms, is not sufficient to achieve substantial declines in actual fertility. At the same time, the role of favorable attitudes to and practice of family planning in reducing actual fertility



also needs to be analyzed. Such an analysis would provide a test of the efficacy of family planning programs in realizing its ultimate goal of reducing the number of children each couple has. Unfortunately, much of the research on this relationship between family planning and fertility has been limited to the aggregate level.<sup>2</sup>

Most of the other fertility research deals with limited subsets of relationships within the broad model set forth at the beginning of this section. Some examples are studies dealing with the impact of education on family size (Janowitz, 1976), female labor force participation and fertility (Havens and Gibbs, 1975), the role of husband-wife communication and conjugal role relationships in acceptance of family planning in the rural-urban context (Mukherjee, 1975; Olson-Prather, 1976), the age at marriage-fertility relationship in the context of socioeconomic differentials (Bumpass, 1969), and the influence of infant mortality on the size of the family (Balakrishnan, 1978; Devi, 1978).

There are a few studies that in different ways incorporate macro structural factors, data on personal orientations, and decision making patterns in order to explain fertility differentials (including all the relevant fertility variables). One such early study was the Puerto Rican study by Hill, Stycos, and Bach (1959). They began with a wide

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<sup>2</sup>The most important examples are Mauldin and Berelson's research (1978) and Tsui and Bogue's study (1978) discussed in Chapter I.

range of variables representing different levels of analysis--macro structural or background variables, value orientations, specific family size attitudes, family action possibilities, and knowledge, and attitudes toward means of family limitation--and related them to different measures of fertility. But in the course of the analysis, several of the independent variables which were empirically established at the beginning as being related to fertility were omitted through the use of the factor analytic model. Further use of the factoring technique brought out just husband-wife communication as a significant variable, while the social status factors were related to fertility only indirectly through communication. A further disappointment was that the range of variations in social status was limited to the lower classes. Thus, as Goldberg (1975: 87) remarked, "The empirical potential of the study was destroyed. And probably more important, some of the better hypothesis were pushed to the sidelines."

Goldberg's study of Ankara (Turkey) and Mexico City (1975) is another attempt to use background variables and a set of intervening variables as they relate to expected number of children and practice of family planning considered separately. The background variables he used were wife's place of birth, wife's education, and husband's income; the intervening mechanisms were focussed on women's activities, her perceptions, and attitudes (which together he calls the Truncated Modernism Index, TMI), and other exposure to mod-

ernization variables. He found that TMI and wife's education, which has only an indirect effect through TMI, dominate the relation to expected number of children, while TMI and possession of modern objects dominate the relationship to use of family planning. While Goldberg is obviously interested in providing a broad pattern of the relationships between variables that are causally related to fertility declines in two developing countries, he does not pay too much attention to the relationship between factors closer to the ultimate outcome desired--reduced family size. More specifically, he treats expected family size<sup>3</sup> and use of family planning data separately as two dependent variables. The significance of analyzing the relationship between these two variables, especially in the context of the effectiveness of the family planning programs undertaken by most developing countries, can hardly be overemphasized.

Finally, Rosen and Simmons' study (1971) on Brazil also sets forth a model including structural, social psychological, and psychological variables as they relate to family size. They acknowledge that their framework specifies only some of the intervening links between industrialization and fertility. Most notably missing are data related to the means of family limitation. Brazil still firmly believes in larger populations as economic and political assets and did

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<sup>3</sup>Expected family size is used as a proxy for actual family size.

not launch a formal family planning program until 1974 (Tak, Haub, and Murphy, 1979: 37) while the study was conducted during 1963-1965.

### Theoretical Significance Of The Study

On the basis of the preceding discussion and the review of the available literature, the theoretical significance of this study can be identified clearly. There have been only a few studies that simultaneously incorporate both macro social and micro level variables in explaining fertility. Although these studies have been done in developing countries, no attempt has been made to set forth and study a coherent system of interrelated factors that may influence family size in India, the largest of such countries. The relevance of this approach for India lies in the problems that the rapid population growth poses for her social and economic development, which necessitates analyzing the problem from as many different angles as possible.

Secondly, India is in the state of transition from a traditional to a modern society. This transition period provides an advantageous set-up for studying the extent to which the structural changes in India correspond to changes in attitudes, beliefs, and cultural values, and how these changes affect related fertility behavior. Given the unevenness of modernization across the Indian society, wide variations are available to study the effects of India's transition to a modern society on fertility changes at the

normative and behavioral levels. Besides, some of the unique features of the Indian social structure--such as the caste system, the joint family, and religious diversity--have survived the modernizing trends and continue to operate in modified forms in modern India. These institutions play an important role in the life of an Indian and need to be incorporated in the study of Indian fertility. The uniqueness of both the traditional and modern social structures in India warrant the special consideration of the Indian demographic transition and the identification of the factors that will help bring about reductions in fertility.

Further, the studies that simultaneously incorporate variables operating on different levels of analysis have been done among predominantly Catholic populations, such as in Puerto Rico, Brazil, and Mexico city, with Goldberg's Ankara, which has a majority Muslim population, as the major exception. Religion exerts an overriding influence on values, attitudes, and behavior, in general and particularly with regard to procreation and its control. This is particularly true of traditional and modernizing societies. This study with its concentration on Hindus and non-Catholic Christians of Kerala, India, would provide a cross-religious reference.

Finally, as was discussed in the previous chapter, Kerala, the state in which the study is conducted presents an anomalous situation with regard to the problem that is being investigated here. Apart from the social and economic

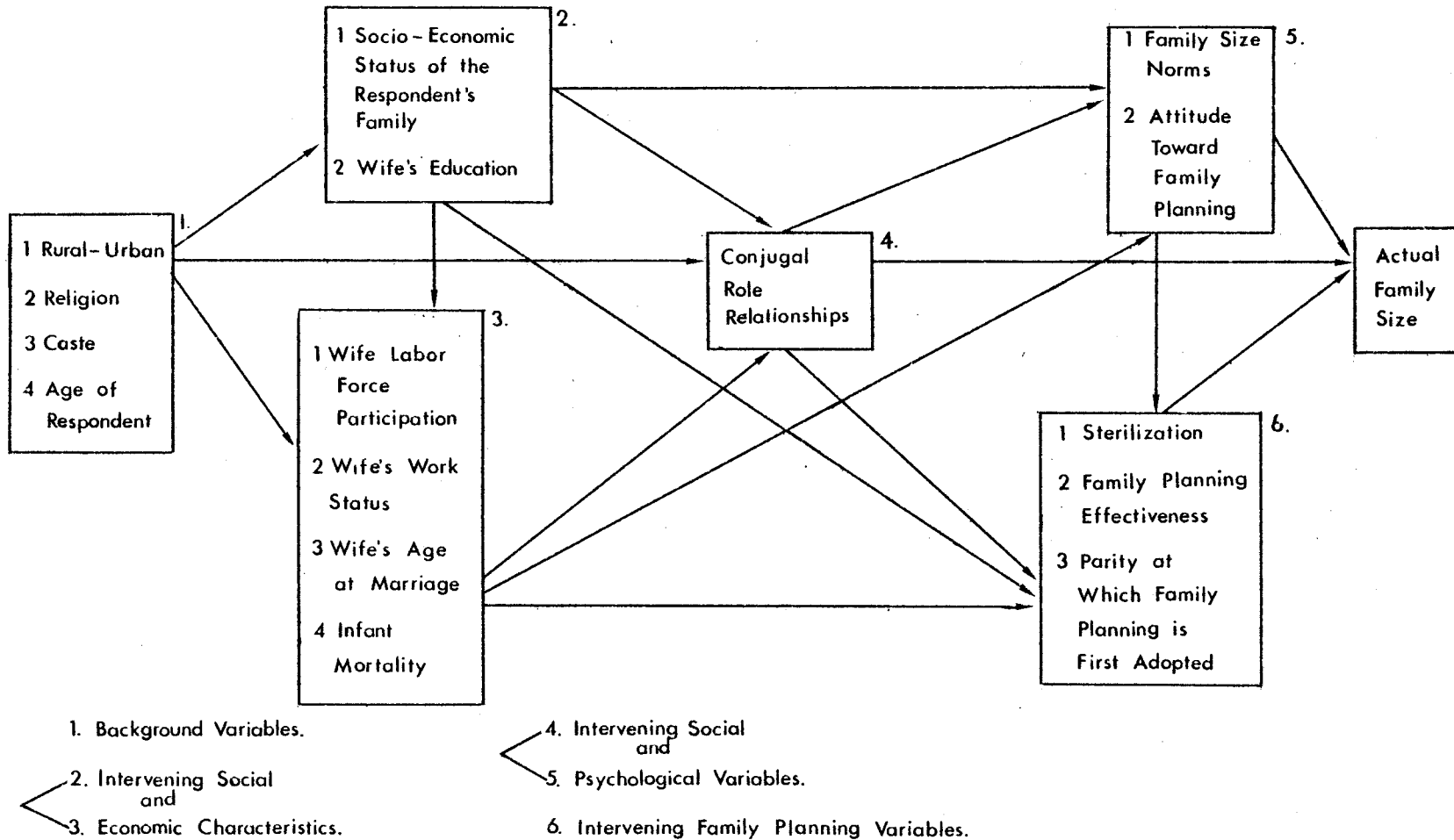
characteristics detailed in Chapter I, Kerala, also has the highest proportion of female literates and mean age at effective marriage among all the states in India. It was also the first state to push for intensive family planning programs through the organization of camps and other services. Its people possess a high level of political consciousness and it was the first state to vote a communist government into power democratically. Kerala is, therefore, modernized in certain respects although it remains traditional (for example, the poor living standards) in others. Despite the relative economic poverty, Kerala has succeeded in reducing its rate of population growth and birth rates to some extent. It, thus, provides an opportunity for identifying the factors that have contributed to the initiation of the downward trend in fertility. At the same time, Kerala's experience also demonstrates that concomittant improvements in at least most of the relevant societal aspects (such as living standards) are necessary to speed up further the fertility decline that has already begun.

### CHAPTER III

#### A MODEL FOR THE ANALYSIS OF FERTILITY DIFFERENTIALS

A brief review of the Demographic Transition theory and the existing literature in that tradition presented in Chapter II suggests the need for conceptualizing both macro and micro variables as a relevant system in the analysis of the determinants of fertility. In accordance with this argument, several sets of variables will be used in this study as causes and correlates of fertility decline. They represent the two phenomena--modernization and family planning--which have been the focus of competing schools of thought regarding variations in fertility. Figure 1 presents the model and the causal relationships among the variables to be investigated in this study.

ILLUSTRATION 1  
 DIAGRAMMATIC REPRESENTATION OF THE MODEL TO BE USED IN THE STUDY





### Background Or Structural Variables

The background variables are essentially group variables reflecting the influence of group norms on individual behavior. Anker (1973: 64) for example, argues that social groups, such as caste, village, and tribes, are highly cohesive in developing countries. These groups regulate the attitudes and behavior patterns of their members, including fertility. Hence, it can be hypothesized that membership in a societal group will influence family size norms and behavior of couples over and above their individual characteristics.

### Rural/Urban Area Of Residence

Rural or urban area of residence is the first structural variable. Rural and urban areas represent different levels of modernization and industrialization. At the same time, they also provide different economic, social, cultural, and demographic opportunities to their members. Early research in the classical demographic transition framework conceived of urbanization and industrialization as direct influences on fertility. In the rural areas, where children were productive at an early age, they constituted an important source of income to the family. Urban children, in contrast, represented higher costs than benefits to their parents. It was, therefore, assumed that urban couples would have fewer children than rural couples.

The evidence on the effects of rural and urban residence on fertility is mixed. Birdsall (1980: 31-32) presents data from the recent World Fertility Survey for Bangladesh and Sri Lanka which indicate very little difference in rural and urban family sizes. Couples with higher levels of education (more than primary school in Bangladesh and grades 10-11 in Sri Lanka) are the only exception. On the other hand, in many Latin American countries (Murdoch, 1980: 46-48) and Thailand (Birdsall, 1980: 31) urban fertility has been and is still lower than rural fertility. These differences are due mainly to the higher standards of living in the cities. Sri Lanka, Taiwan, and Indonesia, where differences in rural and urban fertility are minimal are contrasting examples of countries in which economic welfare has been extended to the rural areas also. Residence in the city or village in itself may, therefore, not be an important differentiating factor in fertility. It is the differences between the rural and urban areas in the access to modern institutions (manifested in higher education, higher income, lower infant mortality, higher status of women, and openness to new ideas among urban respondents) and the participation in these institutions that seem relevant.

Kerala, the focus of this study, has succeeded in reducing the inequalities, specifically in the access to

health care and education, among its cities and villages. While Kerala has achieved significant reductions in its aggregate rural fertility, it is not clear whether differences in urban and rural fertility, especially at the individual level, have been eliminated. Further, urban residence is still a precondition for easier access to higher education and other modern amenities and values. Hence, this study will consider rural and urban area of residence as a structural variable.

### Religion

Religion, the second background variable, is a pervading traditional influence in the life of every Indian. Hinduism, in particular, attaches social and religious significance to children. For example, a barren woman, and even a woman without sons, is socially ostracized, although secularization processes are gradually eroding these traditional patterns.

Research on the effect of religion on fertility (as presented in Murdoch, 1980: 49-50) reveal only a slight impact of religious background, such as Catholicism, Christianity, and Islam, on fertility. When differences exist, as in the case of non-Catholic Christians in Lebanon, whose family size is lower than that of Muslims, they are limited to the poorer classes.

This study concentrates on the Hindus in comparison to

the Protestants in Kerala. The Protestant ethic of these non-Catholic Christians is in direct contrast to the sense of resignation central to traditional Hinduism. These differences and their effects on fertility may be reduced within the secular atmosphere of the cities. In the rural areas, the attitude of resignation to one's destiny may be reflected in higher fertility among the Hindu women in comparison to the Christians.

### Caste Status

Closely allied with religion is the caste status of individuals, which has both religious and social significance. In traditional India, the caste system exercises a very conservative influence. Membership in a caste was, (and still is) determined solely by birth; consequently, access to the educational, occupational, and other social opportunities provided by a caste group was limited to its members. There were, thus, no opportunities for individual mobility. Given the low economic and social status of the lower castes, their higher fertility (Loebner and Driver, 1973 using 1958 data and Anker's study in eleven villages of Gujerat state, 1973) was predictable. However, modernization and the preferential policies in the field of education and jobs, aimed at helping the lower castes may have had some modernizing consequences for the fertility behavior of the lower castes, especially in the cities. Hence, the

caste status of respondents is the third structural variable in the model.

### Age Of The Respondent

The last background variable, age of the respondent, represents a demographic grouping, with important fertility relevant implications. Age of the respondent, which aids in evaluating cohort differences in fertility is important for two reasons. The older cohorts tend to be more conservative than the younger cohorts who have had a better chance of participating in the modernizing processes that began in the early 1950s, after India gained Independence. They also differ in their exposure to the organized family planning program, the vigorous implementation of which began in the late sixties and early seventies. The older respondents would have been exposed to the program later in their child-bearing than the younger women, necessitating control for the differential exposure. It also provides a time dimension to the problem of the impact of modernization and family planning on fertility. In other words, smaller families of the younger women will suggest shifts towards lower fertility over time.

### Intervening Social And Economic Characteristics

Each set of intervening variables in the model deals with specific opportunities provided by the rural and urban areas which may have an impact on fertility. Social and economic characteristics of the respondent's family and of the respondent herself comprise the first set of intervening variables.

### Family's Socio-Economic Status

The family is one of the most cohesive social groups in a developing country, such as India. It is the source of identity, social, economic, and personal, for the individual, and particularly for the woman. Hence, the status of the family needs to be incorporated in the analysis of fertility.

How does the status of the family affect fertility? Theoretically, it can be argued that the influence of industrialization, urbanization, secularization, and increased social mobility will be mediated partly through the shifts toward opportunities for the kind of education, occupation, and income that are typical of modernizing societies. More specifically, improvements in the educational and occupational status of the family reduce the parents' dependence on children as additional sources of income or even as security in old age (Tak, Haub, and Murphy, 1979: 31-32; Birdsall, 1980: 32-33; Murdoch, 1980: 39-41). Higher

socio-economic status of the family, by alleviating poverty and insecurity, also renders future planning and a sense of control over one's life (including family size) a realistic possibility. For individual couples, improvements in socio-economic status open up opportunities for other lifestyles and material goods and services that may compete with children. Families with higher status are also aware of the advantages of higher education and occupation for their own children, creating incentives to spend more time and money on a few children. Thus, improvements in the social and economic status of the families affect changes in the tastes, outlook, preferences, consumption styles, and receptivity to new ideas. These changes, in turn, will create the motivation for small families. They will also aid in the realization of these changed desires because information on methods of family limitation is generally more accessible to the educated and the literate.

Three indices of socioeconomic status are used in the preliminary analysis of this study: husband's education, his occupation, and extent of modern items owned. Husband's education, the social status variable, is measured in completed years of education. Occupational status is operationalized as a continuum ranging from the unemployed to the professionals (see Table 12 in Chapter 5). The modern item index, the economic component of socio-economic status, is

defined as the number of modern items owned by each household. These items range from airconditioners, washing machines, telephones, and cars to refrigerators, radios, clocks, and steel utensils, among others. The assumption underlying the operationalization of this variable is that those who own the more expensive and modern items, such as airconditioning and telephone, would also own the less expensive items.

Previous research on the influence of the family's socio-economic status on fertility suggests a largely indirect relationship between the two, irrespective of whether husband's education, his occupation or modern items is used as an index of status (Rosen and Simmons, 1971; Loebner and Driver, 1973; Goldberg, 1975; Graff, 1979). Some of the intervening factors in the socio-economic status-fertility relationship have been age at marriage, conjugal role relationships, and preferred family size.

#### Respondent's Socio-Economic Status

The social and economic characteristics of the respondent form the second set of intervening variables. Women are more directly responsible for bearing and rearing children; consequently, the costs of children, in terms of time and lost opportunities are greater for women. Hence, the woman's status can be expected to have a separate effect on fertility. Three indices are used to measure the respon-



dent's status. The respondent's education, measured as the number of completed years of education, is the first index of her status. Her labor force participation status, i.e., whether she works (coded as 1) or not (coded as zero) is used as a second measure. Further, it can be argued that not just her employment, but the nature, and therefore, the status of her employment will also be significant in studying fertility variations. Respondents' occupational status is, thus, the third index of her socio-economic status.

Women's education is generally accepted as one of the strongest and most persistent modernizing influences on fertility. Murdoch (1980: 42) presents data around the early 1960s for Puerto Rico, Chile, India, Thailand, Taiwan, and Ghana to demonstrate the negative relationship between female education and family size. Invariably, the family size of higher educated women is closer to replacement fertility while that of lower educated women is more than double the replacement level. This inverse relationship has persisted into the 1970s as the World Fertility survey data indicate (Birdsall, 1980: 31). Similar to men, higher education induces changes in the values and norms of women, as women critically evaluate the traditional customs and behavior of their parents. Even more important for the women is the relatively independent social status and the opportunities for advancement outside the home that higher education

confers on them. Given that women have a more direct involvement in childcare, the educated woman stands to lose more opportunities than her less educated counterpart and even men with the same qualifications. For these reasons, as Birdsall (1980: 29) concludes, women's education has a stronger modernizing influence on family size than men's education.

Another major source of higher social status for the woman, and which consequently would have a suppressive effect on fertility, is her labor force participation. Giving up her job or taking time off to raise children is an indirect cost that the working woman incurs and this indirect cost will adversely affect her family size decisions. Her employment outside her home also opens up other non-family oriented means of personal satisfaction, such as financial gains, companionship, recreation, and other activities outside the family.

There is, however, a limitation on the women's employment-fertility relationship. For example, data from Turkey (Stycos and Weller, 1967) suggest that female employment reduces family size only when the working role of the woman is incompatible with her role as wife and mother. In other words, women's employment in agricultural or cottage industries, particularly in the rural areas of developing countries, will not have a strong effect in lowering fertility

because her work would permit her to take care of her children simultaneously. Thus, it is not merely her labor force participation, but her employment status too, that is the major determinant of family size (see also Havens and Gibbs, 1975).

Generally, women in higher status occupations--white collar and professional jobs--also tend to have higher education. It is, therefore, possible that part of the modernizing effect of female employment on fertility is due to the influence of education. Murdoch (1980: 42-43), however, cites Puerto Rican data to demonstrate that women's employment has a negative influence on family size, even after the effect of their education has been accounted for. Thus, as Rosen and Simmons (1971: 51) suggest, the nature of the work a woman is engaged in will have a suppressing impact on fertility by altering her perception of her role in the society and in her family.

Intervening Demographic Variables: Age At Marriage and  
Infant Mortality

Age At Marriage

Age at which women marry is another intervening mechanism through which education and employment of women influence fertility. Higher education leads to postponement of

marriage, because marriages are generally delayed until women complete their education. Women with higher education also tend to seek employment, which again delays their marriage. Age at marriage, in turn, can influence fertility in two ways. The socio-economic effect of age at marriage is mediated by the antecedent factors of wife's education and her occupation. Women who marry later tend to have higher education and tend to be employed in higher status occupations.<sup>1</sup> This higher status provides her with non-familial oriented opportunities and interests, which exercise a negative influence on fertility.

Age at marriage also has a quantitative influence on fertility, particularly when a society experiences very little extramarital fertility, as is the case in India. Delayed marriage shortens the reproductive life of women within marriage and reduces their exposure to the risk of pregnancies, thereby leading to fewer births. At the societal level, rising age at marriage slows down the rate of

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<sup>1</sup>The variable occupational status refers to the occupation at the time of the interview. Yet, it can be hypothesized to affect causally age at marriage in Kerala. Generally, women tend to get employed, if they ever do, before they get married for two reasons. Employment enhances their chances of finding a good husband, particularly in terms of his socioeconomic status. Second, given the extremely tight employment situation, if a woman does not seek and get a job immediately after her education, her chances of finding employment later would be almost nonexistent. Hence, it can be assumed that the vast majority of these women who have jobs had them before they got married.

population growth by increasing the number of single women and lengthening the interval between generations (Birdsall, 1980: 33).

Evidence on the age at marriage-fertility relationship is mixed. Pathak (1980: 412-414), after reviewing several studies undertaken in different regions of India between 1961 and 1974, found women who married between the ages of 15 and 19 to have had on the average one child more than those marrying after 19 years of age. Yet, Birdsall (1980: 33) presents data indicating that age at marriage did not explain any significant additional variation in the fertility rates of countries, once life expectancy and adult literacy were introduced. Hence, according to Birdsall, delayed marriage in itself cannot cause lower fertility, which in effect upholds the socio-economic influence of age at marriage.

Studies, such as the one done by Kim, Rider, Harper, and Young (1974) in Korea, in contrast, consider age at marriage to be a strong predictor of family size, even after the effects of socio-economic variables, such as education, rural-urban residence, economic status, and exposure to mass media, have been controlled. Such research lends support for the quantitative effect of age at marriage on fertility.

At the same time, another study conducted in India in 1958 (Loebner and Driver, 1973) demonstrated a weak positive

relationship between age at marriage and family size, when the duration of marriage, number of years husband and wife lived together, and women's age were controlled. According to Loebner and Driver (1973: 340), the positive relationship was an indication of the prevalence of adolescent sterility in women who married early. They also suggested that women who married late probably tend to "catch up" for lost years by having frequent births.

It is possible to make some sense of these contradictory results. As the authors of the Mysore Population study (U.N., 1961) indicated, a threshold level of age at marriage exists which can aid in separating the positive and negative effects of age at marriage. In the case of women who marry very early, fertility in the early years of their marriage will be low because of the lag between the marriage and its consummation and subfecundity following menarche. In such a society (which probably was the situation at the time Loebner and Driver's sample was entering marriage), reducing the number of very early marriages is likely to result in an increase in fertility. Moreover, since delaying marriage tends to affect the health of the woman favorably, it may again increase fertility in later years. In contrast, it is when marriages are delayed beyond a threshold level that the negative effect of a briefer reproductive span on fertility will become evident. Research attempting to calculate the

family size reductions achieved by raising the age at marriage in India generally use 18-20 years as an average threshold in drawing comparisons (Pathak, 1980).<sup>2</sup> In the Korean sample (Kim, et. al, 1974), in which the quantitative influence was established, the mean age at marriage for women around 1970 was 25 to 26 years. The mean age at effective marriage for women in Kerala was 20.9 around 1971, the highest among all the states in India. Hence, both the socio-economic and quantitative effects of age at marriage on family size can be expected to prevail in this study.

### Infant Mortality

Each of the aspects of modernization described thus far contribute to the promotion of responsible parenthood and to the protection of the health of the mother and the child. The extent of infant mortality, an important indicator of the health of children, is therefore an index of modernization. It also is a correlate of fertility because in the long run, declines in infant mortality are consistently associated with reduced fertility (Mauldin and Berelson, 1978; Oeschli and Kirk, 1975; Balakrishnan, 1978; Devi, 1978). For example, Mauldin and Berelson found a strong correlation between the level of child mortality in 1970 and

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<sup>2</sup>The minimum legal age at marriage for women in India was 15 since 1955 and it was raised to 18 in 1976.

the declines in birth rates between 1965 and 1975. In other words, countries that had lower levels of infant mortality had experienced greater fertility declines.

High rates of infant mortality is generally hypothesized to have two types of effects--replacement and insurance effects--on fertility (Balakrishnan, 1978). Families which suffer child mortality may attempt to replace their losses. At the same time, personal experiences or even perception of the extent of infant mortality in their community may lead couples to have larger numbers of children as an insurance against future losses.

On the other hand, a reduction in infant mortality can lead to a decline in fertility in two ways (Murdoch, 1980: 44-45). Breast-feeding the surviving infants is a common practice in developing countries. The cultural and biological constraints against conception associated with breast-feeding reduces the chances of further pregnancies (Taylor, Newman, and Kelley, 1976). Lower infant mortality can also have motivational effects on fertility. When the chances of infant mortality are reduced, the motivation to have 'insurance births' will also be reduced.

The impact of modernization and the reductions in infant mortality in reducing the number of births becomes evident only in the long run, although the time lag is not too long. Beaver (1975) used data over a twenty year period



for selected Latin American and Caribbean countries to demonstrate how infant mortality was strongly associated with fertility a decade later. Other studies (Murdoch, 1980: 44-45) have also found the lag between the decline of childhood mortality and the initiation of fertility decline to be an average of ten years.

In the meantime, the short run effects of reductions in infant mortality, by increasing the number of surviving children, would be to increase the size of the family (Birdsall, 1980; Murdoch, 1980). Conversely, since couples generally do not replace all the child deaths, higher infant mortality could result in smaller families. This short run effect, however, soon becomes supplanted by the modernizing effects of reduced infant mortality. Modernization and its concomittants--higher education and higher social and economic status of women--will not only enable couples to have the number of children they desire, but will also reduce the size of the family desired.

#### Intervening Social Psychological Characteristics: Conjugal Role Relationships

Having analyzed the role of social, economic, and demographic modernization on fertility, the next important relationship to be specified is the effect of these vari-

ables on the relationship between the husband and the wife, the two individuals directly connected with childbearing. Several studies have used conjugal role relationships in explaining fertility differentials (Hill, Stycos, and Bach, 1959; Rosen and Simmons, 1971; Mukherjee, 1975). Earlier, the argument was made that the woman who participates in the opportunities (education, occupation) provided in urban-industrial areas has a strong interest in limiting her family size. Under these conditions, it is the woman who bears the major responsibility for childcare and who may feel the financial strain more keenly. Hence, a large family will conflict with her role obligations outside the home, leading her to desire a smaller family. The lower family size desires of the wife can be actualized only in a family context in which she has a voice in decision making and where possibilities for communication and discussion exist between the couple. Further, the wife's role in decision making, and particularly joint decision making, reflects a modernizing shift from an attitude of resignation by the wife to her sense of control over events in her life, which also includes the number of children born to a couple.

Another aspect of the husband-wife role relationships that has a bearing on family size is the flexibility or fixity of the husband and wife's roles in the family. The traditional pattern of strict division of labor, where the hus-

band performs the male jobs of bread earning and decision making while the wife performs the household tasks fit well in the traditional society. But, in a modernizing context, with the women taking up additional responsibilities and activities outside the home, the trend would be toward joint participation in interchangeable functions and roles.<sup>3</sup> Such a modern set-up would provide additional incentives to the couple to limit their family size.

Conjugal role relationships is operationalized as the extent of jointness in relationship so that a higher score indicates greater jointness in relationships. Seven individual aspects are included in the role relationship index--decision making, extent of sharing in household activities, participation in dealing with outsiders, participation in religious activities, extent of disagreement on various issues, outcome of disagreements, and pattern of solving (See Appendix A for a detailed description of the seven items.) These seven items are aggregated to form the composite role relationship index.

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<sup>3</sup>The concept of conjugal role relationships was first developed by Bott (1971).

### Intervening Family Size and Family Planning Variables

Modernization and its indirect effect on fertility has been the focus of the model described thus far. In specifying further the nature of the effect of modernization on family size, indicators of family size and family planning which directly impinge on actual fertility need to be considered. Two attitudinal variables pertaining to (a) family size norms (large or small norm), and (b) disposition to the use of family planning constitute the first set of the indicators of family size and family planning.

#### Family Size Norms

Family size norms is the focus of the first problem of identifying the factors associated with differences in family size ideals to be investigated in this study. It will be used as an intervening attitudinal variable in the second problem concerning fertility performance. The significance of shifts in family size values was evident in the discussion of the theoretical framework presented in the preceding chapter. Couples have large families either because they actively desire large families or because they do not conceptualize a specific family size. Hence, as Schutzer (1978), Davis (1975), and others have concluded, unless couples can visualize a family size that is ideal for them and unless this ideal is small, actual family size will not be reduced. Changes in motivation toward smaller families is

an important prerequisite to changes in fertility behavior. Several studies (Katiyar, 1976; Rele and Kanitkar, 1976; Bhatia, 1978) have attempted to specify the socio-economic correlates of small family norms in India. Some of the significant factors have been higher education, higher income, higher occupational status of the respondent, and younger age.

Empirically, several alternate measures of family size norms exist, such as preferred family size, expected family size, and ideal family size. In this study, the concept of ideal family size (or desired family size) is used to operationalize norms about family size. The following question was asked regarding the family size that respondents considered ideal: "If your married life were to start all over again, you had as much money as you possibly need and you could have just the number of children you want, how many children would you want to have?" This definition involves two elements which renders it suitable for this study. A major criticism of the concept of ideal family size has been that respondents tend to rationalize their existing family size as ideal. Specifying hypothetical conditions concerning their married life, economic circumstances and biological conditions will minimize, although not totally eliminate, the influence of actual fertility on the norm. Preferred family size and expected family size, in contrast,

are based on the actual family size. Preferred family size refers to the number of children wanted in addition to the children the respondent already has. Similarly, expected family size includes the number of children the respondent expects to bear by the end of her childbearing history. Preferred and expected family size not only include the family size achieved at the time of the interview, but the expectations and desires for the future are stated in the context of the past and present experiences of the respondents.

Ideal family size is a stronger measure of motivation and shifts in these motivations. Couples who idealize two children or fewer, even in ideal conditions, could be expected to be more strongly committed to a smaller family size. This is especially true in comparison to those couples who idealize small families only due to economic restrictions and impaired fecundity. Since the nature of the family size norms is an important aspect of the population problem investigated in this study, the ideal family size concept is the most suitable and reliable measure of shifts in the family size values.

The hypothetical nature of the ideal family size question also provides a solution to another criticism concerning the validity of the family size norm. For example, Hauser (1967) questions the meaningfulness of ideal family size

in a society where children and life in general are determined by nature and God. This criticism, however, will not be valid, if it can be shown that the majority of the respondents can conceptualize a specific family size and can do so even under hypothetical conditions.

Another criticism of the ideal family size concept refers to the possibility of mechanical answers by individuals who have been influenced by the family planning slogan of two or three children (Bhatia, 1978). Earlier research (Knodel and Prachuabmoh, 1973; University of Kerala, 1965) provides some tests that were included in the design of this study to evaluate the meaningfulness of the data on ideal family size. Questions regarding family planning and additional children wanted constitute two such tests. If the concept of ideal family size possessed intrinsic meaning for the respondents those whose actual family sizes exceed or are equal to their ideals generally will not want any more additional children and will be using some form of birth control to avoid additional births. Previous studies (Rele and Kanitkar, 1976; Knodel and Prachuabmoh, 1973; University of Kerala, 1965) have proved the relevance of this index. A discussion of the validity of the concept of ideal family size in this study will be provided in the next chapter.

Related to the question of mechanical responses is another criticism by Ryder and Westoff (Rele and Kanitkar,

1976) concerning the limited utility of the ideal family size due to its small variance. Rele and Kanitkar (1976: 313), however, argue that fecundity indirectly restricts the size, the range, and consequently the variance of the ideal family. Further, most research on ideal family size in India until 1973, reviewed by Rele and Kanitkar indicate a family of 3 to 4 children to be the average ideal. Ideal family size of the respondents of this study undertaken in 1977, the end of a period of intense family planning program, will provide an interesting comparison with the apparent earlier norms.

One final issue requiring clarification concerns the nature of the relationship between ideal and actual family size. Earlier, it was noted that ideal family size will be used as an intervening variable in analyzing fertility behavior. However, since ideal family size was ascertained at the time of the interview, the problem of delineating the time ordering in a causal model remains. In other words, it is necessary to determine, theoretically, that the ideal family size is antecedent to actual family size.

An important distinction between actual and ideal family size may provide some aid in delineating the time ordering. Actual family size is a cumulative index of a series of childbearing events spread out over a period of time. In contrast, the ideal family size concept refers to the most



desirable final product, at the end of the childbearing process. There is no means of deciding whether the respondent entered her childbearing period with this ideal. But the evidence available (and presented in the next chapter) suggests that the respondents had some notion of their ideal at least before their last birth or even earlier. For example, in the case of women whose actual family size corresponded with their ideal, future pregnancies were deliberately avoided because they were satisfied with the sex combination or number of children, or because of economic and health reasons, among others. Similarly, the majority of women whose actual fertility exceeded their ideal family size desired to stop bearing children at an earlier stage in their pregnancy history, especially once their ideal was attained. Finally, the reasons stated by respondents for their inability to achieve their ideal (such as biological and economic difficulties) also suggest some prior conceptualization of an ideal. These respondents, thus, did conceptualize an ideal size, before the process of childbearing was ultimately completed. Ideal family size can, therefore, be used as an intervening variable in the modernization-fertility relationship.

### Family Planning Attitudes

The second normative variable--attitude to the use of family planning--represents an important precondition to the acceptance or rejection of methods enabling deliberate control of family size, viz. family planning.

A favorable disposition to deliberate control over reproduction, in turn, presupposes a change in the values concerning family size. Hence, it is theoretically possible that family size norms may influence attitudes to family planning. The indicators of modernization used in this study--group variables, socio-economic status of the family and the wife, her age at marriage, extent of infant mortality, and role relationships--may similarly be expected to influence family planning attitudes, both directly and indirectly through their effects on norms regarding family size. For example, Mukherjee (1975) found husband-wife communication about family planning to have a significant influence on awareness and favorable disposition to family planning. At the same time, Miller and Inkeles' (1974) data allow only indirect effects to education, occupation, urban residence, living standards, and mass media exposure. The effects of these modern experience variables are mediated through psychological modernity (a system of modern values) which has a strong direct effect on favorable attitudes to family planning.

While considerable research has been undertaken to identify the correlates of attitudes to family planning, the latter's relationship to fertility behavior has been neglected. In this model, therefore, attitude to family planning is studied from two perspectives. It is conceived, first as a dependent variable, whereby the role of modernization and family size norms in creating favorable dispositions to family planning are analyzed. Secondly, it is also necessary to assess the role of favorable attitudes towards family planning, both as a direct and an intervening mechanism, in the modernization-fertility relationship.

Respondent's attitude towards family planning is an ordinal variable with responses ranked as follows:

(1) indispensable; (2) favorable; (3) favorable to some methods only, while definitely not to all; (4) favorable, if used to space children only; (5) indifferent; (6) unfavorable only because of after-effects; (7) unfavorable; (8) totally opposed.<sup>4</sup>

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<sup>4</sup> Items #3 and #4 in the attitude to family planning index represent conditional approval and from a policy perspective are more advantageous than indifference. Hence, they were ranked before indifference. Further, item #4 does not involve the notion of limiting the size of the family, an important goal of the family planning program and was placed after #3. Item #6 was placed before item #7 because the former implies a favorable disposition to a method, if there are no after-effects. In contrast, item #7 indicates that the respondent does not favor using any method irrespective of whether it has after-effects or not.

### The Practice of Family Planning

A final set of factors with the most direct effect on fertility behavior deals with the practice of family planning. Once again, and as mentioned in the previous chapter, the impact of the practice of family planning on actual fertility, involving conscious control of childbearing, has been neglected in previous research. Numerous attempts have been made to explain why couples adopt various methods of family limitation and the effectiveness with which they use these methods (Mitchell, 1972; Anker, 1973; Mukherjee, 1975; Goldberg, 1975; Olson-Prather, 1976; Jolly, 1976). Unfortunately, such studies, either explicitly or implicitly treat the practice of family planning as a proxy for actual fertility. In the process, they ignore the basic goal of adopting family planning, namely, the reduction of family size. They also do not consider the effect of family size norms on family planning practice. For, as noted earlier, unless the ideal size of the family is reduced, adoption of birth control will not lead to smaller family sizes in practice. In this study, therefore, family planning adoption is conceptualized as a direct correlate of fertility behavior. Concomittantly, it is another intervening mechanism through which modernization, both structural and individual, and family size and family planning norms affect fertility.

Three indices of family planning practice are included

in the model. Parity at which birth control was initiated is the first variable and is operationalized as the birth after which the method was adopted. It takes a value of zero if the method was used before the first pregnancy. If a respondent has never used a method, she was given a value of the total number of pregnancies plus one.<sup>5</sup>

Starting deliberate control of fertility early in the childbearing process presupposes modern experiences and exposure to modern values, a notion of a family size that would be ideal, and a desire to conform to that ideal. Hence, it is hypothesized that respondents who enjoy a more modern status and those with smaller ideals, less intense preference for sons, and more favorable attitudes to family planning will tend to initiate family planning use earlier in their pregnancy history. These respondents, in turn, would have smaller actual families compared to those who postpone initiation of family planning. It is when couples desire small families that planning and controlling their childbearing as early as possible becomes essential to make fertility behavior congruent with their norms.

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<sup>5</sup>One drawback of this measure is that it does not distinguish between women who began using birth control after several pregnancies and those who had relatively few children despite not using any method. It is, however, very unlikely that women with small families would not have used birth control at all.

### Family Planning Effectiveness

If close conformity between behavior and norms is to be achieved, early use of family planning alone is not sufficient. The overall effectiveness with which the methods are used and the pregnancies planned are also essential to achieve the desired outcome--a smaller family size. Modern experiences, favorable values concerning family size and family planning, and early use of family planning are conceptualized as pre-requisites for high effectiveness.

Family planning effectiveness is conceptualized as the success in the couple's efforts to prevent unplanned and unwanted conceptions (Stokes, 1973: 300). Following Stokes, family planning effectiveness can be measured by classifying each pregnancy as planned or unplanned. The pregnancy is planned if use of family planning devices is consciously not initiated so as to have a child or is deliberately stopped to have a child. The rest of the pregnancy categories denote lack of planning in various degrees. A pregnancy is unplanned if the pregnancy occurred even though some method(s) was being used regularly, in which case it is termed an accidental pregnancy. It is defined as unintended if it occurred while use of a method had to be stopped for reasons such as health, side effects, and running out of supplies. If the pregnancy occurred before a method was used, but the child was not wanted immediately, it is also

called an unintended pregnancy. Such a pregnancy, however, would be ranked below the previous unintended pregnancy in its effectiveness because the former had not initiated use of any methods when the pregnancy occurred. Finally, the 'never-thought-of-it' pregnancies are those which just happened in the course of the marriage without any of the above considerations.

### Sterilization Status

The third and final index of family planning use deals with whether or not the respondent or her husband have adopted sterilization, a permanent method. Sterilization status is a different measure of family planning behavior from family planning effectiveness. Although sterilization is the most effective contraceptive in terms of avoiding future births, it does not provide a picture of the status of planning effectiveness throughout the pregnancy history. Moreover, since it involves a one time decision at the time of acceptance of the method, it is not as dependent on modernization as family planning effectiveness and parity of birth control initiation are. This may be particularly true of the present sample, a large proportion of which were exposed to the intensive family planning campaigns and programs of the seventies. As a result, predictions about the fertility behavior of sterilized as opposed to non-sterilized respondents are difficult to derive. Yet, some indi-

cation of the differential may be found in a study by Ram and Datta (1976) in which sterilized respondents had experienced higher fertility than the non-sterilized, even after adjusting for marriage duration.

The model culminates with fertility behavior, the central focus of the study, operationalized as actual family size and the correspondence between the respondent's ideal and actual family size. Actual family size refers to the number of children surviving at the time of the interview. This data is obtained from the pregnancy history. The gap between the respondent's ideal and her actual family size constitutes the second measure of fertility behavior.

#### Sample And Method

The study was conducted among the eligible couples of reproductive age in Trivandrum and Ernakulam districts of Kerala, India. Both sterilized and non-sterilized women on the eligible couples list form the universe of the study. The eligible couples list includes all currently married couples with wives in the reproductive age group. To make the sample more homogeneous in terms of their views on family planning in general, Hindus and non-Catholic women from the Christian community were selected. While there are no age restrictions on the sterilized respondents, the non-sterilized sample is restricted to the 30-45 age group. Since the study compares achieved family size with ideal



family size, it is necessary to use respondents who have completed their family size. Given the low age at marriage in India, it is assumed that by the time the respondents reach the 30-45 age group, they will have completed their childbearing or will at least have made final decisions about family size. The couples who have resorted to sterilization form a group which has definitely completed their childbearing.

The area of research is the city corporation areas of Trivandrum and Ernakulam districts and one typical rural block in each the two districts situated not very near the two cities. The third city in Kerala--Calicut--was omitted because it is mainly a commercial area and is less developed in comparison to the other two cities as a result of which the necessary variations in the relevant variables (such as education, occupation) under consideration will not be available. Moreover, the majority of the city's population is Muslim and the district in which this city is located is on the whole less modernized compared to the Ernakulam and Trivandrum districts. Thus, this study includes the whole range of variations with regard to the rural/agricultural-urban/industrial continuum and socio-economic characteristics such as education, occupation, and income. The interview schedule was the tool for data collection with questions covering the relevant variables included in the

study. A copy of the schedule is presented in Appendix C.

Family planning workers associated with the primary health centers of the two rural areas and the family planning centers of the two cities maintain lists of couples residing in their jurisdiction who are eligible to use birth control. From these eligible couple lists, sampling frames consisting of couples satisfying the following criteria were prepared in each of the four areas. The first group in an area consisted of couples who had not accepted sterilization, who were either Hindus or Christians, and where the wife was thirty years of age or older. Those who had adopted sterilization formed the second group in each of the areas. Again, both Hindu and Christian couples were included in the list of sterilized couples. Since these couples had completed their childbearing, there were no age restrictions in the case of the wives in the sterilized sample.

Once the sampling frames were prepared, two samples of 300 couples from each of the two cities and 200 couples from each of the rural groups were selected using the systematic sampling technique with a random start. The desired sample size was 500 so that 150 couples from each of the cities and 100 couples from each of the rural areas were to be selected. The wives were the subjects of the interview in this study. They were visited in their homes by the

researcher. If a respondent was not available, she was replaced with the next woman on the list until the desired sample size had been achieved.

Both the medical officers and the family planning workers in the four areas were helpful in locating the respondents in the sample lists. The researcher asked to speak with the respondent privately and was generally well received. A few of the older women refused to talk about their family planning histories because the researcher was younger and unmarried. Another woman could not respond on her own because her husband insisted on being present at the interview and took the initiative in answering the questions. The session was, therefore, terminated midway through the interview and the respondent was dropped from the sample.

Aside from these few problems, the women were generally interested in talking about the issues raised in the questionnaire. The final sample includes 168 women from the city and 105 women from the rural area of Trivandrum district. The urban sample from Ernakulam district consists of 158 respondents and its rural sample has 109 women. In accordance with the study design discussed above, the total sample of 540 respondents was also stratified to include 275 sterilized and 265 non-sterilized women.

## CHAPTER IV

### METHODOLOGICAL AND SUBSTANTIVE ISSUES IN THE STUDY OF FAMILY SIZE

India, as documented in the earlier chapters, is currently experiencing a low mortality rate and a high fertility rate. In terms of the demographic transition theory, India is in the growth stage of the transition and if she were to follow the stages postulated by the transition theory should move into the last phase and develop a lower rate of fertility. Reductions in fertility translated into smaller family sizes at the individual level, is not only the historical experience of most developed societies, but is the most viable means to checking rapid growth in population. Opportunities for extensive outmigration which prevailed in developed countries during their transitions and which tempered their population growths are not available to today's developing countries. Further, unlike the gradual declines in mortality rates experienced by developed countries during their transitions, mortality reductions have been much faster in the developing countries, thereby escalating their population growth rates. Yet, raising the mortality rates to curb population growth is not merely ethically unacceptable, but is socially destructive.

India's high fertility results in part from people's desires for large families which are supported by the structure of social institutions. Thus, voluntary reductions in fertility will come about only as a result of significant social and cultural changes. Hence, any comprehensive population control policy should address itself to both fertility desires and behavior and to the social structures sustaining them. In assessing the fertility differentials that exist in this sample population, both family size orientations and achieved family size will be considered. The two concepts are complex and difficult to operationalize in such a fashion that they are uncontaminated by other factors. Before investigating fertility in the context of modernization and family planning, it is necessary to discuss some of the methodological and substantive issues surrounding the concepts of ideal family size, actual family size, and the gap between them.

For the Indian woman, having at least two to four children is a crucial aspect of her marriage. For example, only 1% of the respondents felt it was right for married couples who are physically able to produce children to choose to have none at all. 69% of the women considered children a source of meaning and happiness in life and viewed a family without children incomplete. In a society with no formal social security system, it is not surprising that 29% of the women consider children a source of security in old age. Children are, moreover, perceived as being nec-

essary for the perpetuation of the family line and the family property (11%). A small proportion of these respondents (4%) even consider having children the duty of women. Finally, some women (3%) attach extremely negative implications ('it is a sin,' 'it is abnormal,' 'it is selfish') to the notion of couples deliberately choosing not to have any children.<sup>1</sup>

The attribution of both economic and non-economic benefits to children is consistent with other studies on the value and costs of children (presented in Espenshade, 1977). One study in particular, the Value of Children (VOC) project of the East-West Center in Hawaii dealing with the perceived costs and benefits of children, has direct relevance to the present research. The VOC study (conducted in 1975) suggested that in the more developed countries, such as Taiwan, Japan, the U.S., and Korea, the emotional value of children was more important than the economic. In the Philippines and Thailand, which in contrast are less developed, the economic benefits were more significant. Kerala, despite being a developing society, falls in between. As in other poorer societies, women in Kerala do perceive children as a source of economic security. Yet, they place greater emphasis on the emotional satisfaction that children provide their parents. The non-economic value attached to children in

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<sup>1</sup>The percentages add up to more than 100 because 17% of the women gave multiple responses.

Kerala has its basis in the collectivistic orientation of the society. Unlike most developed societies, Indian society is very group oriented with the individual finding fulfillment and happiness through institutions that will directly benefit the group. Marriage is one such institution because marriages in India are contracted primarily for the sake of the perpetuation of the family through procreation. Satisfaction of the individual's needs are only secondary in marriages. Hence, it is not surprising that for many of these women children provide meaning to and happiness in life along with a sense of completion of their marriages. This is particularly true for traditional women who find personal fulfillment mainly vicariously through their progeny. Changes in the economic structure alone, therefore, will be insufficient to induce shifts in fertility norms and behavior.

### Ideal Family Size

While children are very important to women in Kerala, the next logical questions are how many children do these women ideally desire to have and how many do they actually have. The ideal family size of each respondent is operationalized as the number of children (surviving) that she would want to have if she could begin her married life all over again from the start, she could have as much money as she could possibly need, and she could have just the number of children she wants. It is probable that responses to a

question on ideal family size will be influenced by the respondent's actual fertility. The danger of rationalizing the family size already achieved would be greater if the question was phrased "what is your ideal family size?" Determining family size ideals in hypothetical and optimal conditions would encourage the respondent to disassociate her response to some extent from her experience, although its influence cannot be totally avoided.

To aid the respondent in distinguishing between the family size norm for her family and a general norm, two more questions concerning family size were asked. The first referred to the ideal for an average family in Kerala and the second to the ideal for a family like the respondent's. These questions should help the respondent in conceptualizing a situation other than her experience when responding to the question on ideal family size under ideal conditions. It will also, to some extent, prevent her from voicing the general norm of two children advocated by the family planning propaganda and think of a personal ideal.

Ideal family size under ideal conditions is used as the index of family size norms in later analysis. For reasons discussed above, it is the least contaminated by the respondent's fertility performance and by the general norm. Ideal family size determined under optimal conditions is also a better measure of the intensity of the desires than the other two norms applicable to the average family and to a family like the respondent's. If women idealize smaller



families (one, two or three children) even in optimal circumstances, it can be expected to represent a genuine break from the desire for large families. The ideal under ideal conditions is also the only personal norm among the three indices referring to the respondent's own family. When comparisons are to be made between the woman's fertility norms and behavior, it is, therefore, logical to use her personal ideal. The two other measures of family size norms will, however, be used for further comparison and analysis (in relation to the ideal under ideal conditions) in order to delineate the meaning of the ideal family size concept for these women.

Analysis of the family size desires presented in Table 2 suggests that most of the respondents have a clear idea of the family size that would be ideal for them under ideal conditions and the two other ideals. In all three instances, less than 1% of the women refused to speculate, stating that they would want as many children as God gives or that such matters were not in their hands. A larger proportion (albeit still a small overall percentage) of women refused to talk about a definite family size when the question referred to the ideal family size under ideal conditions than under the other two frames of reference. It reflects their inability or unwillingness to visualize hypothetical situations as opposed to the rest of the two questions which involve more real assumptions. More specifically, for this small group of women, family limitation is

TABLE 2

## FREQUENCY DISTRIBUTION OF IDEAL AND ACTUAL FAMILY SIZE

Family Size Number of Children	Ideal Family Size in Ideal Conditions	Ideal Family Size for Average	Ideal Family Size for a Family like the Respondents'	Actual Family Size
0 - 2	40.0%	41.7%	61.5%	27.1%
3 - 4	54.6	55.5	36.2	50.0
5+	4.5	2.4	2.3	22.9
As Many as God Gives	0.9	0.4	0.2	. . .
N	100% (540)	100% (540)	100% (540)	100% (540)

not legitimate unless it is the result of other conditions, such as economic hardship. Alternately, it would suggest (similar to Heer, 1968) that if the economic conditions improved, family size would increase at least in the short run. But, unlike earlier predictions of critics (Mauldin, 1965 and Hauser, 1967), the number of respondents who were unwilling to give a numerical answer, even in a developing society, was small.

How many children do the respondents think constitute an ideal size? Table 2 indicates very few women (less than 5%) have an ideal of more than four children even under ideal conditions. Yet, the fact that 55% idealize three or four children, double the replacement level, does not augur well for Kerala's population future. But compared to the 67% who had an ideal of three or four children in a study conducted in 1965 in three villages in Trivandrum district of Kerala (University of Kerala, 1965: 24), the proportion idealizing a similar family size is lower in this study.<sup>2</sup> Further, while only 28% of the women in the 1965 project had an ideal of two or fewer, the corresponding proportion is 40% in this study. A definite shift toward smaller family size during the last decade is, thus, evident.

There is also a close similarity in the various family

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<sup>2</sup>These three villages were also the target population of the Family Planning Communication Research Project of the University of Kerala and hence were subject to an intense Family Planning Education Program.

sizes idealized under the three frames of reference (Table 2). About 95% of the respondents have an ideal of four or fewer in all the three instances. However, differences exist in the proportions with replacement level or smaller ideals. Ideal family size under optimal conditions involves the most hypothetical assumptions and under these ideal economic and biological (fecundity) conditions, more women desire to have three or four children than two. The ideal for an average family, although not as hypothetical as the ideal under ideal conditions, refers to a more general unit than the reference point involved in a family like that of the respondent's. This generality may explain why more respondents also tend to idealize larger families in this situation than in the case of a family like the respondents'. In contrast to these two ideals, nearly 20% more of the women idealize a family size of two children or fewer for a family similar to theirs. Of the three norms, the ideal for a family like the respondent's is the closest approximation to reality. It is, therefore, not surprising that economic considerations are a major part of the establishment of this particular type of family size ideal as is evident in Table 3 which describes the reasons for the different ideals. In the case of the ideal for a family like the respondent's, economic difficulties are the most common reasons cited, irrespective of the size of the ideal family.

Why do these respondents consider these family sizes to be ideal? Economic problems seem to be a major reason

TABLE 3

FREQUENCY OF DISTRIBUTION OF REASONS FOR IDEAL FAMILY SIZE<sup>1</sup>

Reasons for Ideal	Ideal Family Size	Ideal Under Ideal Conditions		Ideal For Average Family		Ideal for Family Like Respondents'	
		0-2	3-7	0-2	3-7	0-2	2-7
Economic		91.9%	76.6%	88.1%	79.3%	93.2%	82.3%
Better Care; Better Education		. . .	. . .	3.3	0.9	6.8	11.6
Accepted Norm		0.9	1.9	6.2	2.0	. . .	. . .
Health of Parents (Mother)		3.2	2.5	. . .	. . .	. . .	. . .
Care of Parents; Inheritance of Property		. . .	1.1	. . .	1.2	. . .	. . .
Infant Mortality		0.5	3.5	1.2	7.2	. . .	1.9
Company for Kids		3.2	10.1	1.2	6.9	. . .	3.3
Custom; Gift of God; Completion of Household		. . .	4.9	. . .	2.6	. . .	0.9
N		100% (224)	100% (368)	100% (243)	100% (348)	100% (336)	100% (215)

<sup>1</sup>Total number is higher than 540 because few people gave multiple reasons.

for limiting the size of the family to two children or less in all the three questions (refer Table 3). Under ideal conditions too, economic considerations tend to predominate, presumably because the respondents realize the economic implications (benefits and disadvantages) of large families even under the best circumstances. Apart from economic reasons, the next major concern of women who idealize three to four children (under ideal conditions) is the necessity for a child to have the company of another child. Respondents do not favor single children because these children would be deprived of the psychological and social advantages of growing up with siblings.

One additional item in the case of the reasons for the ideal in a family like the respondent's needs to be specified. As mentioned earlier, economic considerations predominate in this instance too. It is also the only situation in which better care and education of the children are cited more often as reasons for limiting the size to a certain level. In other words, when the frame of reference is closest to the respondent's own experience, economic concerns and factors that indirectly lead to higher economic status (education) become important. Thus, the data lend support to one of the conclusions of the VOC study (Espenshade, 1977: 17) that economic factors underlie individuals' decisions to limit their family size.

Although the majority of these women stated a numerical size in response to the questions on ideal family size

and suggested reasons for their norms, it is necessary to assess the meaningfulness of these responses. For this purpose, the respondents were also asked how many children, in addition to the surviving number, they would want to have (University of Kerala, 1965; Knodel and Prachuabmoh, 1973). If the family size ideals that they stated had some intrinsic significance for them, the majority of the respondents whose family size has exceeded or is equal to their ideal would say 'no more children' while those with smaller family size than ideal would want to have more children. Even though this comparison is between a hypothetical (ideal) and real situation, a comparison is still feasible. The ideal family size under ideal conditions would provide the ceiling of the family size norms of these women. If a respondent considers three children the norm under the most ideal conditions and she already has three children in actuality when circumstances are far from perfect, she can be logically expected not to want any additional children. Extenuating circumstances, such as dissatisfaction with an existing sex combination, could lead such a respondent to want more children even though she has achieved her ideal.

A crosstabulation of the additional number of children wanted by their actual family size is presented in Table 4 for each of the ideal family size categories. The data lend credibility to the ideal family size responses of these women. For example, a vast majority of the respondents with an ideal family size of two and an actual of two or fewer

TABLE 4  
CROSSTABULATION OF NUMBER OF ADDITIONAL CHILDREN BY ACTUAL FAMILY SIZE  
AND BY IDEAL FAMILY SIZE

Actual Family Size	Ideal Family Size	Ideal Family Size = 2				Ideal Family Size = 3				Ideal Family Size = 4-6			
		Number of Additional Children Wanted											
		+0	+1	+2	N	+0	+1	+2	N	+0	+1	+2	N
0 - 2		72%	26	2	100% (53)	69%	29	2	100% (35)	78%	22	-	100% ( 9)
3 - 4		96%	4	-	100% (54)	88%	12	-	100% (34)	81%	19	-	100% (21)
5 - 11		91%	9	-	100% (11)	100%	-	-	100% (26)	100%	-	-	100% (16)
N		118				95				46			



children stated that they wanted no additional children. Two groups deserve special mention in this connection. Seven out of fifteen (47%) of the women with an ideal family size of two and four out of six (67%) with an ideal family size of three, prefer not to have any more children, despite having just one surviving child. These two groups, even though small, represent a significant deviation from the traditional view of high fertility desires and behavior that is expected to prevail in a developing society. If this trend becomes more widespread, it could, to some extent, cushion the exponential effects of normative and actual fertility that are above the replacement level of two on population growth.

Some data is also available on why respondents do not want additional children. 81% of the women cite economic reasons for not wanting any more or more than one additional child while 15% fear for the health of the mother. It is possible that these respondents would desire more children if economic and health conditions improve. Yet, their responses to the ideal family size determined under ideal conditions when economic and health restrictions were hypothetically absent, provide some indication that even if this ideal situation were to be actualized partially, the increase in desired family size would not be too drastic. On the contrary, dissatisfaction with the existing number or sex combination of their children and family pressure to have more children are reasons for wanting more children.

These results support one major conclusion of the Value of Children study (Espenshade, 1977: 17), viz., that economic factors constitute the primary basis for decisions regarding family size. Specifically, respondents desire to limit their ideals to a size that is compatible with their financial means and that will enable them to derive the maximum benefit from a given economic situation, even if it is an ideal one. Further, compared to earlier research, the data also presents evidence of the increasing popularity of the small family norm, a welcome trend in the population history of Kerala. The responses to the ideal family size questions also appear quite meaningful, even if some respondents may have rationalized their achieved fertility.

### Actual Family Size

Changes in family size norms are an important prerequisite for slowing down the growth rate of the population. Yet, the actual fertility performance of women is by far the most concrete indicator of population change. Actual family size is measured as the total number of surviving children at the time of the interview. When couples envision a family size, they generally refer to the number of living children who can either provide them economic security or emotional support or any other benefits that parents attribute to children. Further, it is the number of surviving children that would either accelerate or decelerate the rate of growth in population. Hence, the decision was made to use

the number of surviving children rather than the number of live births as the index of fertility behavior.

Operationalizing fertility performance as the number of surviving children at the time of the interview, however, involves a methodological problem. The actual family size variable underestimates the level of fertility performance of the respondents because many of them have not yet completed their childbearing. Certain safeguards were, however, built into the study design to counter the problem, although they by no means provide a perfect solution. Slightly more than half the respondents (51%) have undergone sterilization and consequently have terminated their pregnancy histories permanently. The problem of underestimation is, therefore, limited to the non-sterilized respondents.

Of the 265 non-sterilized respondents, about 5% have completed their childbearing since they are over the age of 45. As for the rest ( $N = 253$ ), the non-sterilized sample included only women who are thirty years of age or older (Table 5). Nearly 50% of these women were married at the age of twenty or earlier and consequently have spent at least ten years, if not more, in childbearing. On the other hand, only 12% of the women were married after the age of 25. Given the relatively high chronological age and low age at marriage of these respondents, it could be assumed that most of these women would have completed a major part of their childbearing at the time of the interview or at least that by then final decisions about family size will have

TABLE 5

FREQUENCY DISTRIBUTION OF AGE AND AGE AT  
MARRIAGE OF NON-STERILIZED RESPONDENTS

<u>Age of The Respondent</u>		<u>Age of Marriage of The Respondent</u>	
Age Groups	F (%)	Age Groups	F (%)
30 - 34	42.6%	10 - 17	28.7%
35 - 39	33.6	18 - 20	27.9
40 - 44	19.2	21 - 24	31.3
45+	4.5	25+	12.1
	100%		100%
N	(265)	N	(265)

been made.

Additional evidence on the length of time since the last pregnancy lends further support to the assumption that most of these women had to a large extent completed their childbearing at the time of the interview. For example, 52% of the non-sterilized women below the age of 45 (total N=253) had not had pregnancies for at least five years.<sup>3</sup> Another 35% fell in the intermediate range of two to four years since their last pregnancy. The relatively long periods during which these women had not experienced pregnancies, coupled with their low age at marriage, and high chronological age substantiate the assumption that the actual fertility of these respondents at the time of the interview closely approximates their ultimate fertility.

A rough idea of the extent of underestimation involved in the measurement of achieved family size can be obtained through a comparison between preferred family size and actual family size (Table 6). Preferred family size is derived by adding the additional number of children wanted to the actual family size. There are no major differences between the actual and preferred family size of the respondents in any of the age categories. The largest difference is among the youngest women (the 30 to 34 age group); but even for this category the average addition is only 0.3

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<sup>3</sup>The actual range of time since their last pregnancy varies from five to twenty years.

TABLE 6

MEAN ACTUAL FAMILY SIZE, ADDITIONAL NUMBER OF CHILDREN WANTED,  
AND PREFERRED FAMILY SIZE BY AGE OF NON-STERILIZED RESPONDENTS

(1) Age of the Respondents	(2) Actual Family Size	(3) Number of Addi- tional Children Wanted	4 = (2+3) Preferred Family Size	(5) N
General	3.3	0.2	3.5	265
30 - 34	2.8	0.3	3.1	113
35 - 39	3.3	0.2	3.5	89
40 - 44	4.4	0.02	4.4	51
45+	4.3	0.0	4.3	12

children. Thus, it can be assumed that actual family size is a fair approximation to the number of children the respondents will ultimately have. To examine this thesis further, the difference between actual and ideal family size will be analyzed in some detail.

If a comparison of the distribution of the actual and ideal family size<sup>4</sup> presented in Table 2 is analyzed, it suggests clearly that the fertility performance of these women generally exceeds the norm. For example, while 40% of the respondents idealize replacement level fertility (two children or fewer), only a third of the sample has an actual fertility of two or less. Conversely, although a mere 4.5% of the women consider five or more children as constituting the ideal family size, nearly five times that proportion have that many surviving children. The closest correspondence between ideal and actual fertility lies in the family with three or four children. Although this is the most common family size with regard to fertility norms and actual fertility, it is double the replacement level. Persistence of these fertility values and behavior patterns will postpone further the attainment of the goal of zero population

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<sup>4</sup>The ideal family size under ideal conditions is used as the index of fertility norms. For reasons discussed earlier, of the three types of ideal family size (ideal under ideal conditions, ideal for an average family, and ideal for a family like the respondent's) that were ascertained, ideal under ideal conditions would be the least influenced by the respondent's fertility behavior. It is also the only personal ideal referring to the respondent's own family.

growth. Thus, despite the limited success that has been achieved in popularizing smaller family size values, much more work is needed before replacement level fertility becomes the modal family size.

### The Gap Between Actual And Ideal Family Size

Thus far the discussion centered on the comparison of the fertility norms and behavior of the respondents as a group. It is also necessary to evaluate the individual fertility performance of these women in relation to their personal norms. In the earlier analysis of ideal family size, it was noted that family size norms of the respondents were generally smaller in comparison to the findings of previous research. Comparing actual fertility with ideal fertility will signify the extent to which that trend toward small family norms has been accompanied by changes in fertility behavior.

The gap is basically a measure of the difference between actual fertility and ideal fertility for each of the respondents. Three groups of women can be identified in terms of the differences between their ideal and actual family size: those whose actual family sizes are equal to their ideals; those whose actual family sizes exceed their ideals; and those whose actual is lower than their ideal. Of the three groups, the second--those whose actual fertility exceeds their ideals--is the most problematic from the standpoint of population growth. Eventhough they generally



consider four or fewer than four children as the ideal family size (see Table 2), these women represent a classic situation where they have more children than they desire. Changes in their behavior apparently lag behind shifts in their values toward the smaller family. Barring attempts at rationalizing their actual family size, respondents whose actual fertility corresponds with their ideal are more modern in their fertility behavior. In other words, these respondents have lower ideals (four or below) and they have (at least at the time of the interview) restricted their actual family sizes to their ideals exemplifying correspondence between their values and behavior. The third group would also be effective contributors to curtailing population growth, especially if they decided not to complete their family size ideals. These comparisons of norms with behavior would, thus, provide an indication of the intensity and permanence of the popularity of the smaller families.

#### Actual Family Size Equal To Ideal Family Size

Among the non-sterilized respondents, there are 24% whose actual family size corresponded with their ideal.<sup>5</sup> 49 (79%) of these respondents have been using some form of birth control to avoid further pregnancies. Moderately

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<sup>5</sup>There are a total of 265 non-sterilized respondents of which 64 have a gap of zero between their actual and ideal family size. The relevant data on contraceptive methods used and influence of sex combination on family size were available from only 62 of these women.

reliable methods (condoms and rhythm method, Khalifa, 1973: 437) are the most commonly used by almost 71% of these women who used some method. Only 4 of these respondents used a combination of two methods.<sup>6</sup> The rest of the respondents used abstinence as a means to avoid future pregnancies. Judging from their past history of family planning, however, these women whose actual fertility is equal to their ideal fertility have been the most successful in effectively planning their families. They have the highest family planning effectiveness score (see Appendix B for a description of this measure) among the three gap categories which suggests a high probability of their avoiding future unwanted births.<sup>7</sup> Thus, the agreement in the ideal and actual fertility of these women appears to be not a matter of chance, but of deliberate choice. They have used family planning effectively in order to limit their actual family size to their norms. These women can be considered modern in their fertility behavior. Besides, the chances of their having additional children appear slim, thereby limiting the probability of underestimating their actual fertility.

While 21% (N=13) of the women whose actual family size

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<sup>6</sup>Condoms and pills, condoms and rhythm method, rhythm method and abstinence, and rhythm method and withdrawal are the four combinations used.

<sup>7</sup>Mean family planning effectiveness scores for the non-sterilized sample and the three gap groups are as follows: overall=2.7; actual less than ideal=2.8; actual greater than ideal=1.95; actual equal to ideal=3.6. For the sterilized respondents it is 2.3.

was equal to their ideals did not use any method, a discussion of their reasons for not using family planning indicates that some of them (N=4) definitely do not intend to have more children. Two of these respondents are biologically subfecund and the husbands of the remaining two women were undergoing vasectomy fairly soon after the interview. Among the rest (N=9), a third of them discontinued practising any form of family limitation because of the side effects of the contraceptives they used. The remaining (N=6) have not used any contraceptives due to their dissatisfaction with the sex combination of their families and wanting an additional child. These women, thus, will most probably have an additional child. Yet, since they form a very small percentage of the total non-sterilized sample (3%), the additional pregnancies, if they do occur, would not drastically alter the results obtained using actual family size at the time of the interview.

The respondents were also questioned about their reasons for the conformity between their ideal and actual fertility. Satisfaction with the sex combination of their family size was the reason why the fertility norms of 49% of the respondents corresponded with their performance.<sup>8</sup> Among the rest (N=30), health problems (57%), economic difficulties (27%), satisfaction with the number of children irres-

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<sup>8</sup>The N here is 59 because responses were not available in the case of five women.

pective of the sex combination (13%), and their husband's desire for just two children (3%) were the reasons cited for the equivalence between actual and ideal family size. Having children of both sexes, and not just children, is of considerable significance to these women. It also suggests that if the desired sex combination had not been reached, they would have had more children in an attempt to acquire the right combination. Thus, even though these women appear modern in their fertility behavior, traditional concerns (such as offsprings of both sexes) are still an integral part of their family size decisions.

#### Actual Family Size Greater Than The Ideal

Achieved family sizes exceed ideals in the case of 46% of the non-sterilized respondents, constituting the largest of the three gap categories. However, their pregnancy histories were not completely haphazard processes since 75% of these women did say they wanted to stop having additional children at some earlier point in their childbearing, but for reasons discussed later they either could not or did not stop. Nearly 51% desired to stop after their second child while another 37% wanted to stop at least after the third child. The parity at which they desired to stop corresponds closely with their ideal family size as seen in Table 7. Views about their ideal family size, thus, do not appear to be responses that these women provided on the spur of the moment. They, in all probability, had some notion of the

TABLE 7

CROSSTABULATION OF THE BIRTH AFTER WHICH THE RESPONDENT  
WISHED TO STOP CHILDBEARING BY HER IDEAL FAMILY SIZE  
FOR NON-STERILIZED WOMEN WHOSE ACTUAL FAMILY SIZE  
EXCEEDS THEIR IDEAL

Parity At Which Respondent Wished to Stop	Ideal Family Size		
	2	3	4 - 5
2	93.8%	6.1%	. . .
3	6.2	93.9	. . .
4	. . .	. . .	72.7%
5	. . .	. . .	18.2
6	. . .	. . .	9.1
N	100% (48)	100% (33)	100% (11)

family size that would be suitable for them earlier in their pregnancy histories.

Although these respondents desired to stop their pregnancies after a certain child, very few of them (15% or 18 respondents) adopted some method of family limitation to actualize their desires. Nearly 53% of this group used moderately reliable methods, such as condoms and rhythm, while only 32% used reliable methods (IUDs and Pills). The major reason why they conceived despite using a method of birth control was that 74% of them were, by their own judgement, not very careful or were irregular in using the methods. This is also evident in their low family planning effectiveness score (1.95). Another 21% had to discontinue using birth control measures because of side-effects. Finally, there was one case in which the woman had become pregnant due to a vasectomy failure.<sup>9</sup>

On the other hand, 85% (104) of the respondents whose actual family size exceeded their ideal did not take any measures to limit their family size, even though they wanted to stop at some point. One of the most common reasons for their inaction was that they were dissatisfied with their sex combination. In a developing society, with its male dominated culture, it is not surprising that more women wanted one more boy (23%) than a girl (14%). Another third

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<sup>9</sup>This respondent's husband did undergo vasectomy for a second time on the day of the interview.

(28%) of the women stated that they lacked information about family planning methods at that time and hence did not know what measures to take to prevent pregnancies. Health problems (15%) and husband's or relatives' objection to using birth control methods (13%) were some of the other reasons.

This group, thus, presents a typical example of the conservative women who for various traditional reasons were motivated to have large families, and very often, ended up with more children than they said they wanted. Two of the most common characteristics of these women need to be mentioned again because they suggest elements that would require special attention in any population policy. Further education with regard to systematic and careful use of birth control methods is essential if fertility is to be controlled. Dissatisfaction with the sex combination, reflected particularly in the desire for more boys has its basis in the social and economic structure of the society. The patrilineal system of lineage and inheritance predominates in Kerala. It also places the responsibility of providing economic security for their older parents on the sons since a formal social security system is not available. Thus, alternative means of economic security will have to be devised, if the undue emphasis on sons is to be lessened.

Actual Family Size Smaller Than Ideal Family Size

The last group among the non-sterilized respondents comprises those women whose actual family size is smaller than their ideal. Although they comprise 30% (N=78) of the non-sterilized sample,<sup>10</sup> 68% (N=50) of them did not intend to complete their family size while one respondent had not decided about it. Biological difficulties (44%) is one of the most common reasons why the women could not complete their ideal. This group is especially significant from the methodological point of view because they have practically completed their actual family size. But from a theoretical perspective their fertility behavior, particularly their small family size cannot be characterized as modern and as the outcome of deliberate choice. It was dependent on extraneous circumstances that were beyond their control.

On the contrary, the rest of this group was motivated not to have any more children for two reasons. Economic difficulties were the reason why 46% of the women decided not to complete their ideals. Even among these women who cited economic reasons 19% (4) were also hindered by biological difficulties in having more children. The lack of time at the disposal of the working mother for child care was the second major reason why 8% of the women decided not to complete their ideals. Unlike the women whose family

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<sup>10</sup>In this section, data is available only for 74 respondents.



size was involuntarily limited by subfecundity, this group seems to recognize the economic disadvantages of large families. Employment of women which is also perceived as incompatible with large families, presents another effective means of fertility control.

Among the women (N=74) whose actual family sizes were smaller than their ideals, 23 (31%) of them intended to have more children. Dissatisfaction with the sex composition of their actual family size is the reason why 65% of these women intend to complete their ideal family size. However, unlike the women whose actual fertility was higher than their ideal, a larger proportion of these respondents who had a smaller actual family size than ideal wanted one more girl (37%) as opposed to wanting one more son (28%). One probable cause for this preference of daughters over sons could be that more of these women have experienced deaths of female infants. Higher infant mortality for girls than for boys along with a shorter life expectancy for females over males has been recorded in India (U.N., 1973: 115). In short, desire to have one or even two children of each sex is very predominant among these respondents and is one of the important reasons contributing to larger families. Very few women (9%) intend to have more children for the sake of having more children. At the same time, 17% of the women fear the possibility of infant mortality and intend to have more children to counteract the potential loss. Finally, the pressure from their husbands or parents to have more

children is another reason why 9% of the respondents intend to complete their ideals.

Once again, although the probability of these women having an additional child or two is high, they form only 9% of the non-sterilized sample. Thus, the chances of underestimating the actual family size, while not completely eliminated, is considerably reduced. At the same time, it is not merely children that these respondents are interested in. They desire to have a definite proportion of sons and daughters and they will attempt to attain that desired sex composition. As noted earlier, sons are perceived as a source of security. Daughters, on the contrary, are expected to provide emotional fulfillment because girls, these women contend, will maintain their familial ties, particularly to the mother, even after marriage. This division of functions or benefits attributed to sons and daughters is rooted in the social fabric of India and is another factor that contributes to the higher fertility rates.

#### Sterilized Respondents

While dissatisfaction with the sex composition was one of the most significant inducements to having additional children among the non-sterilized respondents, it is satisfaction with the overall number of children that was the most common motivation for respondents to undergo sterilization (75%). Of these 205 women, only 18% accepted sterilization because they were also satisfied with their sex com-

position. Another important reason for undergoing sterilization was health problems (20%), although almost half (48%) of these women also mentioned satisfaction with number of children. It is possible that the sterilized respondents, in their attempt to achieve a definite sex combination, had more children than they could afford to and wanted to have. Some indication of this is evident in a comparison of their ideal with their actual family size. There are more sterilized (59%) than non-sterilized respondents (46%) whose actual fertility exceeds their ideals. Alternately, the proportion of sterilized women whose fertility performance is below their ideal is smaller (19%) in comparison with their non-sterilized counterparts (30%). Further, the sterilized respondents have, on the average, also been less effective in planning their families (effectiveness score=2.3). Hence, instead of risking further pregnancies, it appears that they decided to undergo sterilization.

In any event, very few (16%) of these women have regretted their decision to opt for a permanent method like sterilization. Among those who did regret, side-effects, both physical and psychological, is the most commonly stated reason (51%) for regret. Insufficient number of children (21%) and dissatisfaction with their sex composition (28%) are further causes for regret. Nonetheless, what is more significant is that 84% of the women who are sterilized, irrespective of the reason for which they adopted that

method, are happy with their choice.

Earlier it was noted that a larger proportion of sterilized respondents (59%) than the non-sterilized (46%) have exceeded their ideals in their fertility behavior. More sterilized respondents (43%) also wanted to stop after their third child compared to the non-sterilized women (37%). Conversely, fewer sterilized women wanted to stop after two children (43%) in comparison to the non-sterilized respondents (51%). Yet, like their non-sterilized counterparts, although a majority (81%) of them wanted to stop having additional children earlier in their pregnancy history, almost 83% did not do anything to prevent their pregnancies. Once again, dissatisfaction with their sex combination<sup>11</sup> (36%) and not knowing what to do (27%) seem to be the most common reasons for their inaction. Lack of means (money and facilities for operation--15%) and the objection of husbands or relatives (15%) are the other reasons for not using birth control earlier. Thus, prior to sterilization, the sterilized women do not differ much from the non-sterilized women in their motivation for not using any methods even when they desired to stop, resulting in more children than they wanted for both groups.

Among those who used some method prior to steriliza-

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<sup>11</sup>The influence of the respondent's desire to have either a boy or a girl on their decision to postpone using any method of birth control lends support to the earlier explanation with regard to the predominance of satisfaction with the number of children as a reason for sterilization.

tion, a majority of them (67%), like the non-sterilized women, still conceived because they were not careful in using the method of their choice. Another 29% of these women had to stop using contraceptives because of side effects. Further, more of the sterilized respondents (54%) used only moderately reliable methods of condoms and rhythm in contrast to the reliable methods of IUD and Pills (37%).

In short, three factors--dissatisfaction with the sex composition of their children, lack of information on contraceptives, and inefficient use of contraceptives prior to sterilization--have been important contributors to higher fertility than desired in the case of the sterilized respondents as well as with their non-sterilized counterparts. Given these similarities between sterilized and non-sterilized women whose actual family sizes exceed their ideals, the question can be raised whether many of these non-sterilized women would adopt sterilization in the future. If the evidence presented in the next three chapters is any indication, the answer would be 'no,' because adoption of a permanent method, such as sterilization, is not an example of modern status and modern family planning behavior in Kerala. In other words, significant socioeconomic and family planning status differences are found between the sterilized and non-sterilized women. These issues will be discussed in the following chapters.

However, before proceeding to that discussion it is important to reiterate that the notion of having children in

marriage and having a desired sex composition seems crucial to the women of Kerala. Any population control policy will have to be concerned with this basic premise. The goal of the population policies is not to eliminate the desire for children altogether, but to effectively reduce the desire for many children and the practice of having large families. Even more significant is the desire to have at least one son and a daughter, if not two of each sex. Educational programs aimed at popularizing the concept of two children as opposed to one of each sex will have to be designed. Ironically, the existing posters depicting an ideal family with two children involves a couple with a son and a daughter. Grass-root level campaigns will also be needed to disseminate on a regular basis both the available information regarding various birth control methods and contraceptives. Further, policies designed to provide supplementary sources of meaning and happiness, especially in the life of the woman, such as increasing opportunities for careers and some security in old age, will be necessary to offset the importance attached to large families.

## CHAPTER V

### MODERNIZATION, FAMILY PLANNING, AND FAMILY SIZE:

#### A PRELIMINARY ANALYSIS

The preliminary discussions, both theoretical and analytic, presented in the preceding chapters leads to the basic conclusion that one of the most urgent tasks facing India in her attempt to curb rapid population growth is to lower her birth rates. Modernization and an effective family planning program are two major aspects of a coherent solution to the population problem. Both of these factors can influence fertility in two ways: at the normative level, they may bring about changes in individuals' attitudes toward and desires for large families; at the behavioral level, they can lead to smaller achieved families. An effective family planning program in the context of modernization can be operationalized as representing structural and individual causes and correlates of fertility decline. The model used in this study, therefore, progresses from the structural aspects of modernization through several layers of intervening modernization and family planning variables, with each successive layer impinging more directly on family size. In establishing the empirical validity of this model, the first step is to examine the direct relationship of the

explanatory variables to fertility and the relationships among the independent variables. This procedure would also provide a description of the sample in terms of these micro and macro level factors affecting fertility.

### Background Variables

Four background variables are used in the model as macro-structural indicators of modernization. Rural or urban area of residence is probably one of the most basic structural variables influencing fertility, both directly and indirectly. It directly represents diverse levels of urbanization and industrialization; at the same time, each area offers its members different opportunities for participating in its economic, social, cultural, religious, and demographic sectors. Because they represent different levels of modernization, rural-urban differences need to be assessed throughout.

Of the 540 respondents in the sample, 326 were selected from two city corporations, with 168 respondents from Trivandrum city (an administrative-industrial center) and 158 from Cochin city (a commercial-industrial center). 105 women were selected from the rural area in Trivandrum district and 109 from the rural area in Ernakulam district, making a total of 214 rural respondents.

Religion, the second background factor, is a significant traditional influence in Indian life, although secularization processes (another aspect of modernization) are more



evident in the cities. The western influence in Indian Christianity lend plausible the hypothesis that Christian respondents would be more modern in their life experiences, including their fertility behavior. It could also be hypothesized that the secular effects of Christianity may be more intense in the cities.

Caste status of the individuals, with its religious and social influences, is another significant background variable. In the context of modernization, caste status may influence fertility through the process of secularization and through the availability of economic and social opportunities to members of different caste groups. The Hindu respondents in the sample belong to either the Brahmin, Nair, Ezhava, or Scheduled castes. In the ritual hierarchy of castes, Brahmins have the highest caste status. Though the Nairs are lower than the Brahmins in the ritual hierarchy, they are the dominant caste in Kerala in terms of political and economic power, a feature which may be significant in its relation to social and economic status and fertility. Ezhavas, an economically backward caste, are next to the Nairs in the caste hierarchy. The lowest caste, the Scheduled caste (called so because they are listed by Presidential orders under Articles 341 and 342 of the Constitution, Government of India, 1972: 121), comprises all the 'untouchable' castes. Affirmative action programs of the Indian government since Independence have altered their opportunities for participation in the modernization pro-

cesses in the country.

Corresponding to the Hindu caste ordering, caste distinctions are found among the Christians too. The Jacobite/Marthomite denomination in the Christian church, the powerful landowning group, occupies the highest status in the Christian hierarchy followed by the C.S.I. (Church of South India) denomination, and last by the Nadar Christians. Two factors are generally considered relevant in the Christian status: the preconversion caste status and the timing of the conversion. If a group had a higher status before conversion to Christianity, it maintained a commensurate status in the present hierarchy. Upper caste Christians also claim to have been converted earlier than the lower castes.

Table 8 presents the distribution of respondents by area of residence, religion, and caste status. The general distribution by religion roughly approximates the distribution in the state of Kerala.<sup>1</sup> In the case of caste status, a greater proportion of the lower castes--Ezhavas, C.S.I., and Nadar Christians are in the rural than in the urban sample, which has a larger percentage of the upper castes--Brahmins, Marthomites/Jacobites--and Scheduled castes. Nairs are almost in the same proportion in the rural and urban samples. This distribution partially projects the traditional rural-urban differences with a possible selective migration

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<sup>1</sup>According to the 1971 population figures only 5.6% of the total Kerala population is non-Catholic Christian (Government of India, 1979).

TABLE 8

DISTRIBUTION OF RESPONDENTS BY RELIGION,  
CASTE, AND AREA OF RESIDENCE

Religion	Area of Residence			
	Caste	General	Rural	Urban
Hindu (N = 509)	Brahmins	11.3%	2.3%	17.4%
	Nairs	30.5	31.3	30.0
	Ezhavas	29.4	38.3	23.3
	Scheduled Castes	22.9	18.2	26.2
Christian (N = 31)	Marthomite/Jacobites	1.7	. . .	2.8
	C.S.I.	0.4	0.9	. . .
	Nadar Christians	3.8	8.9	0.3
N		100% (532)	100% (214)	100% (318)

of the scheduled castes to the cities where better opportunities are available.

The mean age of the respondent in the sample is 34.6 while the average age of the rural respondents is lower (32.7) than that of the urban respondents (35.6). This difference suggests two possible modernization trends: (a) the lower age of the rural women may be a reflection of the higher rural fertility (traditional) and the consequent younger population; (b) it may also denote selective retention of older couples in the cities, especially in the higher status groups. Seniority is still a dominant criteria for upward movement in the Indian occupational structure. Another interesting aspect of the age of the respondent is the traditional pattern of a larger age gap between the respondent and her husband for older women that is evident in the rural area alone ( $r=.12$ ;  $<.05$ ). That this relationship is absent in the cities connotes a modern trait of smaller age differences between husband and wife.

What are the implications of these patterns for fertility orientation and actual fertility? Contrary to the modernization hypothesis, the rural and urban areas do not differ significantly in their ideal and actual family size and consequently in the gap between the two. The average ideal family size for rural and urban areas is 2.9 and 2.8 respectively and the mean actual family size is 3.5 in both samples. Compared to an ideal family size of 3.1 found in a 1965 study of three villages in Trivandrum district (Univer-

sity of Kerala, 1965) or of 3.7 children found in the least developed village and 3.1 in the highly developed village in Gujerat (Anker, 1973), the rural and urban ideals in this study are low. Differences in the actual family size between this study's sample and earlier studies (for example, an expected family size of 5.4 in the Trivandrum village study and 6.0 in the Gujerat study) is even more pronounced. Even when the average family size of sterilized respondents in this study is considered (rural sterilized=3.5 and urban sterilized=3.8), it is lower than that of the two previous samples. Yet, the achieved family size of the respondents in this study is higher than their ideals suggesting a slower responsiveness of family size behavior to modernization and the family planning program compared to the norms.

These rural urban similarities, however, conceal significant variations within each area. For example, significant religious and caste differences in ideal family size are found in the rural area. Cities, in contrast, provide a secular atmosphere facilitating favorable reception to the intensive family planning propaganda on the necessity of having two children or less across the religious and caste groups.

Religious and caste differences in the rural ideals, however, are not completely in the hypothesized direction. Rural Christians are not only more conservative in their ideals than their urban counterparts, but are so in compari-

son to the rural Hindus too.<sup>2</sup> Christianity appears to be more traditional than Hinduism in the rural areas. The flexibility of Hinduism in adopting external elements (such as family planning propaganda) and reinterpreting them according to its principles is evident in the similarity in ideal family sizes of urban and rural Hindus.<sup>3</sup> Lower caste status of the rural Christians (who are either C.S.I. or Nadar Christians--the two lower castes) may be an additional explanatory factor.

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<sup>2</sup>Mean ideal family size for the different religious groups are:

	Rural	Urban
Christians	3.4	2.8
Hindus	2.9	2.8

<sup>3</sup>As Bondurant (1963) pointed out, the concept of Dharma (duty) is central to the Indian social and religious structure. Every individual has a specific dharma commensurate with his status in society. But, a given individual's dharma may change depending on circumstances and hence norms are laid down to guide actions under extraordinary conditions. Though an individual's behavior under these stressful conditions may be very different from what is regularly required of him, he still will be acting 'dharmically.' At the societal level too, dharma is viewed as changing from age to age and each era has a different value system. Social and political leaders like Gandhi are considered competent in interpreting when an age has ended and another has begun. Thus, the accommodative nature of dharma and Hinduism, which permits change without destroying its basic principles is an important aspect of India's modernization. It is in this context that the smaller ideal family size of the rural Hindus, which is in direct contrast to the religious and social values placed on a large number of children needs to be understood.

While the Christian castes in the villages do not differ from each other in their family size norms, the differences among the rural Hindu castes do not conform to the traditional hypothesis. The Scheduled castes, the lowest castes, have the lowest mean ideal family size (2.5) followed by the Nairs (2.8), Brahmins (3.0), and Ezhavas (3.1). These differences need to be explained in terms of both the ritual and secular aspects of caste. In the rural areas, caste status has a traditional influence (higher ideal family size) in two instances: when the basis of upper caste status is purely ritual or religious, as in the case of the Brahmins and when the basis of lower caste status is both ritual and economic as with the Ezhavas. In contrast, upper caste status becomes a modernizing force when the high ritual and secular statuses coincide as in the case of the Nairs. Modern fertility orientations of the lower castes--may be a reflection of the mobility aspirations of these once down trodden groups, in the context of the affirmative policies of the government. Incidentally, these opportunities are not available to the Ezhavas. Once again, it is a secular factor--government intervention--that differentiates the two ritually lowest castes. This is a clear example of the unique nature of Indian modernization and consequently of its demographic transition.

Unlike ideal family size, the variations in the actual family size and the gap between the actual and the ideal among the religious and caste groups are not statistically

significant. Yet, the actual family size of these women are consistently higher than their ideals, resulting in a positive gap. This pattern may be because ideals, which are opinions, are more easily influenced by modernization and family planning propaganda than achieved family size, particularly when the frame of reference is a group. It suggests a lag in behavioral changes following the shifts in norms.

Finally, modern orientations of the younger respondents and their earlier exposure to the family planning program<sup>4</sup> is expected to be reflected in their ideal and actual family size, and the ensuing gap between the two. It also provides a time dimension to the problem. Differences between the older and younger cohorts, if they exist, may represent changes over time. Further, older respondents, by virtue of their age, have experienced greater numbers of childbearing years too. Analysis reveals significant positive correlations between age of the respondent and the family size variables suggesting more traditional ideals and behavior of older women and vice versa (Tables 9, 10). Apart from the effect of the number of childbearing years,

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<sup>4</sup>There is no direct evidence in this study for the role of family planning program in influencing fertility norms and behavior. Yet, the programs were revitalized and have been implemented vigorously since the late sixties and early seventies. This is bound to create differences in family planning practices over time. For example, the percent of married women in the reproductive age using contraception in India doubled between 1969 (8%) and 1976 (17%) (Nortman and Hofstatter, 1980: 73).



TABLE 9

CORRELATIONS AMONG SELECTED MODERNIZATION, FAMILY PLANNING,  
AND FAMILY SIZE INDICES <sup>1,2</sup>

	Age of Respondent	Husband's Education	Husband's Occupation	Modern Items Owned	Respondent's Education	Respondent's Occupation	Age at Marriage of Respondent	Infant Mortality	Family Planning Attitudes
Husband's Education	.19 <sup>a</sup>								
Husband's Occupation	.26 <sup>a</sup>	.78 <sup>a</sup>							
Modern Items Owned	.29 <sup>a</sup>	.71 <sup>a</sup>	.67 <sup>a</sup>						
Respondent's Education	.04	.75 <sup>a</sup>	.68 <sup>a</sup>	.63 <sup>a</sup>					
Respondent's Occupation <sup>3</sup>	.32 <sup>a</sup>	.83 <sup>a</sup>	.86 <sup>a</sup>	.77 <sup>a</sup>	.89 <sup>a</sup>				
Age at Marriage of Respondent	.02	.32 <sup>a</sup>	.28 <sup>a</sup>	.19 <sup>a</sup>	.45 <sup>a</sup>	.65 <sup>a</sup>			
Infant Mortality	.08 <sup>c</sup>	-.09 <sup>c</sup>	-.09 <sup>c</sup>	-.08 <sup>c</sup>	-.09 <sup>c</sup>	-.06	-.01		
Family Planning Attitudes	.06	-.17 <sup>a</sup>	-.15 <sup>a</sup>	-.17 <sup>a</sup>	-.21 <sup>a</sup>	-.28 <sup>a</sup>	-.05	.04	
Parity of FP Initiation	.33 <sup>a</sup>	-.34 <sup>a</sup>	-.26 <sup>a</sup>	-.23 <sup>a</sup>	-.43 <sup>a</sup>	-.55 <sup>a</sup>	-.41 <sup>a</sup>	.19 <sup>a</sup>	.22 <sup>a</sup>

TABLE 9  
(Continued)

	Age of Respondent	Husband's Education	Husband's Occupation	Modern Items Owned	Respondent's Education	Respondent's Occupation	Age at Marriage of Respondent	Infant Mortality	Family Planning Initiation	Parity of FP Initiation	Family Planning Effectiveness	Ideal Family Size	Actual Family Size
Family Planning Effectiveness	-.07 <sup>c</sup>	.42 <sup>a</sup>	.36 <sup>a</sup>	.35 <sup>a</sup>	.43 <sup>a</sup>	.32 <sup>a</sup>	.26 <sup>a</sup>	-.06	-.17 <sup>a</sup>	-.62 <sup>a</sup>			
Ideal Family Size	.12 <sup>b</sup>	-.19 <sup>a</sup>	-.14 <sup>a</sup>	-.12 <sup>b</sup>	-.21 <sup>a</sup>	-.30 <sup>a</sup>	-.15 <sup>a</sup>	.04	.12 <sup>b</sup>	.25 <sup>a</sup>	-.18 <sup>a</sup>		
Actual Family Size	.36 <sup>a</sup>	-.27 <sup>a</sup>	-.16 <sup>a</sup>	-.15 <sup>a</sup>	-.36 <sup>a</sup>	-.50 <sup>a</sup>	-.47 <sup>a</sup>	-.14 <sup>a</sup>	.13 <sup>a</sup>	.74 <sup>a</sup>	-.45 <sup>a</sup>	.30 <sup>a</sup>	
GAP	.31 <sup>a</sup>	-.17 <sup>a</sup>	-.09 <sup>c</sup>	-.09 <sup>c</sup>	-.26 <sup>a</sup>	-.34 <sup>a</sup>	-.40 <sup>a</sup>	-.15 <sup>a</sup>	.07 <sup>c</sup>	.63 <sup>a</sup>	-.36 <sup>a</sup>	-.24 <sup>a</sup>	.85 <sup>a</sup>

1 a = <.001 level of significance;

b = <.01 level of significance;

c = <.05 level of significance

2 N = 540 - 535

3 N = 122 since unemployed women were eliminated from the analysis of work status of women

TABLE 10

CORRELATIONS AMONG SELECTED MODERNIZATION, FAMILY PLANNING,  
AND FAMILY SIZE INDICES BY AREA OF RESIDENCE<sup>1,2</sup>

RURAL CORRELATIONS	Age of Respondent	Husband's Education	Husband's Occupation	Modern Items Owned	Respondent's Education	Respondent's Occupation	Age at Marriage of Respondent	Infant Mortality	Family Planning Attitudes
Husband's Education	.06								
Husband's Occupation	.15 <sup>c</sup>	.74 <sup>a</sup>							
Modern Items Owned	.05	.65 <sup>a</sup>	.65 <sup>a</sup>						
Respondent's Education	-.09	.70 <sup>a</sup>	.61 <sup>a</sup>	.58 <sup>a</sup>					
Respondent's Occupation <sup>3</sup>	.29 <sup>a</sup>	.80 <sup>a</sup>	.74 <sup>a</sup>	.84 <sup>a</sup>	.87 <sup>a</sup>				
Age at Marriage	-.09	.36 <sup>a</sup>	.30 <sup>a</sup>	.23 <sup>a</sup>	.44 <sup>a</sup>	.55 <sup>a</sup>			
Infant Mortality	.14 <sup>c</sup>	-.06	-.06	-.12 <sup>c</sup>	-.15 <sup>c</sup>	-.10	-.15 <sup>c</sup>		
Family Planning Attitudes	.02	-.14 <sup>c</sup>	-.11 <sup>c</sup>	-.19 <sup>b</sup>	-.20 <sup>a</sup>	-.32 <sup>a</sup>	-.00	.10 <sup>c</sup>	
Parity of FP Initiation	.42 <sup>a</sup>	-.40 <sup>a</sup>	-.30 <sup>a</sup>	-.34 <sup>a</sup>	-.46 <sup>a</sup>	-.56 <sup>a</sup>	-.41 <sup>a</sup>	.20 <sup>a</sup>	.21 <sup>a</sup>

TABLE 10  
(Continued)

RURAL CORRELATIONS	Age of Respondent	Husband's Education	Husband's Occupation	Modern Items Owned	Respondent's Education	Respondent's Occupation	Age at Marriage	Infant Mortality	Family Planning Attitudes	Parity of FP Initiation	Family Planning Effectiveness	Ideal Family Size	Actual Family Size
Family Planning Effectiveness	-.19 <sup>b</sup>	.49 <sup>a</sup>	.38 <sup>a</sup>	.40 <sup>a</sup>	.45 <sup>a</sup>	.61 <sup>a</sup>	.24 <sup>a</sup>	-.05	-.17 <sup>b</sup>	-.63 <sup>a</sup>			
Ideal Family Size	.16 <sup>b</sup>	-.11 <sup>c</sup>	-.06	-.14 <sup>c</sup>	-.14 <sup>c</sup>	-.38 <sup>a</sup>	-.15 <sup>c</sup>	-.02	.15 <sup>c</sup>	.31 <sup>a</sup>	-.18 <sup>b</sup>		
Actual Family Size	.48 <sup>a</sup>	-.31 <sup>a</sup>	-.18 <sup>b</sup>	-.21 <sup>b</sup>	-.39 <sup>a</sup>	-.42 <sup>a</sup>	-.48 <sup>a</sup>	-.07	.07	.76 <sup>a</sup>	-.40 <sup>a</sup>	.32 <sup>a</sup>	
Gap	.40 <sup>a</sup>	-.25 <sup>a</sup>	-.15 <sup>c</sup>	-.14 <sup>c</sup>	-.33 <sup>a</sup>	-.20 <sup>b</sup>	-.39 <sup>a</sup>	-.07	-.01	.61 <sup>a</sup>	-.31 <sup>a</sup>	-.22 <sup>a</sup>	.84 <sup>a</sup>

TABLE 10  
(Continued)

URBAN CORRELATIONS	Age of Respondent	Husband's Education	Husband's Occupation	Modern Items Owned	Respondent's Education	Respondent's Occupation	Age at Marriage	Infant Mortality	Family Planning Attitudes	Parity of FP Initiation	Family Planning Effectiveness	Ideal Family Size	Actual Family Size
Family Planning Effectiveness	-.08	.36 <sup>a</sup>	.31 <sup>a</sup>	.32 <sup>a</sup>	.39 <sup>a</sup>	.32 <sup>a</sup>	.25 <sup>a</sup>	-.06	-.17 <sup>b</sup>	-.63 <sup>a</sup>			
Ideal Family Size	.12 <sup>c</sup>	-.23 <sup>a</sup>	-.17 <sup>b</sup>	-.11 <sup>c</sup>	-.24 <sup>a</sup>	-.22 <sup>a</sup>	-.15 <sup>b</sup>	.07	.11 <sup>c</sup>	.21 <sup>a</sup>	-.17 <sup>b</sup>		
Actual Family Size	.31 <sup>a</sup>	-.29 <sup>a</sup>	-.17 <sup>b</sup>	-.17 <sup>b</sup>	-.38 <sup>a</sup>	-.41 <sup>a</sup>	-.47 <sup>a</sup>	-.18 <sup>b</sup>	.17 <sup>b</sup>	.74 <sup>a</sup>	-.49 <sup>a</sup>	.28 <sup>a</sup>	
Gap	.26 <sup>a</sup>	-.17 <sup>b</sup>	-.09 <sup>c</sup>	-.12 <sup>c</sup>	-.26 <sup>a</sup>	-.26 <sup>a</sup>	-.41 <sup>a</sup>	-.20 <sup>a</sup>	.12 <sup>b</sup>	.64 <sup>a</sup>	-.39 <sup>a</sup>	-.24 <sup>a</sup>	.85 <sup>a</sup>

1 a = P < .001 ; b = P < .01 ; C = P < .05

2 Rural N = 213-214 ; Urban N = 321-326

3 Rural N = 63 ; Urban N = 57

TABLE 10  
(Continued)

URBAN CORRELATIONS	Age of Respondent	Husband's Education	Husband's Occupation	Modern Items Owned	Respondent's Education	Respondent's Occupation	Age at Marriage	Infant Mortality	Family Planning Attitudes
Husband's Education	.12 <sup>c</sup>								
Husband's Occupation	.19 <sup>a</sup>	.75 <sup>a</sup>							
Modern Items Owned	.25 <sup>a</sup>	.69 <sup>a</sup>	.64 <sup>a</sup>						
Respondent's Education	-.02	.74 <sup>a</sup>	.67 <sup>a</sup>	.62 <sup>a</sup>					
Respondent's Occupation <sup>3</sup>	.23 <sup>a</sup>	.78 <sup>a</sup>	.74 <sup>a</sup>	.72 <sup>a</sup>	.86 <sup>a</sup>				
Age at Marriage	.04	.29 <sup>a</sup>	.25 <sup>a</sup>	.16 <sup>b</sup>	.44 <sup>a</sup>	.58 <sup>a</sup>			
Infant Mortality	.06	-.11 <sup>c</sup>	-.11 <sup>c</sup>	-.08	-.06	-.02	.07		
Family Planning Attitudes	.08	-.21 <sup>a</sup>	-.20 <sup>a</sup>	-.22 <sup>a</sup>	-.23 <sup>a</sup>	-.15 <sup>b</sup>	-.08	-.00	
Parity of FP Initiation	.30 <sup>a</sup>	-.36 <sup>a</sup>	-.29 <sup>a</sup>	-.24 <sup>a</sup>	-.45 <sup>a</sup>	-.42 <sup>a</sup>	-.41 <sup>a</sup>	.18 <sup>a</sup>	.23 <sup>a</sup>

modernization of fertility values and behavior (shift toward smaller family) seems to have occurred in the two districts over time. All three relationships are consistently stronger in the rural areas implying more pronounced fertility differences between the older and younger rural women than the urban. This is consistent with the modernization argument that older rural women would participate in and benefit least from the changes occurring through time in the Indian society. Because of their urban location, older respondents in the city have a better chance of participating in the modernization trends.

In general, the influence of the background variables on fertility (whenever significant) lends support to the general argument that modernization, especially in its religious and demographic (age of the respondent) aspects, does lower fertility aspirations and aids in their realization. However, it should be noted that rural-urban area of residence, the geographical aspect of modernization, is not directly relevant to family size in this sample. Mere residence in a rural or urban area does not differentiate individuals in terms of their family size. The influence of residence is, perhaps, indirect since it is the difference in opportunities (economic, social, and cultural) the cities and rural villages provide that explain differences in fertility orientations and behavior.

### Intervening Social and Economic Characteristics

Social and economic characteristics of the respondent's family and of the respondent herself comprise the first set of intervening variables. They, along with the other intervening variables, represent differences in opportunities provided by the rural and urban areas. Economic modernization (like urbanization and industrialization) leads to improvements in the socioeconomic status of the families, thereby, increasing the availability of means and also modernizing attitudes and values. It is, therefore, hypothesized that these developments would result in lower fertility, both at the normative and behavioral levels.

### Socioeconomic Status Of The Family Of The Respondent

The three indices of the family's socioeconomic status used in the model are husband's education, his occupational status, and the extent of modern items owned by the family.

Since India is a modernizing society, its cities, unlike modernized cities, would be characterized by the complete range on the socioeconomic status dimensions. Rural areas, however, would have the traditional socioeconomic structure. As the results in Tables 11 to 14 indicate, urban families have a higher socioeconomic status than the rural units. They also occupy a wider educational, occupational, and ownership (of modern items) range than the rural areas. Rural areas, on the other hand, have a predominantly traditional economic structure and the absence of the neces-



TABLE 11

DISTRIBUTION OF RESPONDENTS' AND THEIR HUSBANDS' EDUCATIONAL STATUS BY AREA OF RESIDENCE<sup>1</sup>

Educational Categories	Husbands' Education		Wives' Education	
	Rural	Urban	Rural	Urban
Below High School	76.2%	42.6%	78.0%	57.7%
High School	14.5	28.2	13.1	27.6
Above High School	9.3	29.1	8.9	14.7
N	100% (214)	100% (326)	100% (214)	100% (326)
$\chi^2$	a		a	
Gamma	.58		.40	

<sup>1</sup>a = significant at <.001 level.

TABLE 12

DISTRIBUTION OF HUSBANDS' AND WIVES' OCCUPATIONAL  
STATUS BY AREA OF RESIDENCE<sup>1,2,3</sup>

Occupational Categories	Husbands' Occupation		Wives' Occupation	
	Rural	Urban	Rural	Urban
Unemployed		1.8%		
Unskilled Labor	53.3%	21.2		
Skilled Labor	20.1	10.1	77.8%	28.1%
Clerical and Service Occupations	14.0	34.7	3.2	28.1
Managerial and Professional Occupations	12.6	32.2	19.0	43.9
N	100% (214)	100% (326)	100% (63)	100% (57)
x <sup>2</sup>	a		a	
Gamma	.52		.66	

<sup>1</sup>a = significant at <.001 level.

<sup>2</sup>Unemployed women were omitted from the distribution in this table.

<sup>3</sup>The first category in Women's Occupational status refers to both unskilled and skilled labor.

TABLE 13  
EXTENT OF OWNERSHIP OF MODERN ITEMS BY  
AREA OF RESIDENCE<sup>1</sup>

No. of Items Owned	Area of Residence		
	General	Rural	Urban
0 Items	31.3%	52.3%	17.5%
1 - 3 Items	45.4	43.5	46.6
4 - 7 Items	17.6	3.7	26.7
8 -17 Items	5.7	0.5	9.2
N	100% (540)	100% (214)	100% (326)
X <sup>2</sup>		a	
Gamma		.70	

<sup>1</sup>a = significant at <.001 level.

TABLE 14

MEANS, STANDARD DEVIATIONS, AND RESULTS OF T-TEST FOR  
SELECTED VARIABLES BY AREA OF RESIDENCE<sup>1</sup>

Variables		Area of Residence			
		Mean		Standard Deviation	
		Rural	Urban	Rural	Urban
Background Variable	Age of Respondent	32.7	35.8 <sup>a</sup>	4.7	5.2
Socioeconomic Modernization	Education of Husband	6.1	9.6 <sup>a</sup>	4.0	4.7 <sup>b</sup>
	Ownership of Modern Items	0.9	3.0 <sup>a</sup>	1.3	2.7 <sup>a</sup>
	Education of Wife	5.5	7.9 <sup>a</sup>	3.9	4.1
Demographic Modernization	Age at First Marriage	18.8	19.5 <sup>c</sup>	3.5	4.1 <sup>c</sup>
	Infant Mortality	11.5	11.4	16.6	18.2
Social-Psychological Modernization	Conjugal Role Relationships	126.2	141.2 <sup>a</sup>	29.5	32.7
Family Planning Variables	Son Preference	12.7	9.9	18.2	19.6
	Parity of FP Initiation	2.6	2.9	1.9	2.2
	Family Planning Effectiveness	2.3	2.7 <sup>a</sup>	1.3	1.5 <sup>c</sup>

<sup>1</sup> a = Rural-Urban differences significant at <.001 level.

b = Rural-Urban differences significant at <.01 level.

c = Rural-Urban differences significant at <.05 level.

sary infrastructure (electricity, good roads) disallows possession of some of the modern items.

High intercorrelations among the three indices--education, occupation, and ownership of modern items--also provide a consistent picture of the socioeconomic structure of the families (Tables 9,10). As might be expected, higher education, higher occupational status, and higher material status are consistently associated with each other, both in the cities and the rural areas.<sup>5</sup>

It is also necessary to assess the role of religion and caste in the socioeconomic achievements of the sample. Contrary to the expected pattern, Hindus and Christians generally do not differ significantly in their opportunities for participation in the social and economic development.

Caste status, on the other hand, is significant in explaining variations in socioeconomic status, even in modernizing India (Table 15). The data supports the expected pattern of the higher socioeconomic status of the upper castes and vice versa, particularly in the cities.<sup>6</sup> In spite

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<sup>5</sup>Hence, only husband's education will be used as an index of the family's socioeconomic status in the later analysis.

<sup>6</sup>The following are the Chi-square and Gamma values for the relationships between caste and occupational status in the rural areas and cities:

Rural Areas:	Chi-square= $p < .001$ Gamma=-.01
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Cities:	Chi-square= $p < .001$ Gamma=-.31
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TABLE 15

MEANS AND RESULTS OF ANOVA ON THE RELATIONSHIP OF CASTE WITH HUSBAND'S EDUCATION, MODERN ITEMS, AND WIFE'S EDUCATION BY AREA OF RESIDENCE<sup>1</sup>

Area of Residence	Caste	Variables	Husband's Education		Modern Items Owned		Education of Respondent	
			Mean	(N)	Mean	(N)	Mean	(N)
Rural	Brahmin		10.4 <sup>a</sup>	( 5)	1.4	( 5)	7.0 <sup>c</sup>	( 5)
	Nair		7.4	(67)	1.2	(67)	6.7	(67)
	Ezhava		5.3	(82)	0.9	(82)	5.0	(82)
	Scheduled Caste		5.2	(39)	0.6	(39)	4.9	(39)
	Marthomite/Jacobite		. . .	( 0)	. . .	( 0)	. . .	( 0)
	C.S.I		8.5	( 2)	1.5	( 2)	5.0	( 2)
	Nadar Christian		5.2	(19)	0.7	(19)	4.5	(19)
Urban	Brahmin		11.1 <sup>a</sup>	(55)	3.5 <sup>a</sup>	(55)	8.7 <sup>a</sup>	(55)
	Nair		10.8	(95)	3.6	(95)	9.0	(95)
	Ezhava		8.7	(74)	2.9	(74)	7.6	(74)
	Scheduled Caste		7.6	(83)	2.1	(83)	6.4	(83)
	Marthomite/Jacobite		12.3	( 9)	5.4	( 9)	10.6	( 9)
	C.S.I.		. . .	( 0)	. . .	( 0)	. . .	( 0)
	Nadar Christian		10.0	( 1)	3.0	( 1)	9.0	( 1)

- <sup>1</sup> a = Differences among castes significant at <.001 level.  
b = Differences among castes significant at <.01 level.  
c = Differences among castes significant at <.05 level.

of the governmental policies, the upper castes still have a greater share in the fruits of modernization.

These modernization trends could, theoretically, have significant influences on fertility (Tables 9, 10). As might be expected, higher socioeconomic status is systematically associated with lower ideals, lower actuals, and smaller gaps between ideal and actual family size. Higher fertility, both in orientations and in behavior, implies a traditional value system as well as the economic (supplementary income, old age security, and inheritance of wealth) and social necessity of having more children in the poorer families. Additional dimensions of these negative socioeconomic status-fertility relationships are evident under further analysis. Socioeconomic differentials (indexed by education and occupational status) in ideal family size in both rural areas and cities are not as pronounced as the differences in actual family size. In other words, upper and lower class respondents are more similar in their fertility norms than in their fertility behavior. Since the overall family size norms are small, it could be concluded that not everybody who subscribes to small family ideals has conformed to them in practice.

Distinctions in family size norms among the socioeconomic groups are stronger in the urban than in the rural areas. Cities, as noted earlier, have a wide range in their socioeconomic continuum and consequently the family size norms of the top strata are significantly smaller than the

ideals of the lowest strata. On the other hand, the comparatively narrower range in the rural socioeconomic status precludes wide disparities in the rural ideal family size. Yet, the socioeconomic differences in achieved family size are equally strong in both the rural and urban areas, despite the small rural socioeconomic range. Apparently, wider differences in actual fertility exist between the upper and lower classes in the rural areas than in the cities. Stated differently, rural women from lower status families have a higher actual family size in comparison with their city counterparts. Rural residence and lower socioeconomic status, thus, interact in contributing to their traditional fertility behavior.

Socioeconomic differentials in the gap between the ideal and actual family size can be deduced from the patterns in ideal and actual fertility. The gap is the excess in achieved family size over the ideal family size. There is a larger difference between the socioeconomic variations in ideal family size and in actual family size in the rural areas than in the cities. Consequently, the impact of socioeconomic status on the gap between ideal and actual fertility is also stronger in the rural area. In other words, there is a larger proportion of lower class rural respondents who have lower fertility norms but higher actual fertility. At the same time, there is a closer correspondence in the fertility norms and behavior of upper class rural women. In the cities, in contrast, there is closer



conformity between ideal and actual family size. Higher status urban women who idealize smaller families have smaller achieved families, while lower status women have higher ideal and actual families. Thus, the socioeconomic patterns in the gap seem to be a reflection of the socioeconomic variations in fertility norms and behavior.

The third index of socioeconomic status, the ownership of modern items, is a more effective correlate of rural fertility than urban fertility (Table 10). Given the traditional socioeconomic structure of rural areas, the opportunities and means for acquiring and using modern items will be more limited in the rural areas than in the cities. Only those with very high educational and occupational statuses (and probably those who have either worked in foreign countries or have children employed abroad) could afford large numbers of modern items. This will differentiate them from poorer respondents much more clearly than will be the case in the cities. The stronger impact of higher economic status in the reduction of rural fertility complements the argument made earlier for rural economic development as a tool in the population control program.

#### Socioeconomic characteristics Of The Respondent

The second set of intervening social and economic characteristics concern the respondent and her status. Since the woman has a direct role in childbearing, it may be hypothesized that her own socioeconomic achievements, apart

from those of her husband, will have an independent influence on fertility norms and behavior. The respondent's status is measured by three indices--her education, her labor force participation, and her work status.

As might be expected in a male dominated traditional culture, women, both in the urban and rural areas, have lower educational levels than men (Table 11). Moreover, just as with their husband's education, rural women are less educated than their urban counterparts. This fits in with the traditional rural and modernizing urban structures described earlier (Table 14).

The labor force participation pattern of women complements these conclusions. Although a larger proportion of rural women (29%) than urban women work (17%), a majority of the former is in the lower status occupations (Table 12). Employment of poorer women in the unskilled and other lower status occupations may be expected in the non-industrial rural economy. In contrast, the pattern of urban women's employment typical of modernizing cities involves a smaller proportion employed, but in jobs covering the entire occupational spectrum. Limited employment opportunities for women and the lack of sufficient outside help in household jobs often require the urban women to stay at home. Yet, urban women with higher education tend to be employed more than ( $\gamma=.66$ ) the rural women with similar education ( $\gamma=.07$ ). Another interesting aspect of the woman's socioeconomic status is the stronger correlation between her

education and work status compared to her husband's (Table 10). In a context where it is still not customary for the woman to be employed, when they do get a job, they engage in occupations more compatible with their education.

Intercorrelations between the socioeconomic characteristics of the husband and the wife indicate a coherence in the family's socioeconomic structure (Tables 9, 10). Women with higher education tend to marry men with higher education, higher occupational status, and higher economic status. This pattern is less consistent among the rural families than in the cities suggesting a gradual shift in emphasis from family's status to individual's status as a criteria in urban marriages. In the modernizing cities, parity in educational achievements of husband and wife is becoming as important a criteria in contracting a marriage as traditional ones, such as caste status and family's heritage.

Rural-urban differences in labor force participation of women and their work status (that a greater proportion of rural women tend to work, but they work in lower status occupations) is carried over into the relationship between the husband and wife's socioeconomic characteristics. Rural and urban areas differ in their motivations and opportunities for women's employment. Economic factors seem to be the basis of the rural women's labor force participation. Their employment is not a matter of choice, but of necessity. In the cities, however, women's employment seems to

be an expression of their higher status and the consequent emphasis on their non-traditional roles. Thus, it is only in the urban samples that women whose husbands have higher education ( $\text{Gamma}=.28$ ), higher occupational status ( $\text{gamma}=.11$ ), and higher economic status ( $\text{gamma}=.10$ ) are more likely to be employed than are women whose husbands have lower status. Husband's education and economic statuses are not significant differentiating factors in the women's labor force participation in the rural areas while husband's occupational status is. The negative relationship of husband's occupation to wife's labor force participation ( $\text{gamma}=-.33$ ) supports the argument made earlier that monetary considerations require rural women to work, even if it is in lower status jobs. Since education is not a direct or necessary index of economic wealth, it is not a determining factor of whether the rural wife works or not. At the same time, villagers generally possess fewer modern items which may explain the irrelevance of the economic index in the rural areas.

When women are employed, their occupational status is consistent with their husband's status (Tables 9, 10). But, unlike women's education, there are no rural-urban differences in the higher correlations between their work status and their family status. While education is fairly widespread in Kerala, the infrequency of women's labor force participation may explain the equally close correspondence between the husband's status and wife's work status in the

rural and urban centers. The stronger rural correlation between wife's work status and modern items also reflects the monetary contribution that their employment makes toward the purchase of the scarce goods available in the villages.

Wife's socioeconomic characteristics can also be linked back to the background variables. The influence of religion on the socioeconomic status of the respondent is comparable to its influence on her family's status. There are no significant differences among Hindu and Christian women in their education and employment.

Caste distinctions, once again, are operative in women's socioeconomic achievements lending additional support to the results found in the case of the family's status. In spite of the efforts of the government, upper caste women are still more educated than the lower castes (Table 15). Given the traditional rural structure, it is not surprising that the caste distinctions in women's education are not as pronounced in the rural areas as in the cities. These patterns are also consistent with the transitional status of Indian cities.

Caste differences in women's employment further exemplifies this modernizing structure. Although slightly more of the lower caste rural women tend to be in the labor force ( $\gamma = .09$ ) they are engaged in lower status occupations than the upper caste women (Table 16). Status considerations may prevent some of the upper caste women, even if highly educated, from working; but the lower caste respon-

TABLE 16

DISTRIBUTION OF OCCUPATIONAL STATUS OF HUSBANDS AND WIVES  
BY CASTE AND AREA OF RESIDENCE<sup>1,2</sup>

	Occupational Status	Area of Residence	Rural			Urban		
			Upper Castes	Ezhavas	Lower Castes	Upper Castes	Ezhavas	Lower Castes
Husband	Unskilled Labor		55.4%	59.8%	41.4%	12.7%	27.8%	31.3%
	Skilled Labor		6.8	18.3	39.7	5.7	11.1	19.3
	Clerical and Service		16.2	15.9	8.6	36.9	34.7	31.3
	Managerial and Professional		21.6	6.1	10.3	43.9	26.4	18.1
	N		100%	100%	100%	100%	100%	100%
Respondent	X <sup>2</sup>		( 74)	( 82)	(58)	(157)	( 72)	( 83)
	Gamma	a	-.01			a	-.37	
	Blue Collar		28.6%	94.4%	84.6%	4.8%	25.0%	58.8%
	Clerical and Service		7.1	2.8	. . .	33.3	25.0	17.6
	Managerial and Professional		64.3	2.8	15.4	61.9	50.0	23.5
	N		100%	100%	100%	100%	100%	100%
	X <sup>2</sup>		( 14)	( 36)	( 13)	(21)	( 16)	( 17)
	Gamma	a	-.69			b	-.56	

<sup>1</sup>a = Significant at <.001 level; b = Significant at <.01 level.

<sup>2</sup>Upper castes include Brahmins, Nairs, Marthomites/Jacobites, and C.S.I.; lower castes include Scheduled castes and Nadar Christians.

dent is engaged in lower status and traditional occupations constrained by lower educational attainment and required for economic purposes. As expected, caste restrictions in securing higher status jobs seem stronger in the rural areas. The absence of caste distinctions in the labor participation of urban women may be an aspect of the developing nature of the cities. Simply, changing family structures (toward the nuclear family) which limits the help in household jobs available to the urban wife limit her chances of seeking outside employment. This may also be reinforced by status restrictions: until a certain societal threshold in women's employment and modernization is reached, social and economic improvements among the higher castes may increase their conservatism, especially in the question of women seeking outside employment. At the same time, contrary to the traditional pattern, some of the lower caste women in the cities are engaged in higher status occupations (Table 16). These diverse trends, once again, reveal Kerala's cities in their transition toward modernization in contrast to the rural areas, which though developing, lean more toward the traditional end of the continuum.

Analysis of the correlations between age of the respondent and her socioeconomic characteristics provides a time dimension to the problem (Tables 9, 10). Since the older cohorts of women grew up in a more traditional set up and lacked the chances for participating in the post-independence development processes, their experiences and

achievements can differ. However, as in the case of their husbands, no significant changes have occurred in the educational achievements of women suggesting a selective participation of the upper castes and classes in the modernization processes. Data on the labor force participation of the age cohorts and their work statuses further reveal the juxtapositioning of the traditional and the modern elements in the traditional cities. Though the younger urban women (only) tend to be employed more frequently ( $\gamma = -.13$ ), they are engaged mainly in lower status jobs (Table 10). Seniority, and not merit, is still a dominant evaluation criteria in the occupational structure for both men and women.

Although no significant improvements in the socioeconomic status of women are evident over time, changes have occurred in their fertility patterns. Earlier, it was noted that the younger women have significantly lower fertility ideals, actuals, and gaps than the older women. The organized family planning program and cohort differences in their exposure to them may be relevant factors here.

These patterns in the socioeconomic status of the wife are expected to influence fertility norms and behavior in ways similar to that of the impact of her family's status (Tables 9, 10). Higher educational and occupational status of women have a modernizing influence on fertility as evident in their lower ideals, lower actuals, and smaller gaps. But, as with their families' status, women's socioeconomic traits are stronger correlates of actual family size than of



fertility ideals in both the rural and urban areas. Once again, the movement toward the small family norm is not accompanied by similar trends in fertility behavior, especially for the lower classes. Women's education, however, has a stronger modernizing effect on family size norms in the cities with women's occupational status being its counterpart in the rural areas. In a traditional rural context, where the economic status of the family and the social standing of the women are low, higher status jobs are required to modernize women's fertility norms. Higher education of women in itself is not sufficient in lowering ideal family size in the rural areas.

Women's socioeconomic status has effects similar to those of the family's socioeconomic status on actual fertility. Despite the narrower range of the rural women's socioeconomic status, rural fertility differentials are as pronounced as in the cities. In other words, lower class rural respondents have significantly larger numbers of children compared to lower class urban women. Just as with the family's status, rural residence interacts with lower class status in contributing to traditional fertility behavior among the lower class in the rural areas.

The nature of the relationship between respondent's socioeconomic status and the gap between their ideal and actual fertility can be deduced from the socioeconomic patterns in fertility norms and behavior. For example, there is a larger difference between the educational variations in

ideal and actual fertility in the rural areas than in the cities. Consequently, the effect of women's education on the gap between the ideal and actual family is also stronger in the rural areas. Specifically, more rural women with lower education have experienced a larger gap--considerably higher actual fertility than ideal--compared to the upper class ruralites whose fertility behavior corresponds more closely to their norms. In the cities, in contrast, there is greater conformity between actual and ideal family size among women with varying levels of education and hence, the smaller the range in the gap. Thus, the socioeconomic variations in the gap can be understood by analyzing the nature of the effect of women's socioeconomic status on ideal and actual family size separately.

Wife's labor force participation has a modernizing influence only on actual family size and the gap, and that too only in the cities. Employed urban women have significantly smaller achieved families (Mean=2.8) and gaps (-.04) than the unemployed (actual family size=3.7; and gap=0.9). Cities provide a modernizing framework (higher education of both husband and wife, higher occupational, and economic status) in which the urban working woman operates. Labor force participation is not of much consequence for the rural woman engaged in low status occupations and constrained by poor economic conditions. Once again, as with the family status, more pronounced differences exist in fertility achievements than in opinions.

In short, distinctions in the rural and urban patterns indicate that improvements in the socioeconomic status of women could be achieved in the process of modernization. Such improvements also seem effective in reducing fertility at the normative and behavioral levels.

### Intervening Demographic Characteristics

This set of intervening variables includes two factors that may influence fertility both at the normative and quantitative levels. Age at marriage, the first variable, quantitatively affects fertility by determining the number of childbearing years. As an intervening variable in the modernization-fertility relationship, age at marriage becomes a medium through which educational and occupational statuses of women affect fertility.

### Wife's Age At Marriage

While socioeconomic status can be considered an index of primary modernization, age at marriage is an index of early secondary modernization since it is improvements in the social and economic status of women that tend to postpone marriages. Differences among the rural and urban areas in women's age at marriage indicates that not only are the cities characterized by a higher age at marriage, but also a wider range in marriage ages than the rural areas (Table 14). Larger variations in age at marriage adds another dimension to the transitional nature of cities.

Further specification of the modernization-age at mar-

riage relationship is possible in the analysis of the inter-relationships between the socioeconomic status of the wife and her age at marriage. As expected, the higher the educational and occupational status of the respondent, the higher is her age at marriage (Tables 9, 10). There are no differences between the cities and villages in the effect of education on age at marriage. Even in the traditional rural structure, higher education postpones age at marriage, partly explaining the modernizing effects on rural fertility. On the other hand, it is only in the cities that working women have significantly higher age at marriage (mean=22.8) than the unemployed women (18.8). Differences in age at marriage among women in higher and lower status occupations are also more pronounced in the cities. Rural areas are characterized by a pattern of early marriage among its women (Table 14) as well as by a traditional occupational structure. As noted earlier, while a larger percentage of rural than urban women were in the labor force, a majority of the former were engaged in lower status jobs. These factors may explain the absence of significant differences in age at marriage among working and non-working rural women and the weaker rural correlations between age at marriage and wife's work status.

There is a close similarity between the impact of the family's and the wife's socioeconomic characteristics on her age at marriage (Tables 9, 10). Two such similarities evident in this analysis are: higher socioeconomic status of

the family is associated with higher age at marriage; and higher status operates as a modernizing agent not only in the cities, but even in the traditional rural context. However, correlations between family's socioeconomic status and age at marriage are stronger in the rural areas indicating a greater disparity between higher and lower status rural families than urban families. Although this pattern does not fit in with the thesis of the transitional nature of cities versus the more homogenous structure of the rural areas, the weaker urban correlation suggests the facilitating influence of the cities in secondary modernization. More specifically, women from urban families with low socioeconomic status tend to marry later than their rural counterparts. At the same time, improvements in the rural family's socioeconomic status is as strongly associated with higher age at marriage for their women as for their urban counterparts.

In order to complete the analysis of the extent of secondary modernization of the sample, it is necessary to relate wife's age at marriage to the background variables. The absence of socioeconomic differences (both family's and respondent's) between the two religious groups is carried over into the (lack of) religion-age at marriage relationship too. In contrast, caste differences in age at marriage may be traced back to the different socioeconomic statuses of the upper and lower castes (Table 17). Families and respondents of the upper caste tend to have higher socioeconomic status leading to higher age at marriage of the women

TABLE 17  
MEANS AND RESULTS OF ANOVA ON WIFE'S AGE AT MARRIAGE  
BY CASTE AND AREA OF RESIDENCE<sup>1</sup>

Caste	Area of Residence	Mean Age at Marriage					
		General	( N )	Rural	( N )	Urban	( N )
Brahmin		19.8 <sup>c</sup>	(60)	18.6 <sup>c</sup>	( 5 )	19.9 <sup>a</sup>	(55)
Nair		19.6	(162)	19.2	(67)	19.9	(95)
Ezhava		19.1	(156)	18.6	(82)	19.7	(74)
Scheduled Caste		18.6	(122)	18.9	(39)	18.5	(83)
Marthomite/Jacobite		22.3	( 9 )	. . .	( 0 )	22.3	( 9 )
C.S.I.		18.0	( 2 )	18.0	( 2 )	. . .	( 0 )
Nadar Christian		18.1	(20)	18.1	(19)	18.0	( 1 )

<sup>1</sup>a = <.001 level of significance.  
c = <.05 level of significance.

in the cities. But caste disparities in age at marriage are not as marked in the rural areas. A plausible explanation may lie in the economic component of the caste-socioeconomic status association in the rural area. There were no significant differences among the rural caste groups in their economic status (Table 15). Given the relatively low standards of living and the difficulty in obtaining a number of modern goods in the rural areas, both the husband and wife would have to work to afford some of them. But the upper caste woman generally does not work and even though the lower caste woman works, both she and her husband are engaged in lower status jobs. Thus, the weaker caste differences in age at marriage may be a function of the lack of economic differences among the rural castes. Caste distinctions are also not too pronounced in the rural areas leading to the similarities in age at marriage among the rural castes.

Finally, no significant changes are evident in the age at which older and younger cohorts of women in the sample were first married (Tables 9, 10). This could also be linked back to the lack of age differences in their respective socioeconomic status.

Having established the positive relationship between socioeconomic modernization and wife's age at marriage, it is necessary to assess the latter's role in influencing fertility (Tables 9, 10). As expected, a woman who married later generally has a smaller ideal and actual family size, and a smaller gap between the two in both the cities and the

rural areas. The similarity in the strength of the rural and urban relationships of age at marriage with ideal and actual family size, despite the smaller age at marriage range in the rural areas, points out another traditional pattern among rural women. Rural women who marry early idealize and have larger families compared to the urban women who marry early. Moreover, continuing the trend noticed in the case of both the family's and the respondent's socioeconomic status, age at marriage distinctions in actual family size are stronger than distinctions in ideals possibly due to the small variations in the ideal family size. Raising the age at marriage of women in India, thus, can be an effective tool in achieving fertility declines both directly and indirectly as a consequence of improved socioeconomic status.

### Infant Mortality

Extent of infant mortality experienced by a family is the second demographic variable in the model. Like age at marriage, it is not only an index of secondary modernization, but it also can directly influence fertility. Two types of effects can be hypothesized: a quantitative relationship in which extent of infant mortality determines the number of surviving children a couple has; and a motivational relationship where it influences the couple's desire for having children. The index is operationalized as the percentage of all pregnancies that have been spontaneous



abortions, still births, and deaths of infants, four years and below.

Infant mortality viewed as an index of modernization implies that as a society progresses, the extent of infant mortality experienced by families can be expected to decrease. Though rural and urban areas, representing traditional and modern contexts, do not differ significantly in their infant mortality (Table 14) the intervening variables--socioeconomic status characteristics, age at marriage, and the background variables--are significant determinants of fertility within each area.

In the cities, higher social status of the husband, measured by his education and occupation, is significantly associated with lower mortality (Tables 9, 10). More efficient health care and improved sanitation facilities are available in the cities than in the rural areas. But in these modernizing cities, it is the husband or the head of the household who generally initiates and maintains contacts with non-familial institutions, such as the hospital; hence the relevance of husband's status to urban infant mortality. Higher education of the husband may represent health care values, such as beliefs in preventive care and in modern systems of medicine that are more easily available in the cities. Further, since most of the urban wives do not work, their husband's occupational status will determine the family's accessibility to modern health care.

On the other hand, it is the wife's characteristics--

-her education, her age at marriage, and her age at the time of the interview--and the modern items index representing the economic status of the family as a unit that are relevant correlates of rural infant mortality. In the traditional rural society where familial roles are segregated, childbearing and childcare are relegated primarily to the wife. Improvements in the rural woman's status, therefore, tend to be associated with more efficient use of health care and ultimately lower infant mortality. Moreover, with the meager health services, poor living conditions, and generally low socioeconomic status in the rural areas, the economic means of a family (modern items index) will determine whether it can afford immediate treatment and care either in the rural area itself or in the nearby city.<sup>7</sup> Finally, older women and those who married early have experienced longer periods of childbearing and, therefore, more pregnancies. The possibility that such women have also experienced higher infant mortality in the rural areas than found in the city is explained by the poorer health care and economic conditions in the villages.

Analysis of the relationships between infant mortality and the family size variables will help specify further the impact of modernization on infant mortality and ultimately fertility itself (Tables 9, 10). It may be hypothesized

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<sup>7</sup>Economic status was a stronger correlate of rural actual family size too.

that the higher the infant mortality experienced, the larger the family size idealized. Conversely, as the society progresses and rates of infant mortality decrease, smaller families would be preferred. Lower infant mortality could also be expected to motivate couples to have fewer children and consequently have smaller gaps between their ideals and actuals. A purely quantitative relationship, however, could reverse the direction of the relationship: a higher rate of infant mortality would result in fewer surviving children. As per the data, only actual family size and, therefore, the gap between ideal and actual family size are influenced by infant mortality in the cities, while the direction of the relationship ( $-.14$ ) indicates a quantitative association. This is further supported by the absence of the influence of infant mortality on ideal family size, the motivational aspect of family size.

In the initial stages of modernization, reductions in infant mortality may have a quantitative effect on fertility. Only when a certain threshold level of modernization has been crossed and substantial reductions in infant mortality have been achieved, will its effects be felt at the motivational level. Kerala's modernization and infant mortality, which although the lowest in India in 1971 at about 51 per 1000 (United Nations, 1975: 134), are not sufficient to have motivational impacts on fertility. In the rural areas where modernization is yet in its early stages, infant mortality does not have much influence. Even the quantita-

tive effect of infant mortality, therefore, will not be evident until a certain threshold level of modernization (as in the cities) has been attained. Results of the analysis of infant mortality, viewed as an index of modernization, fits the transitional nature of India's modernization.

### Social Psychological Characteristics

#### Conjugal Role Relationships

Another medium through which the relationship between modernization and fertility can be specified is the social psychological level. Modernization influences fertility through the values, attitudes, and capabilities that individuals acquire in the context of development. A shift from an attitude of resignation to a sense of control over one's life, including the number of children born to a couple and reflected in active decision making are two examples of such modern attitudes. Flexibility of role prescriptions, especially in the family and the ability of the couple to interchange roles are yet other modern traits. A traditional conjugal role pattern is characterized by division of labor where the husband performs the male jobs of breadearning and decision making and the wife, the household tasks. In contrast, modern conjugal role relationships reflect joint participation in interchangeable functions and decision making (Bott, 1971: 53). The modern woman would also have a strong interest against a large family which would conflict with her role obligations outside the home. Therefore, families

where the wife participates in decision making and where there is communication, discussion, and sharing between the couple will succeed in limiting their family size.

As discussed in Chapter III, conjugal role relationship is a cumulative index of seven individual dimensions with a higher score indicating greater jointness in relationships.<sup>8</sup> Consistencies in the indices are evident in the significant positive correlations among the seven indices (Table 18). In other words, joint participation in decision making, in dealing with outsiders, and in religious activities is associated with more sharing, lesser disagreements, greater tendency to resort to discussion and compromise in the event of disagreements, and to contain solving disagreements within the family.

If role relationship is an index of advanced secondary modernization, significant differences may be expected between rural and urban couples in the nature of their respective role relationships (Table 19). Urban wives do participate jointly with their husband to a more significant extent than their rural counterparts. Extent of joint participation in religious activities is one of the three scales that does not differentiate the rural and urban couples. Hinduism (the majority religion in the sample) is an individualized religion which may explain the infrequency of

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<sup>8</sup> A detailed description of the seven indices is available in Appendix A.

TABLE 18

CORRELATIONS AMONG THE ROLE RELATIONSHIP INDICES<sup>1,2</sup>

ROLE RELATIONSHIP INDICES	Decision Making	Sharing	Outsider	Religious Participation	Extent of Disagreement	Outcome of Disagreement	Solving Disagreements
Decision Making		.65 <sup>a</sup>	.76 <sup>a</sup>	.31 <sup>a</sup>	.57 <sup>a</sup>	.50 <sup>a</sup>	.36 <sup>a</sup>
Extent of Sharing			.67 <sup>a</sup>	.43 <sup>a</sup>	.61 <sup>a</sup>	.49 <sup>a</sup>	.36 <sup>a</sup>
Dealing With Outsiders				.31 <sup>a</sup>	.56 <sup>a</sup>	.45 <sup>a</sup>	.32 <sup>a</sup>
Religious Participation					.35 <sup>a</sup>	.24 <sup>a</sup>	.20 <sup>a</sup>
Extent of Disagreements						.42 <sup>a</sup>	.46 <sup>a</sup>
Outcome of Disagreements							.27 <sup>a</sup>
Pattern of Solving Disagreements							

1 a = &lt; .001 level of significance

2 N = 540

TABLE 19

MAXIMUM, MINIMUM, AND MEAN SCORES ON THE ROLE  
RELATIONSHIP INDICES BY AREA OF RESIDENCE<sup>1</sup>

Role Relationship Indices	Maximum-Minimum	Rural $\bar{X}$ (N = 214)	Urban $\bar{X}$ (N = 326)
Decision Making	55 - 0	32.3	39.10 <sup>a</sup>
Extent of Sharing	55 - 11	26.5	29.2 <sup>a</sup>
Dealing with Outsiders	30 - 5	16.2	19.3 <sup>a</sup>
Religious Participation	18 - 0	10.8	11.0
Extent of Disagreements	42 - 6	32.6	34.5 <sup>b</sup>
Outcome of Disagreement	4 - 1	1.8	1.9
Pattern of Solving Disagreements	7 - 1	6.0	6.2
CRR (Composite)	211 - 24	126.2	141.0 <sup>a</sup>

- 1 a = Rural-Urban differences significant at < .001 level  
 b = Rural-Urban differences significant at < .01 level  
 c = Rural-Urban differences significant at < .05 level

joint participation in religious activities. When religion is related to the different role relationship indices, the only significant difference between the two religious groups is on the religious participation index. Christian couples (mean=14.4) tend to participate in religious activities more jointly than the Hindus (mean=10.7) confirming the individualistic nature of Hinduism and the community orientation of Protestantism.

Another dominant pattern in the data on role relationships can be seen if the mean scores are compared to the maximum and minimum that could be attained theoretically (Table 19). In general, respondents tend to lean away from the jointness end of the continuum, a pattern that is consistent with the modernizing status of the society. The absence of significant differences between the rural and urban areas in the outcome of disagreements, once again, reflects the prevalence of traditional role structure in the family, even in the cities. Although the urban couples have a greater degree of concurrence (extent of disagreement index) than the villagers, in the event of disagreements the husband's opinion still prevails in both the cities and rural areas. On the other hand, in the villages as in the cities, disagreements tend to be solved predominantly within the conjugal family. Thus, some progress has been achieved in breaking the traditional segregated conjugal role structure, although it has not been substantial.

Differences in socioeconomic status between the urban



and rural areas are also seen in their influence on role relationships (Table 20). Higher socioeconomic status of the family and the wife is more conducive to jointness in role relationships while lower status is associated with segregated relationships. Higher educational, occupational, and economic status creates an egalitarian and open atmosphere where restrictive customs can be modified to suit the changing times. These adaptations seem to be accomplished more easily in the cities than in the rural areas as the stronger urban correlations between socioeconomic status and role relationships indicate. Another reason why the rural correlations are weaker is the traditional nature of its socioeconomic and conjugal role structure. In short, rural households with higher socioeconomic status are not markedly different from the rural households with lower status.

Peculiarities in the wife's labor force participation, especially in the rural areas, are reflected in their influence on role relationships. Wife's labor force participation is related to role relationships in the cities but not in the rural areas. (The average scores on the composite conjugal role relationships index is 155.9 for the working wife in the cities and 138.1 for the non-working wives in the cities.) Two aspects of the rural wife's socioeconomic status need to be recalled here: (1) although more rural women than urban women are employed, a majority of the rural women were in lower status occupations; (2) the lower the occupational status of the rural husband and the lower the

TABLE 20  
CORRELATIONS OF THE CONJUGAL ROLE RELATIONSHIP INDICES WITH SELECTED  
CORRELATES OF FERTILITY<sup>1,2</sup>  
(Rural)

	ROLE RELATIONSHIPS							
	Decision Making	Extent of Sharing	Dealing with Outsiders	Religious Participation	Extent of Disagreement	Outcome of Disagreement	Solving Disagreement	CRR (Composite)
Husband's Education	.20 <sup>b</sup>	.39 <sup>a</sup>	.22 <sup>b</sup>	.13 <sup>c</sup>	.27 <sup>a</sup>	.26 <sup>a</sup>	.22 <sup>b</sup>	.32 <sup>a</sup>
Husband's Occupation	.10	.29 <sup>a</sup>	.15 <sup>c</sup>	.15 <sup>c</sup>	.26 <sup>a</sup>	.22 <sup>b</sup>	.24 <sup>a</sup>	.24 <sup>a</sup>
Modern Items Owned	.24 <sup>a</sup>	.39 <sup>a</sup>	.25 <sup>a</sup>	.12 <sup>c</sup>	.26 <sup>a</sup>	.28 <sup>a</sup>	.18 <sup>b</sup>	.34 <sup>a</sup>
Respondent's Education <sup>3</sup>	.27 <sup>a</sup>	.48 <sup>a</sup>	.30 <sup>a</sup>	.18 <sup>b</sup>	.30 <sup>a</sup>	.39 <sup>a</sup>	.24 <sup>a</sup>	.41 <sup>a</sup>
Respondent's Occupation <sup>3</sup>	.24 <sup>c</sup>	.43 <sup>a</sup>	.41 <sup>b</sup>	.33 <sup>b</sup>	.39 <sup>b</sup>	.54 <sup>a</sup>	.34 <sup>b</sup>	.47 <sup>a</sup>
Age at Marriage	.18 <sup>b</sup>	.25 <sup>a</sup>	.16 <sup>b</sup>	.11	.19 <sup>b</sup>	.22 <sup>b</sup>	.07	.24 <sup>a</sup>
Infant Mortality	-.07	-.07	-.06	-.03	-.06	-.01	.05	-.07
Family Planning Attitudes	-.04	-.13 <sup>c</sup>	-.12 <sup>c</sup>	-.12 <sup>c</sup>	-.12 <sup>c</sup>	-.01	-.11	-.13 <sup>c</sup>
Parity of FP Initiation	-.21 <sup>b</sup>	-.27 <sup>a</sup>	-.23 <sup>a</sup>	-.24 <sup>a</sup>	-.27 <sup>a</sup>	-.20 <sup>b</sup>	-.16 <sup>b</sup>	-.31 <sup>a</sup>
Family Planning Effectiveness	.35 <sup>a</sup>	.44 <sup>a</sup>	.31 <sup>a</sup>	.37 <sup>a</sup>	.27 <sup>a</sup>	.34 <sup>a</sup>	.20 <sup>b</sup>	.45 <sup>a</sup>
Ideal Family Size	-.14 <sup>c</sup>	-.08	-.15 <sup>c</sup>	-.004	-.07	-.07	-.08	-.13 <sup>c</sup>
Actual Family Size	-.30 <sup>a</sup>	-.26 <sup>a</sup>	-.19 <sup>b</sup>	-.15 <sup>c</sup>	-.22 <sup>b</sup>	-.13 <sup>c</sup>	-.19 <sup>b</sup>	-.31 <sup>a</sup>
Gap	-.24 <sup>a</sup>	-.23 <sup>a</sup>	-.12 <sup>c</sup>	-.14 <sup>c</sup>	-.18 <sup>b</sup>	-.11	-.13 <sup>c</sup>	-.25 <sup>a</sup>

TABLE 20  
(Continued -- Urban)

	ROLE RELATIONSHIPS							
	Decision Making	Extent of Sharing	Dealing with Outsiders	Religious Participation	Extent of Disagreement	Outcome of Disagreement	Solving Disagreement	CRR (Composite)
Husband's Education	.32 <sup>a</sup>	.42 <sup>a</sup>	.40 <sup>a</sup>	.24 <sup>a</sup>	.41 <sup>a</sup>	.29 <sup>a</sup>	.35 <sup>a</sup>	.45 <sup>a</sup>
Husband's Occupation	.25 <sup>a</sup>	.35 <sup>a</sup>	.33 <sup>a</sup>	.23 <sup>a</sup>	.36 <sup>a</sup>	.21 <sup>a</sup>	.30 <sup>a</sup>	.37 <sup>a</sup>
Modern Items Owned	.30 <sup>a</sup>	.33 <sup>a</sup>	.35 <sup>a</sup>	.24 <sup>a</sup>	.39 <sup>a</sup>	.21 <sup>a</sup>	.32 <sup>a</sup>	.13 <sup>b</sup>
Respondent's Education	.40 <sup>a</sup>	.51 <sup>a</sup>	.47 <sup>a</sup>	.24 <sup>a</sup>	.44 <sup>a</sup>	.36 <sup>a</sup>	.34 <sup>a</sup>	.52 <sup>a</sup>
Respondent's Occupation <sup>3</sup>	.35 <sup>b</sup>	.43 <sup>a</sup>	.36 <sup>b</sup>	-.00	.35 <sup>b</sup>	.29 <sup>c</sup>	.31 <sup>b</sup>	.42 <sup>a</sup>
Age at Marriage	.23 <sup>a</sup>	.27 <sup>a</sup>	.27 <sup>a</sup>	.11 <sup>c</sup>	.12 <sup>c</sup>	.27 <sup>a</sup>	.16 <sup>b</sup>	.26 <sup>a</sup>
Infant Mortality	-.04	-.04	-.08	-.07	-.07	-.03	-.01	-.07
Family Planning Attitudes	-.21 <sup>a</sup>	-.28 <sup>a</sup>	-.27 <sup>a</sup>	-.13 <sup>b</sup>	-.23 <sup>a</sup>	-.09 <sup>c</sup>	-.28 <sup>a</sup>	-.28 <sup>a</sup>
Parity of FP Initiation	-.44 <sup>a</sup>	-.49 <sup>a</sup>	-.50 <sup>a</sup>	-.24 <sup>a</sup>	-.40 <sup>a</sup>	-.35 <sup>a</sup>	-.27 <sup>a</sup>	-.52 <sup>a</sup>
Family Planning Effectiveness	.43 <sup>a</sup>	.50 <sup>a</sup>	.52 <sup>a</sup>	.22 <sup>a</sup>	.45 <sup>a</sup>	.26 <sup>a</sup>	.31 <sup>a</sup>	.54 <sup>a</sup>
Ideal Family Size	-.01	-.20 <sup>a</sup>	-.10 <sup>c</sup>	-.06	-.21 <sup>a</sup>	-.15 <sup>b</sup>	-.11 <sup>c</sup>	-.14 <sup>b</sup>
Actual Family Size	-.29 <sup>a</sup>	-.40 <sup>a</sup>	-.39 <sup>a</sup>	-.19 <sup>a</sup>	-.35 <sup>a</sup>	-.25 <sup>a</sup>	-.23 <sup>a</sup>	-.41 <sup>a</sup>
Gap	-.31 <sup>a</sup>	-.31 <sup>a</sup>	-.36 <sup>a</sup>	-.15 <sup>b</sup>	-.25 <sup>a</sup>	-.18 <sup>a</sup>	-.17 <sup>b</sup>	-.35 <sup>a</sup>

1. a = <.001 level of significance; b = <.01 level of significance; c = <.05 level of significance
2. N - Urban = 326-305; Rural = 214-206
3. N in the case of wife's occupational status - Rural = 63-56; Urban = 59

family's economic status, the greater the tendency for the wife to be employed. Urban women's employment, on the other hand, is more a matter of choice than economic necessity. These differences in motivation combined with the wider range of occupations in which women are engaged may explain why women's labor force participation plays an important role in modernizing conjugal role relationships only in the cities. Yet, higher occupational status of rural women, when it is achieved, does lead to jointness in relationships which is significantly higher than lower status women and comparable to higher status urban women (Table 20) Socioeconomic modernization, thus, has its correlates in social psychological modernization, of which role relationships is one aspect.

Aside from its demographic impact on fertility, age at marriage could have social psychological effects too, especially through its influence on conjugal role relationships (Table 20). The strong positive correlations between socioeconomic status and age at marriage lend further credibility to this hypothesis. In other words, women with higher social status tend to marry late, to be more independent and less likely to let themselves be dominated by their husband. When the age at marriage is low, as in the traditional setup, the role relationships tend to be more segregated. Since the variation in age at marriage is typically greater in modernizing cities stronger urban correlations are to be expected. In the more traditional rural areas, in

contrast, where women generally get married at a relatively younger age, the respondents do not differ as much in their role relationships. Yet, as the significant rural correlations reveal, age at marriage does have its modernizing impact on role relationships. An example is the disagreement index where the rural correlation is stronger than the urban. In a culture (especially the rural) where age at marriage and the status of women are low, higher age at marriage, if it can be achieved, promotes lesser disagreement among the couples. Even in the rural areas, the potential for the spillover effects of modernization in one aspect into other aspects related to fertility does exist. To complete the description of the extent of social psychological modernization, it is also necessary to examine the influence of caste--an important feature of the Indian social structure--on role relationships and the trends in patterns in role relations over time.

When caste status is related to role relationships, the only index on which both the rural and urban castes differ among themselves is the religious participation index (Table 21). It is the religious aspect of caste that is reflected in the Christian caste groupings scoring higher on the scale than the Hindu castes. Further, while the urban castes differ only on the extent of sharing index, it is the disagreement index that is important among the rural castes. Sharing (indicating harmony in relationships) is a modern trait while disagreement (or family discord) is more typical

TABLE 21  
MEANS AND RESULTS OF ANOVA ON CONJUGAL ROLE RELATIONSHIPS BY CASTE AND AREA OF RESIDENCE<sup>1</sup>

AREA	Index of Role Relationships	Brahmin	Nair	Marthomites/ Jacobite	C.S.I.	Ezhava	Nadar	Scheduled Caste
General	Extent of Sharing	29.9	29.4	31.9	32.5	27.7	27.7	25.9 <sup>b</sup>
	Dealing With Outsiders	19.4	18.5	22.1	12.0	18.0	15.4	17.0 <sup>b</sup>
	Religious Participation	12.0	10.6	14.7	15.0	10.7	13.8	10.4 <sup>b</sup>
	Extent of Disagreement	35.6	35.0	33.6	37.0	32.9	35.2	31.9 <sup>b</sup>
	Outcome of Disagreement	2.4	1.9	2.2	2.0	1.7	2.2	1.8 <sup>b</sup>
	CRR (Composite)	143.6	138.6	156	138.5	133.4	133.7	127.3 <sup>c</sup>
Rural	N	(60)	(162)	(9)	(2)	(156)	(20)	(122)
	Religious Participation	8.2	10.8	—	15.0	10.6	13.7	9.6 <sup>b</sup>
	Extent of Disagreement	36.6	33.6	—	37.0	31.7	35.3	30.6
	N	(5)	(67)	(0)	(2)	(82)	(19)	(39)
Urban	Extent of Sharing	29.9	30.6	31.9	—	29.5	35	26.7 <sup>c</sup>
	Religious Participation	12.4	10.4	14.7	—	10.8	15	10.8 <sup>b</sup>
	N	(55)	(95)	(9)	(0)	(74)	(1)	(83)

1 b = p < .01; c = p < .05

of the traditional rural culture, especially the lower status cultures. On both indices, Christian castes are more joint in their relationships than the Hindu castes indicating that caste is not totally devoid of its religious connotation. Within each religious group, however, higher status is associated generally with joint role relationships, an expected pattern given their higher socioeconomic status. Nairs and Nadar Christians in the cities who have the highest scores are exceptions. The dominant caste status of the urban Nairs and the Anglican leaning of the Nadar Christians may explain their modern role relationships. Once again, the caste differentials in socioeconomic modernization are evident at the social psychological level too.

There are no differences between the older and younger couples in their role relationships in the urban areas, continuing the pattern discussed earlier of selective participation of the upper status groups in modernization trends. In contrast, though class and caste biases in modernization do exist, some modernization in role relationships has also occurred in the rural areas ( $r = -.16$ ). One factor responsible for this pattern is the closing of the age gap between the husband and wife in the rural areas over time. It is only in the rural areas that the age gap between the husband and wife is much smaller for the younger cohorts than for the older ( $r = .12$ ). In a culture where age and sex are important criteria for respect and authority, marriages in which the husband is much older than the wife tend to be

traditional, reflected especially in the subordinate status of women. The data indicate some improvement in women's status over time in the villages.

If the repercussions of social and economic modernization are felt in the area of conjugal role relationships, then modernization should have some effect on fertility orientations and actual fertility. Couples with joint role relationships will not only want smaller families, but will also have better success in limiting their achieved family size to their ideals (Table 20). Pearson correlations between role relationships and fertility variables indicate that women who are equal partners in the conjugal role relationships tend to idealize smaller families, actualize those smaller ideals, and consequently experience smaller gaps between their orientations and behavior. Further, respondents in joint role relationships do not differ from those in segregated relationships as systematically in their ideals as in their actual family size. This pattern provides further evidence for the general trend toward accepting the small family norm. In general, social psychological modernization does contribute to modernization of values and behavior.

Additional proof for this influence can be obtained by comparing rural-urban differences in the correlations. If modern role relations are effective in reducing fertility the urban correlations should be stronger than the rural. Urban respondents not only have higher average scores on the



role relationship indices but also vary more among themselves compared to the rural sample. While there is general support for this argument in the data on actual family size and the gap, certain differences exist in the case of ideal family size. Rural ideals can be differentiated only in terms of the respondent's status on two indices--decision making and dealing with outsiders--which are also more effective in the rural area than in the cities. The indices significant in the cities (all except decision making) deal with the husband and wife's participation in carrying out the family functions (behavior aspect of roles). Decision making involves verbal interaction between the husband and the wife. In the rural area, where women's status is generally low, ability to participate in decision making and dealing with outsiders may represent the starting point in the shift toward egalitarian relationships. When women enjoy a comparatively higher status, as in the cities, jointness in role relationships does not contribute to lower ideals unless there is a shift from verbal equality to equality in behavior. In general, the data on role relationships in the sample fit the modernization thesis and its effect on fertility.

#### Intervening Normative Family Size/Family Planning Indices

Thus far the analysis concentrated on the role of modernization in reducing fertility. Family planning--both at the normative and behavioral levels--forms the other aspect

of the problem and is the focus of the second part of the model. In fact, the family planning variables, since they directly impinge on fertility, bring the model closer to the problem of lowering family size. They are also a medium through which modernization affects fertility. Ideal family size, as noted in Chapter III, is one of the normative variables. The other normative variable included at this stage is the respondent's attitudes toward family planning.

#### Respondent's Attitudes Toward Family Planning

Favorable attitudes toward family planning methods is considered a basic prerequisite to the use of family planning. This intervening variable is measured at the ordinal level with the respondents' attitudes ranging from indispensable (value of 1) to totally opposed (value of 8).

Attitude to family planning is conceived as a consequence of modernization so that as the society develops family limitation methods will be perceived more favorably. If this is true, then, cities, with their higher levels of socioeconomic development should differ from the rural areas where development is comparatively limited. However, Chi square tests indicate no significant differences between rural and urban samples in their attitudes. Almost 50% of the respondents in both the rural and urban areas are favorable to using some method, while only about 10% in the rural areas and 15% in the cities are not favorable or totally opposed to it. The side effects of most methods

seem to dampen the enthusiasm of nearly a third of the respondents regarding family planning in both the samples. Religion and caste, the two other structural variables, also do not differentiate among the respondents' attitude to family planning. This general acceptance of the importance of family planning, irrespective of the socioeconomic development at the structural level, may be the result of the intense family planning program in Kerala, especially in its informational content.

It is also necessary to look at the individual level differences in attitudes within each area to determine whether socioeconomic distinctions exist. Since attitudes to family planning are influenced by modernization, it is logical to assume that as the social and the economic status of the families and of the women rise they tend to become more favorable to family planning (a modern attribute). Correlations between attitude to family planning and socioeconomic characteristics--both family's and the respondent's-- substantiate this argument (Tables 9, 10). These associations are also stronger in the cities with their transitional social and economic structures.

Analysis of the influence of the social psychological manifestations of modernization on attitudes to family planning also indicates that the more modern (joint) the respondent's role relationships, the more favorable is her attitude to family planning (Table 20). Wife's labor force participation is the only factor that is not significant,

probably due to the small proportion of working women in the cities and due to the lower status jobs of majority of rural women. Further, urban respondents with higher status differ more systematically in their attitudes from the lower status urban women compared to the rural variations (Table 10). This pattern, once again, indicates the transitional nature of the cities and the traditional status of the rural areas, particularly with regard to the lower status ruralites. Within this traditional context, however, rural respondents in higher status jobs, if they can achieve it, do have modern attitudes too.

These status variables affect fertility by influencing the motivations of individuals and couples. But age of the respondent, her age at marriage, and infant mortality, not only have motivational effects, but also have quantitative effects on fertility. For example, an older woman or a woman who married early can have more children because of her greater exposure to childbearing.<sup>9</sup> The quantitative reality of these three variables may explain why they are not significant differentiating factors in respondents' attitudes to family planning--a motivational factor (Table 10).

It was indicated in Chapter III that smaller family size norms can, theoretically, be viewed as an important

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<sup>9</sup>In fact, as will be shown in Chapter VII, these variables are significantly related to fertility even after the effects of the status variables are removed.

prerequisite for favorable dispositions to deliberate control of fertility behavior through the use of family planning. Women with small family size norms are more favorable to using birth control methods to limit their actual family size in both the cities and in the rural areas (Table 10). In short, there exists a congruence in the norms regarding family planning and a family size, which suggests the crystallization of modern attitudes, particularly under the influence of the family planning program.

What effects do these attitudes to family planning have on their actual fertility? Although rural women with small family size norms do favor using family planning to control fertility, these attitudes are not translated into practice (the non-significant rural correlation between family planning attitudes and actual family size ) probably due to the lack of opportunities and willingness to act on their attitudes. In contrast, the opportunities available in the cities and the motivation derived from their higher socioeconomic status may explain why urban women with modern family planning attitudes have smaller achieved families and gaps between ideal and actual family and vice versa. Despite these deviations, the general pattern that emerges from this analysis is consistent with the modernization thesis discussed thus far: there is a clear association between favorable attitudes to family planning and individual modernization on the one hand and fertility orientation and behavior on the other.

### Intervening Family Planning Usage Variables

This set of variables concerns the extent to which respondents have used methods of family planning and how effectively they have used them. Having established the modernizing influence of family planning attitudes on fertility, these indicators of the practice of family planning further specify this relationship. The first variable in this set is the parity at which the respondent started using a method.

#### Parity Of Family Planning Initiation

Parity of family planning initiation is measured as the birth after which the method was adopted. As with the other variables, the first step is to determine the influence of modernization on parity of family planning usage. Contrary to expectations, the traditional hypothesis that rural and urban areas will differ in the parity of family planning use of its members is not supported (Table 14). That rural and urban areas are different on none of the family planning variables--attitude to family planning and parity of initiation--is further evidence of the effectiveness of the family planning program, irrespective of the structural levels of development. However, since these areas differ in their levels of modernization of its members, it can be expected that individual modernization will have an influence on parity.

The socioeconomic status of the respondent and her

family are significant predictors of the parity at which a woman used birth control for the first time (Tables 9, 10). As expected, higher educational and occupational status of the husband and wife and higher economic status are associated with earlier initiation of birth control. Since rural and urban areas differ in their earlier socioeconomic distributions, socioeconomic variations in parity of family planning usage within these areas may be different. Analysis of the data support this expectation; but unlike the preceding sets of variables, rural correlations are stronger than the urban. Despite the wider range of the urban socioeconomic distribution, urban respondents do not differ among themselves as much as the rural respondents. Selective acceptance of the family planning program by higher status women is more pronounced in the rural areas. Alternately, lower class rural women initiated family planning much later in their pregnancy history compared to their urban counterparts. Cities provide greater freedom and opportunities to its residents, especially the women, which may explain why lower status urban respondents are comparatively more modern in their family planning usage than the rural women with similar status. Primary modernization tends to be more of an equalizing force in the cities in influencing the availability and access to different family planning methods.

Peculiarities in the labor force participation of women in the sample is reflected on parity of family plan-

ning usage (Table 22). In the cities, as might be expected, working women started using birth control one parity lower than the non-workers. On the contrary, rural non-workers started using birth control earlier than the rural workers, a pattern that may be explained if it is remembered that a majority of rural women work in lower status occupations. Despite these deviations, rural/urban differences in modernization are generally reflected in their family planning status too.

It is also necessary to move further in the model to examine the implications of demographic modernization on parity of family planning initiation (Tables 9, 10). The data indicate that women who marry earlier tend to postpone using family planning methods compared to those who marry later. Unlike primary modernization (socioeconomic), once early secondary modernization has been achieved, even if it is only among certain segments in a society, it does have an equally strong effect on parity of family planning initiation in both the cities and the rural areas.

Social psychological modernization (role relationships), in contrast, has a stronger correlation with parity of family planning initiation in the urban areas (Table 20). Aside from its intervening influence in the socioeconomic status-practice of family planning relationship, role relationships can be expected to have a direct influence on parity of initial family planning use. Joint role relationships, as the data suggest, provide an advantageous



TABLE 22

MEANS AND RESULTS OF ANOVA ON PARITY OF FAMILY  
 PLANNING INITIATION AND FAMILY PLANNING EFFECTIVENESS  
 BY WIFE'S LABOR FORCE PARTICIPATION AND AREA OF RESIDENCE<sup>1</sup>

	Wife's Labor Force Participation	General (N)	Rural (N)	Urban (N)
Parity of Family Planning Initiation	Wife Employed	2.93 (120)	3.7 (63)	2.12 <sup>a</sup> (57)
	Wife Unemployed	3.3 (420)	3.0 (151)	3.5 (269)
Family Planning Effectiveness	Wife Employed	2.6 (120)	2.2 (63)	3.15 <sup>b</sup> (57)
	Wife Unemployed	2.5 (420)	2.3 (151)	2.6 (269)

a = p < .001

b = p < .01

c = p < .05

framework for the initiation of family planning early in the marriage. Discussions about family planning are still socially taboo and the women still play a predominantly subordinate role in the Indian family. Under these conditions, unless the role relations are relatively joint, early initiation of family planning will be difficult both for the husband and the wife. Given the direct influence of role structures in family planning usage and the wider range in role relationships available in the cities, the stronger urban correlations are to be expected.

Another aspect of the traditional rural structure is also evident in the association of infant mortality and ideal family size with the initiation of family planning (Tables 9, 10). As the stronger positive rural correlations suggest, rural women who have experienced high infant mortality and who idealize larger families postpone using birth control much more than their urban counterparts. Traditional rural respondents, especially, seem to desire to insure that they have a sufficient number of children to make up for the loss through child mortality and to realize their family size norms.

On the other hand, correlations between attitudes to and use of family planning are weaker in the rural areas than in the cities suggesting inconsistencies in rural norms and behavior. Urban respondents who are favorably disposed to use of family planning translate these values into practice. The comparatively greater inconsistencies between

norms and behavior in the rural areas indicate that even if values have been modernized to the extent found among the urbanites, partly as a result of the family planning program, they have yet to govern behavior. At the same time, women who have used methods such as sterilization, IUDs, and pills early in the marriage may develop unfavorable attitudes due to the side effects of these methods, thereby weakening the correlations in both the rural and urban areas.

Before the importance of parity in determining family size is assessed, another set of relationships need to be analyzed. It is necessary to discuss how the background variables--age of the respondent, religion, and caste--influence parity. The importance of an effective family planning program can be seen in the cohort differences in the parity of family planning use (Tables 9, 10 ).<sup>10</sup> Older respondents tend to have initiated use of some method of birth control later in their childbearing history than the younger respondents. Yet, the older and younger cohorts do not differ in their socioeconomic and demographic status. This pattern may be attributed partly to the role of the organized family planning program initiated on a large scale since the early seventies in creating opportunities for

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<sup>10</sup> Again, as mentioned in the beginning of this chapter, the role of family planning programs in influencing family planning practices can only be deduced directly from the literature.

exposure of the younger cohorts earlier in their pregnancy histories. Moreover, it is the traditional status of the older rural women reinforced by the low socioeconomic development in rural areas and the lack of early exposure to family planning that is reflected in the stronger rural correlations.

There were no significant differences among the religious groups in their attitude to family planning. But they can be differentiated in their family planning behavior, at least in the cities. As might be expected on the basis of their relatively higher socioeconomic status, urban Christians tend to be more modern in family planning usage (mean parity=1.8) than the Hindus (3.27). Caste status of the respondents, as in the case of the earlier family planning variables, is not a significant differentiating element in either the rural or urban areas. The practical ethic of the Protestants and the Western influence in their religion, irrespective of their caste status, may be relevant factors in the religious distinctions in the practice of family planning.

If parity of birth control initiation is an index of modernization and the effectiveness of the family planning program, it may be expected to affect family size too (Tables 9, 10). As hypothesized, women who initiated birth control later tend to have significantly more children than those who started planning their families early in the cities and in the rural areas. Of all the indices of modern-

ization and family planning considered thus far, the timing of family planning use is the most influential in determining actual fertility. Further analysis will, however, be presented in the later chapters to determine the exact nature of its impact on actual family size. Yet, the strength of the correlation suggests that early initiation of birth control may be one of the most effective ways of controlling fertility. In the case of the influence of parity of family planning use on the gap between the ideal and actual family size, the patterns can, once again, be explained with the help of its component parts, ideal and actual fertility. For example, the larger gaps between the ideal and actual fertility of late users of family planning is due to their actual family size far exceeding their lowered ideals.

In general, controlling pregnancies at earlier stages in the pregnancy history does reduce the achieved family size and the gap between ideal and actual considerably. Thus, early use of family planning plays an important role along with socioeconomic development in achieving fertility reductions.

#### Family Planning Effectiveness

It is not just the timing of birth control use that is important in its relationship to family size, but also the general effectiveness with which the methods are used and pregnancies planned. Modernization could be expected to

increase individual's effectiveness in planning their families and consequently realizing their ideals. In order to operationalize family planning effectiveness, each pregnancy is classified as (a) planned, (b) accidental, (c) unintended (where some method was being used but had to be stopped for various reasons), (d) unintended, yet no method was used, and (e) 'never-thought-of-it' pregnancies. The index of family planning effectiveness is defined as the weighted average of the proportion of pregnancies that belong to the five types. According to the formula, which is stated as  $((a*5)+(b*4)+(c*3)+(d*2)+(e*1)/\text{total pregnancies})$ , a higher score on the index implies greater effectiveness while a lower score represents lesser effectiveness.

Family planning effectiveness can be discussed in the context of modernization before its influence on fertility is analyzed. Unlike the other family planning variables, when rural and urban differences in family planning effectiveness are analyzed, respondents in the cities have significantly higher mean effectiveness than the rural areas (Table 14). This pattern suggests that if the effective planning of the entire childbearing history is to be achieved, an organized family planning program in itself is not sufficient; socioeconomic modernization is an important catalyst to the success of the program.

Religious and caste differences in family planning effectiveness also substantiate the influence of moderniza-

tion on the success of the program (Table 23). It is only in the cities that Christians and higher castes are significantly more effective in planning their pregnancies than Hindus and the lower castes respectively. It is also in the cities that Christians and higher castes have significantly higher status than the Hindus and lower castes respectively.

Cohort differences in family planning effectiveness exist only in the rural area where the older respondents tend to be less effective in planning their families (Tables 9, 10). In this case, two factors reinforcing each other may explain the traditional position of older rural women in their planning effectiveness. Rural areas were and still are the least developed socioeconomically. Further, older rural women lacked the opportunities and exposure to family planning knowledge that younger rural women have had since the family planning program was initiated when the older women were well into their family formation histories. Thus, it can be argued that family planning is most effective only in the context of a certain level of socioeconomic development.

Additional support for this thesis is available in the influence of the individual's socioeconomic status on planning effectiveness (Tables 9, 10). Irrespective of whether the husband's or wife's status is used, higher status couples are more effective in their family planning (as in the parity of family planning initiation) than the lower status couples. In the cities where the general level of modern-

TABLE 23

MEANS AND RESULTS OF ANOVA ON FAMILY PLANNING EFFECTIVENESS  
BY RELIGION, CASTE, AND AREA OF RESIDENCE<sup>1</sup>

	RELIGION				CASTE STATUS				
	Hindu	Protestant	Brahmin	Nair	Marthomite/ Jacobite	C.S.I.	Ezhava	Nadar	Scheduled Caste
General	2.5 (509)	3.1 <sup>c</sup> (31)	2.7 (60)	2.7 (162)	3.6 (9)	2.2 (2)	2.4 (156)	2.7 (20)	2.3 <sup>b</sup> (122)
Rural	2.2 (194)	2.7 (20)	2.2 (5)	2.6 (67)	— (0)	2.2 (2)	1.9 (82)	2.6 (19)	2.3 (39)
Urban	2.6 (315)	3.8 <sup>b</sup> (11)	2.8 (55)	2.8 (95)	3.6 (9)	— (0)	2.8 (74)	4.7 (1)	2.3 <sup>c</sup> (83)

1. a = p < .001  
b = p < .01  
c = p < .05



ization is higher, the differences among the higher and lower status couples are not very pronounced. But, rural respondents with lower status are the least effective leading to the stronger rural correlations. The lower socioeconomic status of the couples hinders efficient utilization of the family planning program in the rural areas. More specifically, a fatalistic view of life and lack of planning, characteristic of the traditional agrarian society, is reflected in their family histories too. On the other hand, effectiveness of the higher status rural couples may be attributed to the sense of control over one's life and of planning and the desire and potential for improvement that higher education and occupation (especially independent of the agrarian economy) imbibe in them. This is also seen in the influence (or the lack of it) of wife's labor force participation on family planning effectiveness in the rural areas where the majority of the women are in the lower status occupations.

Socioeconomic differentials in age at marriage can also be seen in family planning effectiveness (Tables 9, 10). Respondents who marry later tend to plan their families more effectively than those who marry at a younger age. Women who marry when they are older have the opportunities for higher education and time to mature in the role of a daughter before assuming an additional role, that of the wife. As a result, such women would have more defined attitudes and plans for their family life which may partly

explain their effectiveness in family planning. With the second demographic variable, however, the differences are not significant (Tables 9, 10). Two contradictory influences may provide an explanation. On the one hand, modernization which results in lowered infant mortality will also enhance family planning effectiveness resulting in a negative relationship between infant mortality and family planning. On the other hand, women who have experienced more infant mortality would actively desire and plan their next pregnancies to replace the losses. This argument, contrary to the first, would lead to a positive relationship between infant mortality and effectiveness. Both these patterns probably coexist in this sample, neutralizing each other and leading to the insignificant correlation between infant mortality and family planning effectiveness.

Role relationships is another influential factor in family planning effectiveness (Table 20). Couples who participate jointly in familial responsibilities, including family planning, seem to be more effective in using contraception and planning their families. That this relationship is stronger in the urban areas may be attributed to the wider range in the jointness-segregation continuum available in the cities and the clustering of rural couples away from the joint relationships.

Given the role of modernization in effective planning, it is necessary to analyze the latter's relationship to other family planning issues (Tables 9, 10). In both the

rural areas and the cities, women who idealize large families tend to have been less effective in planning their families. This negative relationship between family size norms and family planning effectiveness, once again, suggests a congruence between fertility values and family planning behavior that can help actualize these fertility values.

Respondents who are more effective in planning their families also have favorable attitudes toward using contraception and started using some method earlier than the less effective couples, both in the rural and urban areas. Further, respondents who are more effective planners have achieved their smaller ideals, and consequently have smaller gaps. It is the combined effect, once again, of the higher status and urban location of those urban women with high effectiveness and small families that sets them apart (stronger urban correlations) from the rest. Aside from socioeconomic, demographic, and social psychological modernization, early and effective use of family planning is, thus, a valuable tool in achieving fertility declines.

#### Sterilization Status

Whether the respondent or her husband has undergone sterilization is the last variable in the set. Sterilization is similar to, yet very different from, family planning effectiveness that was discussed in the previous sections. While sterilization is the most effective way of avoiding future births, it gives no indication of the status of plan-

ning effectiveness as the couple moves along their pregnancy histories. Specifying the socioeconomic, demographic, and family size characteristics of the sterilized and non-sterilized couples would have policy implications, especially in identifying the target populations for such a specific program.

Sterilized respondents generally tend to be more traditional than the non-sterilized in the cities (Table 24). They are of lower castes, are younger, of lower socioeconomic status,<sup>11</sup> were married at a younger age, have more segregated relationships, are more unfavorable to family planning use, started using family planning later, are less effective in planning their pregnancies on the whole, and have higher ideals and larger actual families, and larger gaps between their ideals and actuals.

Accordingly, the conditions under which sterilization is resorted to may be specified. Sterilization is used when the respondents face a longer period of childbearing. They are generally poorer so that they cannot afford to risk hav-

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<sup>11</sup>The Chi-square and gamma values for the relationship of caste and husband's occupational status to sterilization in the urban areas are as follows:

Caste and Sterilization:	Chi-square = p .001
	Gamma = .39

Husband's occupation and sterilization	Chi-square = p .001
	Gamma = -.36

TABLE 24

MEANS AND RESULTS OF T-TEST FOR SELECTED MODERNIZATION AND  
FAMILY PLANNING INDICES BY STERILIZATION STATUS AND AREA OF RESIDENCE<sup>1</sup>

	General		Rural		Urban	
	Unsterilized	Sterilized	Unsterilized	Sterilized	Unsterilized	Sterilized
Husband's Age	43.1	40.6 <sup>a</sup>	40.9	38.1 <sup>a</sup>	44.4	42.3 <sup>b</sup>
Wife's Age	35.7	33.5 <sup>a</sup>	34.0	31.5 <sup>a</sup>	36.8	34.7 <sup>a</sup>
Husband's Education	9.2	7.2 <sup>a</sup>	6.9	5.3 <sup>b</sup>	10.8	8.4 <sup>a</sup>
Modern Items Owned	2.6	1.8 <sup>a</sup>	1.0	0.8	3.6	2.5 <sup>a</sup>
Wife's Education	7.7	6.3 <sup>a</sup>	5.7	5.4	9.0	6.9 <sup>a</sup>
Age at First Marriage	19.8	18.7 <sup>a</sup>	19.1	18.5	20.3	18.8 <sup>a</sup>
Infant Mortality	13.2	9.8 <sup>c</sup>	11.7	11.3	14.2	8.8 <sup>b</sup>
CRR	139.5	131.1 <sup>b</sup>	127.6	124.9	147.4	135.2 <sup>a</sup>
Son-Preference	8.8	13.2 <sup>b</sup>	10.6	14.7	7.6	12.1 <sup>c</sup>
Parity of FP Initiation	3.0	3.4	3.2	3.1	2.9	3.5 <sup>c</sup>
FP Effectiveness	2.7	2.3 <sup>b</sup>	2.4	2.2	2.9	2.4 <sup>b</sup>
Ideal Family Size	2.8	2.9 <sup>c</sup>	2.9	2.9	2.7	2.9 <sup>c</sup>
Actual Family Size	3.3	3.7 <sup>b</sup>	3.5	3.5	3.2	3.8 <sup>a</sup>
Gap	0.6	0.8	0.6	0.6	0.5	0.9 <sup>c</sup>
N	265-261	275-271	105-104	109	160-157	166-164

1. a = p < .001  
b = p < .01  
c = p < .05

ing more children, especially since they have an ineffective planning history. Their segregated relationships may partially explain their ineffectiveness and delay initiation of birth control. Lack of knowledge about temporary methods in general and lack of joint determination in using them consistently can further contribute to their poor planning status. Further, they not only prefer larger families, but also have exceeded their ideals and sterilization is an effective and easier method of controlling their family size.

Two additional characteristics need special consideration--infant mortality and attitude to family planning. Respondents who are sterilized have experienced lesser infant mortality than the non-sterilized. The latter, consequently, may fear the possibility of further deaths and their inability to replace them if sterilization is adopted. With regard to the conservative attitude of sterilized women to family planning (Table 25), two explanations are possible. They may be opposed to temporary methods, like the pills or IUDs, and favor sterilization. On the other hand, it could be that, though they have undergone sterilization, the side effects (both physical and psychological) may cause them to regret it. In general, sterilization seems to appeal to the lower stratum of the society in Kerala.

However, this is true only when the general level of development is fairly high as in the cities. Sterilized respondents in the rural areas are significantly different

TABLE 25

DISTRIBUTION OF FAMILY PLANNING ATTITUDES BY  
STERILIZATION STATUS AND AREA OF RESIDENCE

Area Of Residence	Family Planning Attitudes/ Sterilization Status	Favorable	Indifferent	Unfavorable	Summary Statistics
General	Unsterilized	54.4%	65.4%	40.6%	$\chi^2 = < .01$
	Sterilized	45.6	34.6	59.4	Gamma = .24
	N	100% (285)	100% (26)	100% (229)	
Rural			NS		
Urban	Unsterilized	55.0%	68.4%	39.0%	$\chi^2 = < .01$
	Sterilized	45.0	31.6	61.0	Gamma = .27
	N	100% (171)	100% (19)	100% (136)	

from the non-sterilized only in their age and family's socioeconomic characteristics. In other words, rural women, like their urban counterparts, undergo sterilization at a younger age and their families are poorer. Thus, when the level of modernization is low, sterilization is more uniformly acceptable.

This analysis suggests different family planning patterns in the modern and the traditional milieux. In the traditional context, respondents generally do not plan their pregnancies until they seek an irreversible solution in sterilization. On the other hand, respondents in the modern context, especially the upper status women, start planning their families early and use temporary methods more effectively to maintain smaller families. These patterns imply the possible variations that may be required in the family planning program content for different audiences.

### Conclusion

Preliminary data analysis delineates two interrelated dimensions of the population problem--modernization and family planning. As expected, rural and urban areas are distinct in their modernization. Cities, represent a higher position on the modernizing continuum, irrespective of whether the indices used are socioeconomic, demographic, or social psychological. At the same time, cities in Kerala appear to be in a state of transition to modernized societies in contrast to the traditional nature of the villages.



But the rural and urban areas cannot be differentiated on any of the family planning factors, including fertility norms and behavior. This pattern could be attributed to the role of family planning program in the state. However, modernization and the family planning program are not independent solutions to the population problem. Within both the cities and villages, substantial modernization-fertility differentials exist such that individuals who are modern on the socioeconomic, demographic, and social psychological dimensions are modern in their fertility orientations, family planning behavior and actual fertility. Additional proof for the relevance of modernization to the success of family planning is available in the greater effectiveness of urban couples. In short, family planning cannot be totally effective unless it is accompanied by modernization.

Another pattern evident in this initial analysis concerns the relationship between the three family size indices: ideal family size, actual family size, and the gap between the two. There seems to be a general convergence towards the small family norm in the entire sample possibly due to the impact of the family planning program, although some status differences still remain. But wider disparities in actual family size across different status groups (defined in terms of both modernization and family planning) exist. Therefore, the status differences in the gap between the ideal and actual family size are mainly a reflection of

the variations in actual family size.<sup>12</sup> Despite the increased popularity of the small family norm among the lower status groups, their actual family size exceeds their ideals. Apart from the fact that the family planning program has not been in effect long enough to affect changes in actual family size, these discrepancies have a more basic implication. If modern family size norms are to be translated into practice and the gap between the norm and behavior closed, an effective family planning program has to be evolved in the context of modernization. That some status differences still exist even in the ideal family size lends further support to the complementarity of modernization and family planning.

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<sup>12</sup> A comparison of the correlations of actual and ideal family size with the gap also suggests the predominant role of actual fertility in determining the size of the gap, both theoretically and statistically. There is a very strong association between actual family size and the gap between the ideal and actual fertility ( $r = .85$ ). In contrast, ideal family size explains a significantly smaller proportion ( $r = -.24$ ) of the variation in the gap. Thus, the patterns in the gap between the actual and ideal family size can be understood by analyzing the patterns in the actual fertility and to a lesser extent in the family size norms. Hence, only ideal and actual family size will be used as indicators of the level of fertility in the later analysis.

## CHAPTER VI

### CONGRUENCIES AND INCONGRUENCIES IN MODERNIZATION AND FAMILY PLANNING: EVIDENCE FROM RURAL AND URBAN SAMPLES

According to the demographic transition theory, fertility declines will be an integral part of modernization in a society. As living conditions improve, voluntary control of fertility (through the adoption of family planning methods) increases, resulting in the reduction of fertility. Several studies (Amonker, 1973; Anker, 1973; Srikantan, 1977) using macro level data have shown the close correspondence between the level of development of an area and its family planning performance. In fact, these studies imply that the family planning program cannot be effective unless it is administered in the context of a high level of development. In this study, the cities represent a considerably higher level of modernization than the rural areas; yet, there are no significant differences in their family planning performance. A clearer understanding of the absence of rural-urban differences on the family planning dimensions can be achieved if the four subsamples--two rural and two urban-- are studied separately. These four areas represent a gradient in the extent of their modernization. They,

thus, present an ideal framework for a natural experiment to test the nature of the relationship between modernization and family planning performance at the aggregate level. Based on the transition theory and other related studies, it can be hypothesized that areas with higher levels of socioeconomic development will have experienced higher levels of family planning performance and lower fertility.

### Capital City

Trivandrum city, the administrative capital of Kerala, is the most modern of the four areas, both on the modernization and family planning variables. When the family's socioeconomic status indices are used, this sample has the highest mean education and ownership of modern items (Tables 26 and 27). As might be expected in a modernizing city, this sample also represents a wide range of occupations with a major concentration in upper white collar and professional sectors-- typifying an administrative and educational structure.<sup>1</sup>

Commensurate with their families' status, the women in the Capital City have the highest education and 80% of the working women are concentrated in the upper white collar and professional jobs (Tables 26 and 28). That only 17% of its women are in the labor force fits in with the modernizing status of this city. In such a transitional set up, job

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<sup>1</sup>The median occupation is clerical/service jobs in the Capital city-- refer to Table 28

TABLE 26

MEANS AND RESULTS OF T-TEST FOR SELECTED MODERNIZATION  
AND FAMILY PLANNING INDICES BY AREA OF RESIDENCE<sup>1</sup>

Variables	Capital City N (168 - 152)	Commercial City N (158-143)	Commercial Rural Area N (109-93)	Administrative Rural Area N (105-92)
<b>a. Modernization Variables</b>				
Education of Husband	11.3 <sup>abc</sup>	7.7 <sup>de</sup>	6.1	6.1
Ownership of Modern Items	4.1 <sup>abc</sup>	1.9 <sup>de</sup>	1.1	0.8
Education of Wife	8.9 <sup>abc</sup>	6.8 <sup>de</sup>	5.5	5.5
Age at First Marriage	20.0 <sup>abc</sup>	18.9	18.8	18.9
Infant Mortality	10.4	12.6	11.2	11.9
Conjugal Role Relationship	148.8 <sup>abc</sup>	133.1	125.4	127.1
<b>b. Family Planning Variables</b>				
Son. Preference	8.0 <sup>c</sup>	11.9	12.5	12.9
Parity of FP Initiation	2.5 <sup>ab</sup>	3.4 <sup>e</sup>	3.1 <sup>f</sup>	2.1
Family Planning Effective	3.2 <sup>abc</sup>	2.2	2.1 <sup>f</sup>	2.5
Ideal Family Size	2.7 <sup>ac</sup>	2.93	2.87	2.9
Actual Family Size	3.3 <sup>a</sup>	3.8	3.5	3.5

- <sup>1</sup>a = Capital City significantly different from Commercial City.  
b = Capital City significantly different from Commercial Rural Area.  
c = Capital City significantly different from Administrative Rural Area.  
d = Commercial City significantly different from Commercial Rural Area.  
e = Commercial City significantly different from Administrative Rural Area.  
f = Commercial Rural Area significantly different from Administrative Rural Area.

TABLE 27

STANDARD DEVIATIONS AND RESULTS OF F-TEST FOR SELECTED MODERNIZATION  
AND FAMILY PLANNING VARIABLES BY AREA OF RESIDENCE<sup>1</sup>

Variables	Capital City N (168 -152)	Commercial City N (158-143)	Commercial Rural Area N (109-93)	Administrative Rural Area N (105-92)
<b>a. Modernization Variables</b>				
Education of Husband	4.9 <sup>ac</sup>	3.6 <sup>d</sup>	4.4 <sup>f</sup>	3.5
Ownership of Modern Items	2.9 <sup>abc</sup>	1.9 <sup>d</sup>	1.4 <sup>f</sup>	1.2
Education of Wife	4.4 <sup>ac</sup>	3.5	4.1	3.7
Age at First Marriage	4.2 <sup>c</sup>	3.9	3.7	3.4
Infant Mortality	17.5	18.9	16.4	16.9
Conjugal Role Relationships	25.9 <sup>a</sup>	37.1 <sup>de</sup>	30.2	28.8
<b>b. Family Planning Variables</b>				
Son Preference	20.4	18.6	18.1	18.3
Parity of FP Initiation	2.0	2.2 <sup>e</sup>	1.9	1.8
Family Planning Effective	1.5 <sup>ab</sup>	1.3	1.2 <sup>f</sup>	1.4
Ideal Family Size	0.8 <sup>a</sup>	1.0	0.86 <sup>f</sup>	0.9
Actual Family Size	1.6	1.8 <sup>d</sup>	1.38 <sup>f</sup>	1.9

- <sup>1</sup> a = Capital City significantly different from Commercial City.  
b = Capital City significantly different from Commercial Rural Area.  
c = Capital City significantly different from Administrative Rural Area.  
d = Commercial City significantly different from Commercial Rural Area.  
e = Commercial City significantly different from Administrative Rural Area.  
f = Commercial Rural Area significantly different from Administrative Rural Area.

TABLE 28

DISTRIBUTION OF HUSBANDS' AND WIVES' OCCUPATIONAL STATUS  
STATUS BY AREA OF RESIDENCE

Occupational Categories	Husbands' Occupation			
	Capital City	Commercial City	Commercial Rural Area	Administrative Rural Area
Unemployed	1.8%	1.9%		
Unskilled Labor	16.6	25.9	41.4%	62.9%
Skilled Labor	8.3	12.0	30.3	9.5
Clerical and Service Occupations	26.1	43.7	11.1	17.2
Managerial and Pro- fessional Occupations	47.0	16.4	14.7	10.5
	100%	100%	100%	100%
N	(168)	(158)	(109)	(105)
	Wives' Occupation			
	Capital City	Commercial City	Commercial Rural Area	Administrative Rural Area
Unemployed				
Unskilled Labor	13.3%	44.4%	80.0%	61.6%
Skilled Labor		3.5	2.0	
Clerical and Service Occupations	26.7	31.0	4.0	
Managerial and Pro- fessional Occupations	60.0	24.1	14.0	38.4
	100%	100%	100%	100%
N	( 30)	( 29)	( 50)	( 13)

opportunities, especially for women, will be limited with women playing a predominantly housekeeping role. But, when they do seek employment, it is generally in the higher status occupations.

Capital City, corresponding to its high status on socioeconomic modernization, is also the most modernized at the demographic and social psychological levels (Table 26). Its members tend to marry the latest and have experienced lesser infant mortality than the other areas. Jointness in role relationships is more common among couples in the Capital City than elsewhere. At the same time, this area has the widest range on most of these modernization indices, once again, characterizing a modernizing society.

Capital City's performance on the family planning indices parallels its achievements in modernization (Tables 26 to 29). Its members not only have the most favorable orientations to family size and family planning (son preference and family planning attitudes), but are also one of the most modern in the practice of family planning (parity of family planning initiation and family planning effectiveness).

An important structural feature that may provide an additional explanation is the caste composition of this city's sample. Nairs, among Hindus, and Marthomites/Jacobite Christians among the Protestants form the largest proportion of this sample (Table 30). Both these castes are the dominant castes in Kerala in terms of economic, politi-



TABLE 29

ATTITUDE OF RESPONDENTS TO USE OF FAMILY PLANNING BY  
AREA OF RESIDENCE<sup>1</sup>

Family Planning Attitudes	<u>Area of Residence</u>			
	Administrative Rural	Commercial Rural	Commercial City	Capital City
Favorable	61.0%	45.9%	39.9%	64.3%
Indifferent	2.9	3.7	7.6	4.2
Unfavorable	36.2	50.5	52.5	31.5
N	100% (105)	100% (109)	100% (158)	100% (168)
$\chi^2$	a			
Gamma	-.08			

<sup>1</sup>a = Significant at <.001 level.

TABLE 30

DISTRIBUTION OF RESPONDENTS BY RELIGION, CASTE, AND AREA OF RESIDENCE<sup>1</sup>

Religion	Area of Residence/ Caste	Capital City	Commercial City		Commercial Rural Area		Administrative Rural Area		
Hindu		95.2%		98.1%		100%		81.0%	
	Brahmin		10.2%		25.3%		3.7%	1.0%	
	Nair		45.5		12.7		10.1	53.3	
	Ezhava		21.6		25.3		65.1	10.5	
	Scheduled Caste		18.6		34.7		21.1	15.2	
Christian		4.8		1.9		—		19.0	
	Marthomites/ Jacobites		3.6		2.0		—	—	
	C.S.I.		—		—		—	1.9	
	Nadar Christians		0.6		—		—	18.1	
N		100% (168)	100% (168)	100% (158)	100% (150)	100% (109)	100% (109)	100% (105)	100% (105)

<sup>1</sup>Missing Values: 8 in Commercial City

cal, and social power. The higher average age of this sample (36.5), another structural factor, may be a function of selective retention of older couples in the Capital City, especially since seniority is still an important criterion for the upward movement in the occupational ladder.

Thus, this profile of Capital City characterizes it as the executive core of administrative life with an upper class of professionals, a middle class consisting of white collar workers, and a lower working class. It is, at the same time, a modernizing city in which modern and traditional elements coexist.

#### Commercial City

Cochin--Commercial City--from which the second subsample was drawn is the commercial center of Kerala and forms part of its industrial belt. Unlike the wide range on the stratification system available in the Capital City, the Commercial City consists of a small enclave of wealthy business families as well as executives employed in the government owned large scale industries and a large mass of lower class population. This polarization is reflected in its modernization and family planning status.

Commercial City occupies an intermediate position in the extent of its socio-economic modernization. It ranks below the Capital City in the educational status of its residents; yet, it is more modern than the rural areas (Tables 26 and 27). Two factors need special consideration. As in

the Capital City very few women in the Commercial City are employed (17.7%). This relatively low labor force participation of these urban women may again be attributed to fewer employment opportunities, the dominance of the traditional homemaker's role, and the nonavailability of outside help in the household chores. However, when the women are employed, they are concentrated in unskilled labor (modal occupation) or in the clerical and other service jobs (Table 28). Husband's occupational distribution follows a similar pattern (also in Table 28). Almost 44% of the heads of the households are engaged in white collar occupations along with another 15% in managerial or proprietary jobs. At the same time, nearly 30% are blue collar workers. This combination of blue collar and white collar (both upper and lower) occupations reflects the industrial, commercial, and financial basis of the economy of Commercial City. In general, occupational status of Commercial City's respondents is lower than that in the Capital City.<sup>2</sup>

It is also evident that Commercial City is midway between the Capital City and the rural areas in its demographic (especially age at marriage) and social psychological (role relationships) modernization (Tables 26 and 27). For example, respondents here get married later than rural women although they are not as modernized as women in the

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<sup>2</sup>The median occupation is lower service occupations in the Commercial City.

Capital City. They are also more traditional than Capital City's women in their preference for sons; yet, they have less intense preferences for sons compared to the rural areas.

From this point onwards, however, the Commercial City deviates from its intermediary status. Of all the four areas, its respondents have experienced the highest infant mortality rate, a possible reflection of the crowded and unsanitary living conditions of the poorer segments of this city (Tables 26 and 27). Even more interesting is that the Commercial City tends to be the most traditional in its residents' attitudes toward family planning and also their utilization of family planning. Among all the areas, it includes the largest proportion of respondents who are either indifferent to, unfavorable to or totally opposed to family planning (Table 29). Conversely, it has the smallest percentage of respondents favorable to family planning. A close correspondence also exists between their attitudes and behavior. Its residents initiated birth control latest and are one of the least effective groups in overall effectiveness in planning families (Table 26).

Commercial City's caste composition may have some impact on its paradoxical status alignments (Table 30). Brahmins, Ezhavas, and Scheduled castes predominate in this city's sample. Status incongruencies in the case of the Brahmins, who head the ritual hierarchy but not the secular ranking, may lead to an ambivalence in their life patterns.

Lower caste status of the Ezhavas and Scheduled castes on both the ritual and secular ranking may reinforce each other in creating traditional behavior patterns.

Thus, little correspondence exists between the Commercial City's status on the modernization indices and its family planning performance. It was in this city that the first mass sterilization camps of one day and one month durations were undertaken. But the researcher's personal observations in the field during which she worked closely with the health workers associated with the family planning centers may provide a clue to this unique pattern. The overall administration of the family planning information and services did not appear to be as effective as, for example, in the Capital City. Sporadic provision of certain kinds of services (such as the vasectomy camps) is definitely not a sufficient tool in achieving a reduction in family size. What is also necessary is the continued effective administration of the family planning program.

Corroborating evidence for the ineffectiveness of the family planning program in Ernakulam district in which the Commercial City is located is available in a study on program administration conducted by Valsan (1977). Extensive interviews with family planning acceptors, medical personnel, politicians, social workers, and civil servants revealed sharp contrasts in the organization of the sterilization camps and that of the regular program. The managerial and organizational abilities, and the planning and

leadership qualities of the district collector (the highest civil officer in the district who was also responsible for the organization of the family planning camps) were chiefly responsible for the success of the sterilization campaign. But when the camps were terminated, the responsibility was shifted to the regular district level family planning organization. Interview data from Valsan indicated that the personnel, both higher and lower level, lacked the dynamism and morale to carry on the intense grass-roots campaign necessary for the successful implementation of the program. Another serious limitation on the program effectiveness was the lack of coordination between the family planning and other development programs--a finding that highlights the complementarity of modernization and family planning.

#### Commercial Rural Area

This rural area is part of Ernakulam district in which Commercial City is located. Consequently, both the Commercial City and the rural area fall under the jurisdiction of the same district family planning organization. Spillover effects of the Ernakulam-Cochin-Alwaye region in the district--the financial and commercial belt of Kerala--may also be reflected in this rural sample.

As might be expected, the Commercial Rural Area, does differ significantly from the Commercial City in the level of its socioeconomic status (Table 26). Rural residents have a lower mean education, both husband's and wife's, and

own fewer modern items than the residents of Commercial City. A similar pattern is evident in the case of their occupational status too (Table 28). Almost 65% of the rural husbands are unskilled or skilled laborers. In contrast, more than half of the heads of households in the Commercial City are concentrated in the middle of the occupational stratum (ranging from skilled to other services). Similarly, while more women in this rural area (40%) are in the labor force than any other, the majority of them are unskilled workers compared to the wider distribution of Commercial City's workers (Table 28).

Yet, deviations from the traditional rural structure are evident in this sample suggesting spillover effects from the Commercial City. Consequently, the Commercial Rural Area is not merely rural, but is in the initial state of transition from the traditional homogenous structure. For example, this rural village, inspite of the low general level of education, exhibits wider variations in the educational distribution of its residents than the Commercial City (Table 27). There is also a larger proportion of rural husbands who are semi-professionals or professionals (Table 28).

While the Commercial Rural Area has a significantly lower socioeconomic status than the Commercial City, they do not differ much in the demographic (age at marriage and infant mortality) and social psychological aspects of their modernization (Table 26). It indicates that the level of



socioeconomic modernization in the Commercial City and its rural area (but the City especially) is not strong enough to induce modernization in other sectors of these societies. These rural respondents also tend to be traditional in their orientation to and practice of family limitation as the urbanites (Table 29). That the Commercial Rural Area and the City are served by the same family planning organization may further explain the ineffectiveness of the rural sample on the family planning measure. Low levels of modernization and inefficient family planning program administration that characterize the Commercial Rural Area together explain its residents' ineffectiveness in planning their families.

Additional support for the complementarity of modernization and family planning is evident in the comparison of Commercial Rural Area to the Capital City (Tables 26 to 29). The Commercial Rural Area is markedly different from the administrative city not only in its socioeconomic status but also in its demographic and social psychological modernization and family planning performance. Significantly lower levels of educational, occupational, and economic statuses, lower age at marriage, and more segregated conjugal role relationships typify the rural respondents. Corresponding to this traditional status is a conservatism in their attitude toward and their practice of family planning.

This conservatism is reinforced by the caste composition of this sample (Table 30). Ezhavas and Scheduled castes--the two lowest groups in the secular and ritual

hierarchy--form 86% of its population. Ezhavas, who unlike the Scheduled castes are not protected by the government, tend to be in the least favorable position with regard to development.

The Commercial Rural Area is closer to the Commercial City than it is to the Capital City, not just geographically, but also in its social profile. Both these areas appear to be in the initial stages of transition, although their starting points differ. For the Commercial City, it is the beginning of a transition from an urban center to a modernizing society. In the case of the rural area, the initial shift is away from the rural organization towards a more diversified socioeconomic structure.

#### Administrative Rural Area

Administrative Rural Area, the last sample in the study, is along with the Capital City, a part of Trivandrum district. With regard to its general level of modernization--socioeconomic, demographic, and social psychological--the Administrative Rural Area has a significantly lower status than that of the administrative city (Tables 26 and 27). Its residents not only have lower education and own fewer modern items than their city counterparts, but almost 60% of the heads of households are engaged in lower status occupations--unskilled labor and small scale farming (Table 28). Like their husbands, most of the employed women (12.4% of the sample) are also engaged in either unskilled labor

or petty business. However, the semi-professional status of the rest of the employed women may be a carry over from the Capital City.

Given the low socioeconomic development level of the Administrative Rural Area, its traditional profile in terms of age at marriage and conjugal role structure is to be expected (Tables 26 and 27). What is surprising is its high level of family planning performance, a level comparable to the Capital City. Almost 61% of these rural respondents (as high a proportion as in the Capital City) are generally favorable to using some method of family limitation while only 36% are either unfavorable or totally opposed to it (Table 30). Further, the administrative rural respondents, like their urban counterparts, initiated use of family planning very early (Table 26). These deviations may also be explained in terms of the personal observations of the researcher during the fieldwork concerning the administration of the family planning program in this area. Continuous and intensive grass-roots level contacts in this area were maintained, through regular field visits, by the family planning health assistants. Coupled with this was the interest and cooperation of the medical personnel in charge of the primary health center for family planning. A family planning program can, therefore, be quite effective even when the level of modernization is low.

However, if the program is to effect basic and overall changes in the planning of and control over family size, a

modernizing context is necessary. In spite of the relatively effective administration of the family planning program, the overall effectiveness of the administrative rural respondents in planning their pregnancy histories is still low compared to the Capital City (Table 26). Similarly, the intensity of preference for sons among these rural respondents is the highest of all the four areas. A strong desire for sons is rooted in the agrarian social structure of the rural area. Table 28 indicates that almost 29% of its respondents are farmers, both small and large, compared to 3.6% in the Commercial Rural Area, 2.5% in the Commercial City, and none in the Capital City. Modernization, as demonstrated in the case of the Capital City would, therefore, prove an effective catalyst in realizing the full potential of the family planning program.

Just as with the Commercial Rural Area, the Administrative Rural Area differs from the Commercial City in its socioeconomic modernization, but not in its demographic and social psychological aspects (Table 26). Educational, occupational, and economic statuses of the administrative ruralites are significantly lower when compared to the Commercial City's population. But the rural area, despite its low level of development, is more effective in the field of family planning than the Commercial City. This is especially so with regard to attitude to family planning and parity of initiation of birth control (Table 26). For instance, while 52.5% of the Commercial City's sample is opposed to the use

of family planning, the corresponding proportion in the Administrative Rural Area is only 36%. Conversely, the rural respondents have more favorable attitudes than the commercial urbanites. Corresponding to these favorable attitudes, the rural respondents on the average initiated practice of family limitation one pregnancy earlier than the Commercial City's sample. Yet, the two samples do not differ in the overall effectiveness in planning their families. A major impediment to the effectiveness of the program in the Administrative Rural Area may be its traditional social structure. These findings further confirm the independent, yet complementary nature of modernization and family planning, the two major means to controlling population growth.

Additional support for the distinctiveness (even if limited) of family planning is available in the comparison of the two rural samples. While the two areas are basically similar in their levels of modernization, the Administrative Rural Area is the more typically rural area of the two, at least in its socioeconomic status (Table 27). It has more clustered distribution than the Commercial Rural Area in the educational (husbands') and economic statuses of the family. Occupational concentration of the Administrative Rural Area's respondents in unskilled labor and farming denotes an agrarian and non-industrial structure (Table 28). In contrast, unskilled and skilled laborers predominate in the Commercial Rural population. And, it also includes petty businessmen and professionals in larger proportions than the

Administrative Rural Area, reflecting industrial and commercial influences on its structure.

Inspite of the similar, if not more, traditional structure of the Administrative Rural Area, it differs considerably in its family planning status from the Commercial Rural Area. Administrative Rural Area--the most typically rural--is the more effective of the two, both in its orientation to and practice of family planning (Tables 26 and 29). In other words, the effective family planning program in the Administrative Rural Area is a major reason for its high performance on the family planning dimensions.

A contradictory profile, thus, emerges from the analyses of the Administrative Rural Area's position on the modernization and family planning indices. Caste structuring of this sample may be a further explanatory factor (Table 30). Of all the four areas, this sample has the largest proportion of Nairs (53.3%), the dominant secular caste in Kerala. While they may be restricted in their modernization by the traditional structure in which they operate, they seem to exercise greater control over a personal dimension--family size.

#### Relevance Of The Varied Profiles For Family Size

Comparative analysis of the two urban and two rural areas precludes a unidirectional and linear relationship between modernization and family planning status. It is necessary at this point to assess the implications of these

mixed profiles for the phenomenon that impinges directly on population growth--family size.

In all the four areas, both the average ideal family size and especially the actual family size exceed replacement level fertility which is the goal of the family planning program (Table 26). What is even more significant is that the traditional rural/urban differences in family size are not evident in these populations. Commercial City and Capital City seem to differ most in their ideal and achieved family sizes. As might be expected, Capital City, with its highest level of modernization and an effective family planning program, has the lowest mean ideal and actual family size. Commercial City is at the opposite extreme with its highest ideal and actual. Once again, the level of modernization in the Commercial City proves insufficient to effect modernization of fertility orientations and behavior. It may also imply a short term rise in fertility in the initial stages of socioeconomic development as suggested by Tsui and Bogue (1978: 19, 24).

In between these extremes lie the two rural areas. Although the Commercial Rural Area has a slightly smaller ideal than the Administrative Rural Area, the latter has a smaller achieved family size. However, only the Administrative Rural Area has a significantly higher ideal family size in comparison to the Capital City. A higher preference for sons, the variable on which only the Capital City and Administrative Rural Area differ, may explain the higher rural

ideal. Yet, the administrative rural sample has the smallest gap between its ideal and actual family size suggesting closer correspondence between family size norms and performance.

Until 1970, very little difference was found between rural and urban fertility in India, partly because of the unique nature of its urbanization. Since then declines in urban fertility vis-a-vis rural fertility have been documented (Rele and Kanitkar, 1974: 229). The absence of the traditional rural-urban fertility differentials in Kerala is in conformity with the mixed modernization-family planning profiles documented in its two cities and the two rural areas.

### Conclusion

Several writers have pointed out recently that the process of demographic transition and modernization in developing countries need not follow the same pattern as the Western transitions. In fact, due to the variations in the starting points, in the culture and social structure of each society, each national transition is bound to develop its unique features in the timing, sequence, and interplay of the traditional and modern elements. Teitelbaum (1975: 176-177) speaks of several factors that may contribute to the uniqueness of the demographic transitions of these modernizing societies. Of particular relevance to this study are the increased planning abilities of the national govern-



ments of which the organized family planning program in India is an example, increased acceptance of the small family norm, and easier access to different methods of fertility control.

At the aggregate level, family planning performance in this sample appears to be divorced from modernization status. Commercial City, although advanced in its socioeconomic modernization, is very traditional in its family planning achievements. At the opposite extreme lies the administrative village, the least modern area in the sample; yet, it has a high family planning performance status. These findings are at variance with studies that posit modernization as a necessary prerequisite for the success of the family planning program. Similarities in the small size of the average actual fertility, particularly between the rural areas and Capital City which have different levels of development, is another indication that family planning programs can be relatively effective under different levels of modernization. At the same time, the limited success of the program, in the absence of modernization, can be seen, for example, in the higher average ideal family size of the administrative rural area compared to the Capital City.

A comparison of the four areas with different levels of development provides a convenient set up for a natural experiment of the relationship between modernization and family planning performance. The results presented in this chapter substantiate the analysis at the individual level

presented in Chapter V. Modernization and family planning seem to be complementary, yet independent at the aggregate level also. The specific combination of these two dimensions evident in the four subsamples lends credence to the notion of individual demographic transitions suggested by Teitelbaum and others.

## CHAPTER VII

### MODERNIZATION AND FAMILY PLANNING: AN ASSESSMENT OF THEIR CONTRIBUTIONS IN REDUCING FERTILITY

Both the fertility literature and the preliminary analysis, particularly at the aggregate level, presented in the preceding chapters suggest the complementary, yet separate influences of modernization and family planning on fertility. A more stringent test of the nature of the complementary relationship between modernization and family planning in their effects on fertility behavior and their relative independent contributions to fertility reductions is possible through the use of path analysis. Following the procedures outlined in Asher (1976) and Kerlinger and Pedhauzur (1973), a path analysis of the fertility model detailed in Chapter III was carried out. The model includes four structural variables-- rural urban area of residence, religion, caste status, and age of the respondent--which are hypothesized as influencing the two indices of primary modernization, the respondent's and her family's socioeconomic status. These status characteristics, in turn, would determine the extent of secondary modernization in a family, measured by the respondent's age at marriage, the extent of infant mortality experienced by the couple, and the social

psychological manifestation of modernization indexed as the nature of the role relationships. These modern characteristics are further conceptualized as influencing the respondents' norms regarding family size and family planning and consequently their family planning behavior. Ultimately, modernization and family planning are expected to determine the number of children each couple has.

Results from the path analysis suggest that family planning behavior and indicators of secondary modernization, such as age at marriage and infant mortality, which have a quantitative impact on family size are some of the most direct determinants of fertility behavior. As might be expected, family planning which involves a deliberate control of fertility has a stronger influence on family size than modernization. Further, the indirect effect of modernization through family planning is as strong (if not stronger) as its direct influence on actual fertility. Thus, even though the practice of family planning presupposes modern traits and values, the role of modernization as a tool in reducing fertility is strengthened when it is accompanied by the appropriate family planning behavior. Family planning programs aimed at popularizing the concept and use of family planning methods among all social and economic classes will speed up the fertility declines.

### A Methodological Note

As a first step in delineating the path model, each of the endogenous variables were regressed on the causally preceding independent variables. Two criteria were used in trimming the model: (1) paths were dropped if their values were smaller than .05, the magnitude often recommended as a criteria for deleting paths (Kerlinger and Pedhauzur, 1973: 318); (2) paths were also deleted at each step using the .05 level of significance for the path coefficients. Path coefficients above the value of .05 were omitted only when they were insignificant at the .05 level. Once the non-significant paths were deleted, the regressions were rerun until the final path model was ascertained.

In the course of the regression analysis, family planning effectiveness (see Appendix B for description of this variable), the last of the family planning variables in the causal order, was dropped from the model for several reasons. When actual family size was regressed on all the independent variables in the model, the coefficient for the direct path from family planning effectiveness to actual family size was not only insignificant at the .05 level of significance but was only .04 in magnitude. Secondly, the correlation between the parity at which use of family planning was initiated and family planning effectiveness was a high  $-.62$ . Hence, all the influence of family planning effectiveness on fertility behavior ( $r = -.46$ ) is because of the influence of the antecedent variable, parity of family

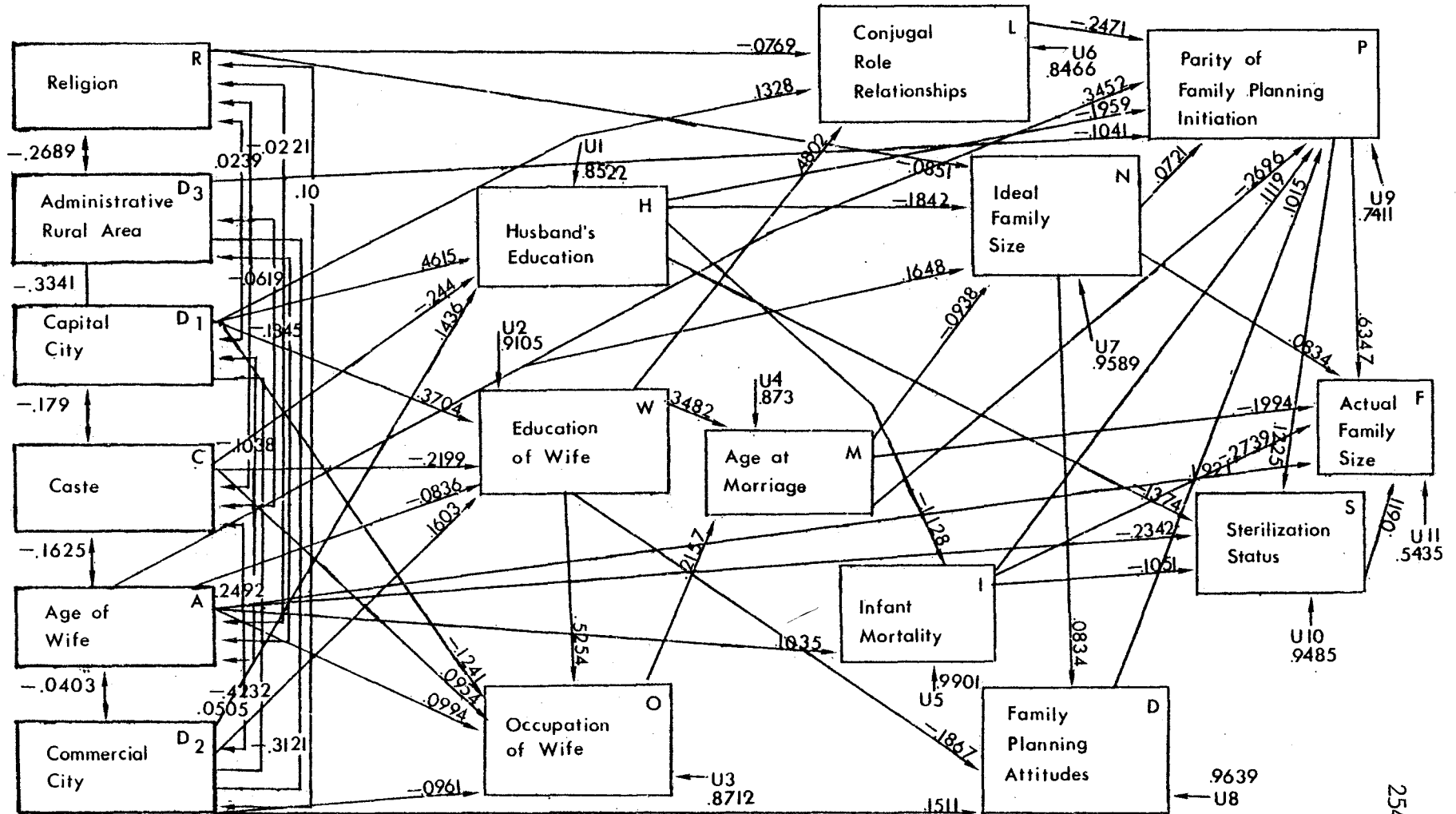
planning initiation, on effectiveness.<sup>1</sup> Measurement of family planning effectiveness also required the respondent to recollect the contraceptive circumstances preceding every pregnancy, rendering reliability of recall problematic. In the case of parity of family planning initiation, however, only one point in time in their pregnancy history needed to be remembered. The chances of accurately recalling one such event rather than several are much higher. Parity of family planning initiation was, therefore, chosen over family planning effectiveness, as a more reliable index of family planning behavior.

Once the path model was determined, the next methodological step was to test its adequacy. Correlations between all the independent and the dependent variables at each stage in the causal order were recalculated and are presented in Appendix D along with the original correlations. With two exceptions, all the reproduced correlations were either identical with or very close to the original suggesting that the model presented in Figure 2 is a tenable one. Sizeable discrepancies between the actual and implied corre-

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<sup>1</sup>Incidentally, the correlations of family planning effectiveness with age of wife ( $r = -.07$ ), age at marriage ( $r = .26$ ), infant mortality ( $r = -.06$ ), ideal family size ( $r = -.18$ ), and sterilization status ( $r = -.14$ ) are small. Hence, it is possible to attribute the original relationship between family planning effectiveness and fertility to the effect of parity of family planning initiation on planning effectiveness. The indirect causal role of family planning effectiveness in family size determination will be analyzed further at a later time.

ILLUSTRATION 2  
A PATH MODEL OF FERTILITY PATTERNS IN KERALA, INDIA



lations were limited to the relationship of ideal family size with sterilization status (difference of .08) and of conjugal role relationships with actual family size (difference of .07). Even in these two instances, the deviations were not too large to warrant their inclusion in the model at this stage.<sup>2</sup>

### Modernization-Family Planning Interactions In Determining Family Size

#### The Background Variables

The four background variables, rural-urban area of residence, religion (R),<sup>3</sup> caste (C), and age of the respondent (A), constitute the exogenous indices of modernization in the model. Area of residence consists of four areas necessitating the creation of three dummy variables, Capital City (D1), Commercial City (D2), and Administrative Rural Area (D3). The fourth area, Commercial Rural area became the "other" category.

No causal order can be delineated among the exogenous variables. Their interrelationships will, therefore, be represented by simple correlations in the model. Two types

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<sup>2</sup>In testing the validity of the model, a difference of less than .05 between the actual and implied correlations is considered acceptable.

<sup>3</sup>The letters in parentheses are the symbols used to represent the variables in tracing the paths.



of correlations among the background variables need to be distinguished. The correlations among the three dummy variables are completely spurious or non-causal as defined by Nie, et. al (1975: 389-390). These non-causal correlations will form part of the spurious effects in a correlation. In other words, although they are mathematically a part of the equations, these correlations cannot be interpreted substantively. On the other hand, the relationships of the three dummy variables representing area of residence with religion, caste, and age of the respondent and the covariations among the last three represent 'unanalyzed correlations' (Nie, et. al, 1975: 389) with no direction of causation specified. Such analyzed correlations introduce ambiguities into the model because one-way causations are not implied in the relationships among the exogenous variables.

Since no unidirectional causality is implied among the background variables, these covariations provide a basic description of the sample. Capital City does not differ from the other areas in its religious composition, but does have a higher proportion of upper castes<sup>4</sup> and older women. On the contrary, Commercial City has more Hindus compared to the other areas, but there are no significant caste and age differences between the Commercial City and the other areas. The differences in caste composition among the two cities

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<sup>4</sup>The correlation between Capital City and caste is negative because caste status is ranked in such a way that a lower value (for example, 1) indicates higher caste status.

may be a reflection of their economic structure. Since a higher proportion of upper castes reside in Capital City, the administrative capital of Kerala, perpetuation of the traditional situation where upper castes were privy to higher education and non-commercial white collar occupations can be expected. Such caste polarization is not evident in the Commercial City, the more cosmopolitan of the two cities. Further, the commercial and industrial base of the Commercial City's economy does not preclude the participation of any caste group. Caste distinctions (implying the preponderance of some castes over others in comparison with the other areas) are also absent in the Administrative Rural Area although it has a larger proportion of Christians and younger women. Differences in the age composition of the Capital City and its rural area might be a consequence of the higher and lower fertility of the rural and urban areas respectively.

Upper castes in the Hindu tradition occupy a higher status in the ritual hierarchy than the Christian upper castes. This is evident in the relatively higher caste status of the Hindus compared to the Christians ( $r = -.10$ ). Further, while there are no significant religious distinctions between older and younger respondents, caste distinctions do exist. A larger proportion of older women belong to the upper castes with the lower caste respondents being younger. This younger age structure of the lower castes may be attributed to their traditionally higher fertility.

Aside from providing background information on the sample, these covariations present conditions that may either dampen or enhance the effect of modernization on fertility. For example, a large number of residents in Capital City belong to the upper castes. It can be hypothesized that both these traits will reinforce each other in reducing fertility. At the same time, although modern fertility behavior can be associated with upper castes, their older age composition will diminish the effects of the higher social status associated with upper castes. Such correlations will play an important role in determining the nature of the influence that modernization and family planning exercise on fertility.

### Primary Modernization

#### Family's Socioeconomic Status

Educational accomplishments of the head of the household (H), the index of a family's socioeconomic status, is the first endogenous modernization variable in the model. As might be expected, families in the Capital City enjoy a higher status than families in other areas, even after controlling for the effect of the higher caste status of Capital City's families (path HD1 = .46). Commercial City is also characterized by higher social status (path HD2=.14), although it is not as distinctly different as Capital City is from the rural areas. These results, thus, validate the findings presented in Chapter VI where Capital City was

characterized as the most modern of the two cities.

Further, despite public policies designed to mitigate the discrimination against the lower castes, lower caste status is still associated with lower social status (path  $HC = -.24$ ).

As noted in the earlier discussion of the exogenous variables, the relationships among them also present certain indirect links in the effect of the background factors on husband's education. For example, families in the Capital City or upper castes generally have a higher status (measured as husband's education) partly because many upper castes tend to reside in Capital City (path  $HD1.rD1C = -.08^5$  or path  $HC.rCD1 = .04$ ). In short, urban families and upper caste groups still occupy the higher rungs of the socioeconomic order in Kerala.

### Educational Status Of The Wife

While the family is the unit of procreation, the wife is the most directly involved in the childbearing process. As such her socioeconomic characteristics have an additional significance in determining family size.

Wife's education (W) is the first index of her socioeconomic status in the model. A causal link cannot be established between husband and wife's education because the man and the woman enter the marriage market with their educa-

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<sup>5</sup>Path  $HD1.rD1C = -.08$  refers to the product of the unanalyzed correlation (r) between caste status (C) and residence in the Capital City (D1) and the path from Capital City to Husband's education (H).

tion. No doubt, in contracting a marriage, parity in the educational qualifications of the husband and wife is stressed and the man's decision or choice generally prevails. Yet, it is not possible to stipulate that husband's education causally determines the wife's educational status. It was, therefore, decided to exclude husband's education from the analysis of the determinants of wife's education and to allow the residuals in the two to be correlated.<sup>6</sup>

There is no difference in the causal structures of the respondent's and her husband's education. Like their husbands, women residing in the two cities and upper caste women have higher education in comparison with rural and lower caste women respectively. Similarities also exist in the sizes of the path coefficients for husband and wife's education. Despite differences in the levels of education among men and women (see Chapter V), traditional structural biases (such as caste status and area of residence) are equally strong in creating disparities in the educational accomplishments of both men and women in Kerala. This relative absence of sex bias in educational advancement can, to a large extent, be attributed to the programs of free education in Kerala to which 39% of Kerala's budget is devoted (Visaria and Visaria, 1981: 9). Consequently, Kerala also

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<sup>6</sup>The residuals were allowed to be correlated only to facilitate the recalculation of the implied correlation between husband and wife's education. Hence, it does not affect the original estimation of the path coefficients. See Sewell, et.al, 1970 for a similar approach.

has the highest literacy rate among all the states in India both for men and women: 74% of Kerala's men as opposed to the national average of 47% and 65% of its women compared to 25% of the women in the nation are literate (Visaria and Visaria, 1981: 9). There are still differences in the educational achievements of men and women. But the patterns in their education, i.e., factors accounting for disparities in educational accomplishments, are the same for both sexes.

Age of the respondent is the fourth determinant of her educational status. Many younger women, irrespective of their area of residence and their caste status, have higher education compared to their older counterparts (path  $WA = -.08$ ). Such improvements in the status of women over time is another important aspect of the modernizing trends in Kerala today.

In the preliminary analysis of the data, however, the insignificant simple correlations between age of wife and her education ( $r = .05$ ) suggested there had not been any significant improvements in women's social status over time. Two factors were responsible for this misleading conclusion. Many older women live in the Capital City where women have a higher educational status (path  $WD1.rD1A = .09$ ). Some older women also belong to the upper castes and upper caste women generally have higher education (path  $WC.rCA = .04$ ).<sup>7</sup> Two

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<sup>7</sup> Since there are no significant age distinctions among women in the Commercial City, the path from Commercial City is minor.

traditional factors, urban residence and upper caste status, thus, obfuscate the real improvements gained by women over time in the field of education.

Correlations among the determinants of wife's education also provide additional insights into the coexisting traditional and modernizing elements in Kerala. For example, continuing the traditional pattern found in the case of men, upper caste status women who reside in the Capital City also have higher education. Many women in the Capital City belong to the upper castes who are privy to higher education (path WC.rcD1=.04). Alternately, many upper caste women reside in the Capital City where residents generally have higher education compared to the Commercial City and rural women (path WD1.rD1C=-.07). Age composition of upper caste women and those residing in Capital City, on the other hand, slightly weakens the traditional monopoly of Capital City and upper caste status on higher education. For example, Capital City has many older women who, in turn, have lower education, leading to the lower educational status of some residents in the Capital City (path WA.rAD1 = -.02). Such contradictory patterns where the traditional and the modern intermingle is, again, a characteristic of a modernizing society.

### Women's Occupational Status

Employment of women (0), like education, exposes women to a wider range of ideas, opinions, and behavior patterns. It limits the time women can devote to their families while providing an effective alternative to large families and even to childbearing. Hence, women's occupational status will have a significant influence on their family size decisions.

Analysis of the factors determining women's occupational status reveals trends that undercut the improvements achieved in the field of education. For example, women in both the Capital and Commercial cities and upper caste women tend not to be employed.<sup>8</sup> It is still neither customary nor socially desirable for urban women and those of the upper castes to seek outside employment. The low rate of employment of these women is also due to the limited job opportunities, particularly in the white collar sector, of an industrializing society. Within an agrarian economic structure, rural and lower caste women can be expected to seek

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<sup>8</sup>Since very few women in the sample work (23% are employed), a negative association will be more a reflection of not being employed than being in lower status occupations. As noted in Chapter V, women's occupational status ranges from unemployed (coded as 0) to professionals (coded as 12). A drawback of this measure lies in considering unemployed women as the lowest category in the occupational structure. A majority of these women belong to the upper social and economic strata. They do not work because it is socially undesirable to do so or because of the difficult job situation, particularly for the educated. It would have been more appropriate to use a dummy variable involving employed and unemployed women.



employment to supplement the family income. They also have definite functions in the agricultural process which explains why rural women tend to be employed more than their city counterparts. In the case of lower caste women, their higher occupational status also suggests increased opportunities to overcome discrimination and to participate in the economic progress.

Another aspect of women's employment and a possible consequence of the traditional nature of the economy is the importance of seniority as opposed to merit in determining movement up the occupational ladder. Not only are more older women employed but they are employed in higher status occupations compared to the younger women, inspite of the latter's higher education. In general, the structural factors (or characteristics of the groups to which these respondents belong)--area of residence, caste, and age cohort--have a traditional influence on women's occupational patterns.

Individual achievements, such as education, have, on the contrary, an opposite impact on women's occupational status. Once the traditional influence of the background factors is controlled, women with higher education tend to be employed in higher status occupations. What is even more significant is that education, an individual characteristic, is a more dominating influence on women's occupational status compared to their group traits. The significance of individual initiative in determining women's participation

in the occupational structure represents another important aspect of modernization in Kerala.

Aside from these direct effects, several indirect paths further specify the conditions that encourage or hinder women's employment and their employment in higher status jobs. Higher education of urban residents and of upper caste women, is a very strong facilitator of women's employment. For instance, women in Capital City have a higher education in comparison with women in other areas and consequently tend to be employed in higher status jobs (path OW.WD1=.20). This may be due partly to the increased availability of higher status jobs in the Capital City. Similarly, higher education also enables women in the Commercial City and upper caste women to be employed and to be employed in higher status occupations. In fact, the intervening influences of education in facilitating women's employment more than offsets the direct traditional effect of urban residence and upper caste status on women's employment.<sup>9</sup> Yet, when urban and upper caste women do overcome the social restrictions in the field of employment (a modern pattern), it is under circumstances that perpetuate caste and urban monopoly over development. This is evident in the case of upper caste women who live in the Capital City, where women have higher education and, therefore, are employed in higher

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<sup>9</sup>The direct path coefficient OD1 is equal to -.12 in contrast to the indirect path OW.WD1=.20).

status jobs (path  $OW.WD1.rD1C=-.04$ ). In short, higher education does increase the chances of women being employed; but such opportunities are still limited to urban and upper caste women who traditionally have had special access to higher socioeconomic status.

Age distinctions in women's employment status provides another instance of the coexistence of the traditional and the modern in Kerala. Aside from benefitting directly from the principle of seniority (path  $OA=.10$ ), older women have higher status jobs because they reside in the Capital City where women generally have higher education (path  $OW.WD1.rD1A=.05$ ). On the other hand, when younger women are in higher status jobs, it is because of their individual achievements (higher education). There have been improvements in the educational and, therefore, occupational opportunities available to younger women over time (path  $OW.WA=-.04$ ). Yet, the limited nature of this progress over time is evident in the small size of these paths compared to the direct effect of seniority (path  $OA=.10$ ). Further, many of these women work in a predominantly agrarian occupational structure which would limit their access to upper white collar and professional jobs. Though these women are employed, such employment may not constitute a major break from their traditional roles of mother and housewife.

Analysis of the interrelationships among the indices of primary modernization trends in Kerala thus far presents a mixed picture. On the one hand, substantial advancements

have been achieved by women in improving their socioeconomic status. A fair correspondence also exists between urbanization and socioeconomic modernization. Nonetheless, traditionally restrictive forces, such as caste status, still play a sizeable role in excluding the lower castes from participating in the general economic and social progress that has been achieved.

### Secondary Modernization

#### Age At Marriage

While primary modernization is a pre-requisite for changes in fertility values and behavior, its effect is mediated through various channels, one of which is secondary modernization. Secondary modernization refers to the consequences of urbanization, industrialization, and the concomitant improvements in the socioeconomic status of individuals and families. The first set of indices of secondary modernization are basically demographic variables--age at marriage and infant mortality. Age at which a woman marries (M) can be hypothesized to have a quantitative influence on fertility by determining the number of reproductive years. At the same time, age at marriage also has a socioeconomic connotation. It denotes a set of values and beliefs associated with social and economic modernization as it influences age at marriage.

As hypothesized, the most significant aspect of primary modernization that determines the age at which a woman

marries is her socioeconomic status. Women with higher education tend to postpone marriage at least until after completing their education (path  $MW=.35$ ). Employment is another factor contributing to late marriages (path  $MO=.22$ ), although its effect is not as strong as that of education. Women's employment is still not very widespread in Kerala, a factor limiting the impact of occupation on age at marriage. Further, families wait until after a girl completes her education before they get her married. Her employment, on the other hand, is not that strong a deterrent to her marriage, reflecting the stronger significance attached to women's education over her occupation. Yet, working women tend to marry later than the non-working women for several reasons. They may wait until they are settled in their jobs before getting married because it increases their bargaining power in the marriage market. Still more important is that a permanent job places restrictions on the geographical area within which their search for a suitable partner will have to be confined. Such restrictions will tend to postpone their marriages even further.

It is also true that women with higher education tend to postpone their marriage because such women also have higher status jobs (path  $MO.OW=.12$ ). In other words, the problem of finding a suitable partner, both in terms of their educational and occupational statuses becomes compounded in such instances. Higher education and employment also modernize the values and ideas of these women and their

families concerning themselves and their role in their marriages and in the society. Such changed concepts may persuade them to break away from the traditional customs of early marriage, motherhood, and housekeeping as their sole purpose in life. Improving the socioeconomic status of the women, therefore, modifies marriage practices that have a direct bearing on fertility.

### Infant Mortality

What are the implications of the mixed patterns of primary modernization discussed earlier for rates of infant mortality (I), the second index of secondary modernization? Like age at marriage, infant mortality is a demographic variable with quantitative and motivational effects on fertility. The number of infant deaths will numerically determine the size of the family. At the same time, under conditions of high rates of infant mortality, couples may be motivated to have a large family as an insurance for the survival of at least a few. Hence, infant mortality is a crucial factor in fertility analysis.

Infant mortality, in turn, is both a biological and social class phenomenon. The survival rate of infants is partly determined by the health of the mother and physical conditions, such as sanitation and availability of medical care, in which infants grow. For instance, age of the respondents is a significant predictor of her rate of infant mortality. Older women tend to have experienced a higher

proportion of infant deaths in their pregnancy histories than the younger cohorts (path IA=.10). Several explanations can be provided for this pattern, not the least of which is the cohort effect. Prior to Independence in 1947 and even in the post-independence era, when the majority of older women had their children, health and living conditions were poor and medical services meager. Health care and sanitation facilities have since been improved considerably for all segments of society. Such improved health conditions may contribute to the lower infant mortality rates experienced by the younger women. Older women also have longer childbearing histories, compared to the younger women. As a result, the likelihood of older women experiencing more pregnancies, and consequently more infant deaths are greater.<sup>10</sup>

Despite the significant advances in health care and living conditions in Kerala, social class still influences access to and effective utilization of these services. Even after the effect of age of wife is controlled, her family's socioeconomic status influences the rate of infant mortality in the family (path IH=-.11). Specifically, upper class families experienced fewer infant deaths, probably because they have easier access to modern and improved health care.

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<sup>10</sup> However, at this stage of the analysis only the recursive link from infant mortality to actual fertility was included. The non-recursive relationship between infant mortality and actual fertility will be analyzed at a later time.

Higher education may also involve a change in the perceptions about health and disease and a shift in the emphasis from curative to preventive health.

In short, younger women experienced fewer child losses in their pregnancy histories reflecting either the improvements in living and health conditions or fewer pregnancies among younger women. Yet, class distinctions in infant mortality experienced by these women still persist. Narrowing such class disparities have to be an integral part of modernization and indirectly of the population control program in Kerala.

### Conjugal Role Relationships

Conjugal role relationships (L), the third index of secondary modernization, is another means of specifying the possible influence of socioeconomic factors on fertility. Unlike age at marriage and infant mortality which are primarily demographic factors with quantitative influences on fertility, conjugal role relationships is a social psychological phenomenon. Conjugal role relationships refer to a system of values and attitudes about marriage and family that govern the nature of the relationships between the husband and the wife and their familial roles. Modernization expressed in terms of conjugal role relationships can be conceptualized as a family situation, in which the husband and the wife share equal, yet interchangeable responsibilities in family affairs. Such shared participation is prima-



rily a reflection of the equality in the status of the man and the woman. In a traditional society, where women play a subordinate role, having a large family becomes an important source of prestige for them. Hence, improving women's status will also have to be a critical goal of the population program.

What are the conditions under which modern conjugal role relationships and improved status of women occur to enable joint participation of women with their husbands in carrying out familial activities? The most significant correlate of jointness in role relationships is higher education of the wife (path  $LW=.48$ ). Higher education exposes women to ideas, roles, and functions that are effective alternatives to the subordinate familial roles traditionally prescribed for them. Such women also seem to translate these notions into practice within their family as expressed in their joint role relationships. Another factor that determines the nature of role relationships between the husband and the wife is residence in the Capital City (path  $LD1=.13$ ). Couples who live in the Capital City participate jointly in decision making and familial responsibilities to a larger extent than non-residents. Capital City offers its residents greater and varied exposure to modern ideas and behavior patterns through mass media of communication, such as radio, the press, and the cinema. Limited housing conditions in the city largely precludes the maintenance of an extended family. Family pressures from the older generation

to preserve the traditional division of labor will, therefore, be relatively absent in an urban setting.

But the opportunities for individual advancements that exist in the Capital City have a stronger effect in modernizing role relationships than the direct effect of mere residence in Capital City. Capital City's respondents enjoy a higher educational status and consequently have joint relationships (path LW.WD1=.18).

A third factor that differentiates couples in their role relationships is their religious background. Christian respondents, possibly due to the Western component in Christianity, tend to be more joint in their relationships than the Hindus (path LR=-.08). Unlike Hinduism, Christianity is a highly organized religion stressing group participation in religious activities, an emphasis obviously carried into the secular life of its adherents.

Improving the educational standards of women, in general, is an effective tool in raising their status within the family. It is highly probable that the opportunities for equal participation in family affairs that higher education provides women will play a major role in modernizing their fertility values and behavior.

Another aspect of the patterns in primary and secondary modernization that requires special mention is the significant disparity in the extent of development in the rural and urban areas in Kerala. As noted in Chapter VI, Capital City is the most advanced of the four areas with Commercial

City occupying an intermediate position. In contrast, the two rural areas are traditional and very similar in their social and economic structures. Thus, involving the rural areas in the modernization trends is one of the major challenges that faces Kerala.

### Family Size Norms

#### Ideal Family Size

In the fertility model presented in Chapter III, modernization was hypothesized as influencing family size through the intervening set of family planning indicators. Researchers such as Davis (1975) and Schutzer (1978) have emphasized the need for evaluating the relationship of norms regarding family size (N) to fertility behavior. From a policy perspective, the argument is that couples have many children because they desire large families. Until there is a shift in desires or norms from large to smaller families no major change in fertility behavior can be expected.

It is, therefore, necessary to analyze the correlates of ideal family size to determine how women with low ideals differ from those with high ideals. Women who marry late tend to idealize smaller families compared to those who marry young (path  $NM = -.09$ ). When these women conceptualize the family size that would be ideal for them, they take into account the length of their reproductive span. Since women who marry when they are older also have a higher socioeconomic status, they probably are aware of the dangers to

their health and the health of their children posed by pregnancies in the later years of the reproductive period. Such women, because of their educational and occupational backgrounds can be expected to have similar aspirations for their children, aspirations which can be effectively fulfilled only if they have a small family.

It is this emphasis on upward mobility that is reflected more strongly in the influence of the family's social status on ideal family size (path  $NH = -.19$ ). Smaller families tend to be idealized more by women with a higher social status than by women from the lower strata. Apart from the mobility aspirations upper class women may have for their children, their upper class status does not require them to be dependent on their children in their old age.

There has also been a general shift toward smaller family size norms in more recent years, possibly due to the influence of the family planning program. Irrespective of their class backgrounds, younger women have smaller family size ideals than older women (path  $NA = .17$ ).

Religion, the final correlate of ideal family size, presents an anomaly. Earlier, it was noted that the Christian respondents tend to be more modern in their relationships than their Hindu counterparts. Yet, Christian women idealize larger families (path  $NR = -.09$ ). The upper caste Christian families in Kerala (35% of the 31 Christian respondents are upper castes) are predominantly a land owning class for whom large families are almost an economic

necessity. On the other hand, more than half the Christian respondents (65%) belong to the lowest castes in the hierarchy, a position compounded by their lower class status. Thus, while the joint role relationships among the Christians is a consequence of the organized nature of Christianity, their traditional family size norms is a more socioeconomic phenomenon. This discrepancy explains the contradictions in their role structure and ideal family size.

### Family Planning Norms

#### Attitude To Use Of Family Planning

While improvements in the standards of living, raising the status of women, and modern family size norms provide a conducive framework for limiting the size of the family, such reductions can be achieved only through deliberate control of reproduction. The variety of family planning methods available enables couples to effectively control their pregnancies. Nonetheless, efficient use of family planning presupposes a favorable disposition towards the methods (D).

One determinant of family planning attitudes of women in Kerala is their family size norms. As might be expected, women with modern (smaller) family size ideals also tend to be favorable to using family planning to achieve those small ideals effectively (path DN = .08).<sup>11</sup> Correspondence between

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<sup>11</sup>Family planning attitudes is scored in such a fashion that a lower score implies favorable dispositions.

family size norms and favorable dispositions to the means of actualizing those norms suggest a crystallization of modern family planning concepts.

Women with higher education also appear to favor use of some method(s) of family planning to control pregnancies in contrast to the less educated women. Limiting their family size can be expected to be more imperative to higher educated women (path  $DW = -.19$ ). Women with higher education would have similar aspirations for their children, a goal which can be accomplished more effectively if they have fewer children. Besides, these women would be more capable of evaluating objectively the usefulness and side effects of different methods rather than form hasty judgements based on hearsay. Contrary to the expected pattern, however, residents of Commercial City tend to be less favorable to the use of family planning compared to women from other areas (path  $DD2 = .15$ ). It was in the Commercial City that the first mass sterilization camps and other propaganda campaigns were conducted. Some of the adverse reaction of its residents may be a backlash against imaginary and real problems, such as harmful side effects, that accompany the initiation of such massive programs. Education allays some of these fears, even in the Commercial City. In other words, when respondents in the Commercial City have higher education themselves, they are more favorable to the practice of family planning (path  $DW.WD2 = -.03$ ). Such differentials in perception of family planning methods exemplify the modern

values that accompany educational developments in the course of modernization.

### Practice Of Family Planning

#### Parity Of Family Planning Initiation

Whether couples practice family planning or how effectively they use the method(s) of their choice would provide the proof of the intensity of the favorable disposition to family planning and consequently their modern status. Use of family planning early in the reproductive history (P) reflects the couple's desire to have control over their pregnancies and not to leave them to chance. As hypothesized, women who view family planning favorably initiated birth control much earlier than women who are opposed to it (path PD=.11). Similarly, women with smaller family size ideals also started family planning early in their pregnancy histories (path PN=.07). These women not only desire small families but attempt to actualize their norms. Early initiation of family planning is an effective tool in realizing their desires. Such congruity between attitudes and practice, although not widespread, once again, denotes the crystallization of modern fertility values and behavior.

Another, and even stronger precondition for early use of birth control is joint participation in familial roles by the couple (path PL=-.25). In contrast, when there exists a traditional division of labor between the couple in terms of the duties of the man and the wife, birth control is post-

ned. Joint participation by the couple essentially implies equality of the husband and wife's position in the family. It is not surprising that women who play an equal role tend to use family planning early. Women have more at stake in a pregnancy and their chances of using birth control to limit the size of the family to the size they desire are greater if they have an equal voice in the matter. Thus, the influence of role relationships on the timing of birth control is a consequence of the status of women in the family.

Age at marriage, like conjugal role relationships, is another significant correlate of family planning behavior (path  $PM = -.27$ ). Just as with joint role relationships, late marriages are a consequence of the improved social and economic status of the women. This improved status influences their fertility behavior too. In other words, the higher status of women who marry at a later age predisposes them to control their births early in order to minimize accidental pregnancies.

A fifth factor that determines how early a couple initiates use of family planning is the extent of infant mortality the couple has experienced. Specifically, women who have lost children tend to postpone deliberate control of pregnancies in order to replace the child deaths. Or they may desire to have a large number of children to insure against further losses. If early and effective use of family planning is to become more widespread, living standards



will have to improve so as to minimize child losses.

Yet another index of the timing of family planning initiation is the status of the respondent's family. Couples with an upper class background started controlling their pregnancies earlier than the poorer respondents (path  $PH = -.20$ ). Higher social status and early use of family planning are interrelated aspects of modern predispositions and behavior. Even more significant is the implication of the relative weakness of the impact of the husband's social status on family planning in comparison to the other indices of women's social status (particularly age at marriage and role relationships). It is surprising that in a male dominated society, the indices of women's social status are stronger correlates of family planning behavior.

The patterns delineated thus far suggest a definite class bias in the practice of family planning. However, changes in family planning behavior that surmount the class distinctions have occurred over time. It is evident in the strong impact of age of wife on the practice of birth control (path  $PA = .35$ ). It is to the credit of the family planning program initiated in the late sixties and early seventies that younger cohorts have departed from the traditional pattern and initiated birth control much earlier than their older counterparts.

One of the most unexpected findings in the study is the effect of residence in the Administrative Rural Area on family planning practice. These rural residents generally

initiated family planning earlier than the residents of the cities. Like age of the respondents, this pattern reflects the relative independence of family planning from modernization. Specifically, it is the family planning program in this area that is responsible for the widespread early adoption of birth control. Further, since women in the Administrative Rural Area tend to be younger, they have also benefitted from the more recent trend toward early use of family planning (path PA.rAD3=-.05).

Aside from these indirect links provided by the background variables, those traceable through the indices of primary and secondary modernization are very insignificant. Had the rural area been more developed, these modernization paths would have been significantly stronger, indicating once again, the complementarity of family planning and modernization.

In general, the differentials in the timing (parity) of the initiation of family planning signify the role of both modernization and the family planning program in modernizing family planning behavior. Moreover, in the realm of modernization, improving the status of women is an important precondition of early and efficient use of family planning.

### Sterilization Status

Sterilization (S), aside from being a method of family planning, is of interest because it is a terminal method and, therefore, presents one of the most effective means of shortening the reproductive span. It is also significant because the poorer segments of the population most frequently resort to it. As such, sterilization is different from the other reversible methods of birth control. While the timing and the use of temporary methods are indices of modernization, the use of sterilization presents an opposite pattern.

Couples who initiate family planning later in their reproductive span tend to resort to sterilization to a larger extent than those who started birth control earlier (path SP=.12). Sterilization, thus, becomes the final resort of couples who virtually had an uncontrolled pregnancy history and who in all probability have much larger families than they desired or could even sustain.

A more compelling argument for the attractiveness of sterilization to the lower class is evident in the effect of the family's social status on sterilization. It is the poorer segments of society that have resorted to the terminal method (path SH=-.14). In the absence of systematic and early control of reproduction, a permanent method that involves a single application seems most convenient for the lower class. In other words, couples who are poorer tend to postpone deliberate family planning until late in the preg-

nancy history when they decide to resort to sterilization (path SP.PH=-.02).

Sterilization has become more widespread only in recent years which is evident in the age of the respondents who have adopted it. As might be expected, the younger cohorts appear to favor sterilization more than the older women (path SA=-.24). But, when higher status involves modern fertility behavior, such as early initiation of family planning, younger women tend to accept the temporary methods (path SP.PA=.04).

One basic theme that exists among these contradictory patterns is that sterilization is the poor person's contraceptive, adopted as a last resort in the face of uncontrolled childbearing. Eventhough it is an almost perfect contraceptive, its role in reducing the family size is undercut by the fact that most couples who accept it, do so very late in their childbearing history. Further, despite its popularity in recent years, women with modern family planning behavior patterns utilize methods other than sterilization.

### Actual Family Size

Actual fertility, the central concept in this study, is the most important element of the population problem in India. In the final analysis, it is the number of children each couple has that will determine whether India's population will continue to grow or remain stable. It is, there-

fore, imperative to identify the social, economic, demographic, and family planning factors that fertility behavior is responsive to. To pose the issue differently, given the nature and degree of development and family planning practice in Kerala, what kind of family size patterns can be delineated? From a policy perspective, identifying the characteristics of the couples with small families will provide guidelines as to the directions the population program should adopt.

To begin with an aspect closest to fertility behavior, the influence of sterilization status on family size confirms its appeal to the less modernized segments of society. In other words, couples who have accepted sterilization are not only poorer and traditional in their family planning behavior, they also tend to have large families (path  $FS=.06$ ). On the contrary, early initiation of family planning is a very strong predictor of small family size (path  $FP=.64$ ). In fact, a couple which initiated family planning after their second child would have one child more than a couple who started family planning before the first pregnancy. Thus, a convincing case exists for the effective role of family planning in checking actual fertility. Early use of birth control also implies consistent and efficient planning throughout the pregnancy history. (The correlation between parity of family planning initiation and overall family planning effectiveness is  $-.62$ ). The strength of the direct influence of family planning practice on actual fer-

tility, after the effect of modernization has been controlled suggests the significant role of family planning in the noteworthy reduction in Kerala's population growth rate between 1961 and 1981.

Norms regarding family size is another deciding factor in the size of a couple's family. Women who idealize small families tend to conform to those norms and have smaller families (path FN=.08). In other words, subscribing to a small family norm generally provides the motivation to actualize those desires. Women with small family norms also tend to have initiated family planning earlier and have lower actual fertility (path FP.PN=.05). Early initiation of family planning is a more concrete proof of the intensity of motivation of the couples who desire small families. Whatever the reason, these patterns support the theoretical argument presented in Chapter II that actual fertility can be reduced if couples desire smaller families. Yet, small family size norms are not sufficient conditions for reducing the family size. Under the influence of the family planning propaganda, there is a general consensus on the desirability of the small family, a factor contributing to the small size of the path from fertility values to fertility behavior. Additional factors, from the realm of modernization are necessary to explain the differences in achieved family size.

It would, therefore, be simplistic to assign exclusive credit to family planning in slowing the population growth rate in Kerala. In the first place, modernization was found

to be a significant correlate of family planning practice in the discussion of family planning presented earlier. Secondly, and perhaps of greater significance, modernization, even if it is at the secondary level, does directly affect the number of children a couple has. As noted at the beginning of this chapter, three indices of modernization, age of the respondent, age at marriage, and infant mortality, that directly determine actual fertility have quantitative influences on fertility. Aside from their socioeconomic implications, the respondents' age and her age at marriage represent the number of years of the reproductive span available to the woman. The extent of infant mortality, similarly, quantitatively determines the number of surviving children. In short, the motivational aspects of modernization affect fertility by determining the amount of time a woman spends in reproduction or the number of surviving children.

A better understanding of the dynamics of family size can be achieved through a detailed analysis of the influence of the three indices of modernization on fertility behavior. Among the three factors, infant mortality, an index of economic development and health conditions, presents a unique case. According to the insurance and replacement hypotheses, couples who have experienced larger numbers of infant deaths can be expected to replace these losses or have many children to ensure the survival of a desirable number. Neither of these patterns is directly evident in Kerala. On the contrary, in the short run, infant mortality can be

expected to have a negative impact on effective fertility by reducing the number of surviving children. It is this short run influence that is evident in the negative direct relationship between infant mortality and family size (path  $FI = -.27$ ).

When couples experience child deaths, they do not seem to replace all of their lost children. Part of the explanation for the short term effects or the absence of influence of infant mortality could be found in the low level of infant mortality in Kerala coupled with the recency of the major decline in infant mortality since the 1960s. During 1974-76 Kerala had an infant mortality rate of 55 per 1000 live births compared to the national average of 132 per 1000 for the same period (Visaria and Visaria, 1981). At the same time, it is also probable that couples do have many insurance births and consequently experience more infant deaths. They, however, do not replace all the deaths because they may be fairly satisfied with the surviving number of children. Some concrete evidence of this motivational impact of infant mortality is also available. Couples who have experienced higher infant mortality postpone using birth control so as to either replace their lost children or to have insurance births. Consequently, such couples do have higher fertility (path  $FP.PI = .07$ ). Such contrasting and coexisting patterns (viz. quantitative and motivational) in the impact of infant mortality on fertility may be a reflection of the modernizing status of the soci-



ety.

Age at marriage and age of the respondent, the remaining two indices of modernization present a clearer picture of the ramifications of modernization for fertility. Women who marry late have smaller families compared to those who marry early (path FM=-.20). There has also been a gradual reduction in family size over the years as evidenced by the lower fertility of younger women (path FA=.19). Younger cohorts, irrespective of their backgrounds, have participated in the development, especially in the field of education that has occurred in Kerala since Independence. Such achievements help the younger women break away from the traditional pattern of high fertility characteristic of older women.

Another implication of the intermediary status of India's modernization lies in the indirect link provided by infant mortality. Younger women, because of the recent improvements in health and nutritional conditions, have experienced lower infant mortality. Yet, the very recency of these improvements ensuring the survival of more children, results in the higher fertility of the younger cohorts (path FI.IA=-.03). Conversely, some older women have smaller families because they experienced more infant deaths. In a word, while modernization does lead to fertility reduction, its effect is restricted, in the short run, by the limited degree and recency of modernization.

The role of modernization in curtailing fertility can

be strengthened considerably if such progress is accompanied by modern family planning practices. Even though younger women have smaller family sizes than the older respondents (path FA= .19), the fertility differences among the cohorts is even wider when the younger women initiated birth control earlier (path FP.PA=.24). In other words, younger women have experienced much lower fertility because they started planning their families early. Similarly, age at marriage has strong indirect effects on fertility through family planning behavior (path FP.PM=-.18) that equals its direct effect (-.20). Women who marry late, because of their higher socioeconomic status and modern values are modern in their fertility behavior (smaller family size) too. They, however, also use family planning early and hence have lower fertility. These patterns exemplify the interactions between modernization and family planning in reducing family size.

### Conclusion

Regardless of whether individual or aggregate level data is used, the data suggests one predominant pattern--Kerala appears to be in an intermediate stage of modernization where both traditional and modern elements coexist. For instance, at the individual level there has been an improvement in the educational achievements of women over time, irrespective of their familial and caste backgrounds. Yet, these women generally are not employed, either because

of subtle social sanctions against women's employment or the dearth of employment opportunities in a developing society. Use of aggregate level data provides a similar picture. As noted in Chapter I, while Kerala can boast of the higher social status of its women compared to the other states in India, it is still one of the economically poorest states.

Similar patterns can be delineated in the family planning practices in Kerala. Family planning services are widely available throughout the state and it has one of the highest rates of contraceptive acceptance in India (Visaria and Visaria, 1981: 24-25). Data presented in this study, however, reveal socioeconomic differentials in the practice of birth control. In the transitional stages of development of a society, early and effective practice of family planning can be expected to be more typical of the upper class than the poorer segments of the society. At the same time, it is to the credit of the family planning program that women in the Administrative Rural Area and younger women are more effective contraceptors in comparison to the city residents and older women respectively.

What are the implications of these mixed patterns for fertility? Modern status, exemplified by young women and women who marry late, and early and effective use of family planning are both significant characteristics of couples with small families. Family planning, however, has a stronger influence in reducing fertility than modernization. Specifically, those who initiated family planning early have

significantly lower fertility than those who enjoy a modern status. Consider two women with similar social statuses. If one of these women initiated family planning earlier than the other, the former, according to the data has a significantly smaller family size than the latter. Differences in fertility between two women who initiated birth control at the same time, but have different social and economic status, on the contrary, are not as pronounced.

Nonetheless, those women who adopted birth control early are generally more modern than the late initiators. But the relative weakness of the impact of modernization on family planning initiation and on actual family size (compared to that of family planning on fertility) suggests that there are women from less modern backgrounds who initiated birth control early and consequently have lower fertility. It is also probable that some higher status women initiated family planning later in their pregnancy histories and had large families. Thus, contrary to the predictions of the modernization and family planning perspectives, both modern family planning behavior and modern social and economic status have contributed to lower fertility in Kerala.

One of the principal contributors to the effective family planning status of the less modern women is the widespread availability of contraceptives made feasible by the family planning program. It is also possible to attribute the major credit for the reductions in fertility and in the rate of population growth in the 1970s in Kerala to the fam-

ily planning program which played an effective role in modernizing family planning behavior.

Despite its comparative weakness, modernization in itself has also been an important factor in controlling fertility. It has been equally effective in reducing family size by modifying birth control practices as is evident, for example, in the similarities of the strength of the direct effect of age at marriage on fertility ( $-.20$ ) and its indirect effect through family planning initiation ( $-.18$ ). As Kerala develops further, modernization can be expected to play a stronger role in curtailing fertility. A good case in point is infant mortality. The short term effects of lower infant mortality rates in increasing the family size by increasing the survival rates are predominant at present. At the same time, lower rates of infant mortality, even if to a lesser extent, does motivate couples to initiate family planning early in order to have smaller families. As documented by the Demographic transition theory, with the progress of modernization, such motivational influences of infant mortality in reducing the size of the family will become stronger.

Finally, there is a general and increasing consensus among the younger age groups, irrespective of their class and caste status, on the small family as the ideal for families for Kerala. Status differences still prevail in the family size norms; yet, they are not too prominent. Consequently, the impact of the family size ideals on the prac-

tice of family planning and actual fertility is not that strong. In other words, even though many couples idealize small families they not only do not practice family planning early in order to conform to those ideals but their actual fertility exceeds their ideals. Again, as the society develops and early adoption of birth control becomes more widespread the gap between the low ideals and actual fertility will be narrowed.

## CHAPTER VIII

### CONCLUSION

According to the preliminary reports of the 1981 census, Kerala is one of the three states whose population has grown at an average annual growth rate of 1.9% during the 1971-81 decade despite a 2.6% average annual increase during 1961-1971. If the results of this study are any indication, both the practice of family planning and modernization have played significant roles in curtailing fertility in Kerala, and consequently in slowing down its rate of population growth. The data, thus, lends exclusive credence to neither of the two competing approaches to population control. To recapitulate, according to the the exponents of the modernization perspective, unless a society develops economically and socially, programs to curtail population will not be effective. On the contrary, the family planning perspective best exemplified by the work of Tsui and Bogue (1978, 1979) contends that family planning programs have succeeded in controlling fertility even in societies with low levels of modernization. Hence, they argue it is not necessary for nations to postpone introducing family planning until they are modernized.

The Modernization And Family Planning Perspectives: A  
Reassessment

Research in the modernization and family planning traditions are generally conducted with the Demographic transition theory as either an explicit or an implicit organizing framework. Transition theorists, however, support only the broad thesis that societies experience demographic transitions from high mortality and fertility levels to low vital rates in the process of modernization. Aside from these broad patterns, not much uniformity exists in the actual process of the transitions of the developed and developing societies.

In the context of these broad processes, Coale (1974: 65) specified three conditions that will facilitate the decline in fertility. According to Coale, conscious fertility decisions must be an acceptable behavior pattern in a society; small families must be perceived as economically and socially advantageous; and birth control information and methods must be readily and easily available to the motivated couples. How can these conditions be achieved in a given society? The modernization and family planning perspectives are competing interpretations of the task of creating the motivation for small families and the desire to use family planning to limit family size. According to exponents of the modernization approach, improvements in the economic and social status of families will create the motivation to limit family size. In contrast, the family plan-



ning theorists postulate that family planning programs can create the required 'cognitive preparation' (Tsui and Bogue, 1979: 104) for accepting the small family norm and can also provide the birth control methods and services. In fact, family planning programs, they argue, can be successful even in societies with low levels of modernization.

Critical analysis of previous research cited by the family planning camp and the findings of the present study suggest the complementarity of modernization and family planning in reducing fertility. The uniqueness of individual or regional transitions will arise from the specific combinations of the extent of modernization and the effectiveness of the family planning programs. While developed nations completed their transitions during their modernization, trends in today's developing countries indicate possibilities for variations. Teitelbaum (1975: 177) points out one such important feature, among others: the role of governments in the national family planning programs of developing countries which can provide the methods of family planning and also legitimize the small family norm. Kerala, thus, presents a unique situation. It is highly developed in the fields of education and health care even though its per capita income and gross national product are considerably below the national average. At the same time, it also has a state wide family planning program providing services in both the rural and urban areas. With these patterns as a backdrop, this study provides evidence as to the specific

process through which Kerala has succeeded in reducing its fertility in an attempt to complete its transition.

Comparisons of the four areas representing different levels of modernization suggested that an effectively organized and implemented family planning program can be successful in modernizing family planning attitudes and behavior even in a rural area, such as the Administrative Rural Area. In contrast, respondents from Commercial City, where the regular family planning organization lacked leadership and dynamism, were comparatively traditional in their family planning norms and practices. Development in itself is, thus, insufficient to induce modern family planning behavior. However, the results also indicate the importance of modernization to the overall family planning histories of women in Kerala. As the data from Capital City suggest, a family planning program will be most successful if it is introduced in a relatively modern context in which couples can be assumed to be motivated to adopt family planning to limit their family size. Yet, as the experience of the Administrative Rural Area indicates it is not necessary to postpone introducing a family planning program until a society is well advanced in its modernization. To sum up, contrary to the expectations of the modernization perspective, even the modern couples will not adopt family planning unless the methods and services are readily available. On the contrary, family planning programs, however effective, are not sufficient to sustain the motivation and desires for

small families.

What roles do modern status and family planning behavior play in determining the fertility patterns among couples in Kerala? The data presented in this study indicate that family planning practices and modern status are synergistic in explaining differentials in fertility behavior. Initiation of family planning, particularly in the early stages of the pregnancy history, explains to a major extent why many women in Kerala have smaller families than others. Even the residents of the Administrative Rural Area--the least modernized of the four areas--started using family planning much earlier than residents of the cities and the Commercial Rural Area. Such patterns appear to support the family planning perspective.

But, modernization--operationalized as higher socioeconomic status of the family, higher age at marriage of the wife, fewer child losses, and joint role relationships between the husband and the wife--has been an important prerequisite for the early initiation of family planning. Women with modern characteristics, such as those younger women with a higher education (compared to the older women) and women who married when they were older, generally have fewer children. These modern women have lower fertility because they had also started family planning early in their childbearing process. Thus, fertility reductions in Kerala can be attributed to the interplay of modernization and family planning. Stated differently, the 'cognitive prepara-

tion' for accepting the small family norm and the means with which to actualize these norms have been created by both modernization and family planning programs in Kerala.

How can existing fertility patterns in Kerala be characterized? According to Schutzer's theory of demographic development (1978), Kerala's fertility levels are in the second stage of demographic development when achieved family size exceeds family size desires. It presents an opportune situation for the vigorous implementation of a family planning program at the grass roots level which would provide birth control information and methods and would continue to legitimize the small family norm. It is to the credit of the existing program that many younger women, irrespective of their socioeconomic backgrounds, idealize smaller families in contrast to older women. Social class differentials, however, exist in the family size norms of women in Kerala. Such class distinctions in ideal family size coupled with the class differences in family planning and fertility behavior suggest fertility in Kerala is in the process of changing from a predominantly biological to a socioeconomic phenomenon. That the transformation is, however, not complete is evident in the influence of infant mortality on actual fertility. Lower infant mortality results in the survival of a larger number of children implying that the actual family size is, to a limited extent, determined by biological factors outside the control of the couple. But, lower infant mortality motivates cou-

ples to have fewer children by initiating family planning early. As modernization progresses and as infant mortality is reduced further, the motivational influences of infant mortality in reducing family size will become stronger.

Improvements in the educational and occupational status of women are another aspect of modernization relevant to fertility. Although the socioeconomic status of women does not directly influence their fertility behavior, it is indirectly relevant. The more modern woman marries when she is older and consequently reduces her reproductive span and family size. Many such women who marry late are also more modern in their family planning behavior and, therefore, have fewer children. Another medium through which higher educational status of women affects family planning behavior and ultimately fertility (as suggested also by van den Walle and Knodel, 1980) is conjugal role relationships. Women with higher education tend to participate jointly with their husbands in family matters. They also tend to view family planning more favorably. Many such couples initiate family planning early in their childbearing history resulting in lower fertility. Improvements in the opportunities for women to participate in non-familial and familial sectors, could, therefore, be a significant method of achieving smaller families.

Easier access to sterilization, a permanent method of birth control, is yet another factor that will curtail fertility. Sterilization in Kerala, however, has been the poor

person's contraceptive. It is also more popular among the younger cohorts of women. Resumption of the mass vasectomy camps and the provision of the opportunities for post partum sterilization in the hospitals of Kerala, along with monetary and other incentives, will further reduce the rate of population growth.

Another interesting pattern, which is perhaps a reflection of modernization achieved in Kerala thus far, is the limited role of background factors in explaining fertility differentials. Area of residence of the respondents and their caste and religious backgrounds do not affect their fertility behavior directly. But membership in these groups, still, to a large extent, determines access to the progress achieved in the state. For example, city respondents, upper caste women, and urban Christians have a higher socioeconomic status than the rural, lower caste, and rural Christian women respectively. And it is these individual manifestations of modernization and family planning that influence actual fertility. In traditional Kerala, and for that matter in India with its strong collectivistic orientation, the social groups an individual belongs to determined many aspects of his life. The relative importance of individual traits over group attributes, is an indication of the modernization of the society and the concomittant attenuation of the influence of the group over the individual.

Variations in modernization, family planning, and fertility among the different age groups also exemplify the

declining importance of the influence of groups on individual behavior. Many younger women, despite their rural residence and lower caste status, have a higher socioeconomic status than the older women. Again, compared to the older cohorts, many younger respondents are more modern in their family size norms, family planning behavior, and actual fertility. These cohort differences suggest the progress in modernization that has been achieved over time, the success of the family planning program in the past decade, and the declining significance of social groups in determining participation in that progress.

In short, the results of this study support the revisionist version of the Demographic transition theory which upholds the concept of individual or regional transitions. Modernization, particularly improvements in the status of women and in health conditions, have contributed to Kerala's fertility declines. Family planning programs have reinforced the motivation for small families induced by modernization and have also provided the methods to actualize the desires for small families.

#### Major Policy Implications

On the basis of these results, several ways of improving programs designed to curtail fertility in Kerala can be suggested.

1. Rural areas should be involved in the modernization trends in Kerala to a greater extent.

2. More opportunities need to be provided for the lower castes to participate in the general social and economic progress.
3. Further improvements in the status of women are necessary to encourage modern family planning practices and lower fertility.
  - a) Higher education of women is a significant factor in improving the status of women.
  - b) Increased job opportunities that constitute a break from the traditional roles of housewife and mother, particularly for the educated women, are another means to improve their status in the family and in the society.
    - i) Education and employment of women will modify marriage practices, such as age at marriage, which reduce the reproductive span and family size.
    - ii) Improving the socioeconomic status of women will also facilitate their equal participation in family affairs leading to modern family planning practices and lower fertility.
4. Further reductions in infant mortality need to be achieved so that couples are motivated to have small families.
5. The mass vasectomy camps and hospital facilities for post partum sterilization should be revital-



ized, along with monetary and other incentives for acceptors.

6. Concurrently, continued and effective administration of the existing family planning programs are also required.

- a) Such programs will include regular field visits by the family planning workers to maintain continuous and intensive contacts with individual couples, particularly the poor. These periodic visits will sustain their interest in family planning and will motivate them to persevere in using birth control to curtail their family size.

- b) The family planning health centers will also make the information regarding temporary birth control methods and services readily and easily available.

Both modernization and family planning policies, thus, will be necessary to speed up the rate of fertility decline in Kerala. But, modernization cannot be achieved overnight. In the short run, therefore, it is necessary to coordinate the family planning programs efficiently so that the methods and services are available to all segments of the society.

### Limitations Of The Study

Although these patterns shed some light on the decline in the rate of population growth in the past decade, some caution needs to be exercised. This study uses cross-sectional data to evaluate the impact of modernization and family planning on fertility in Kerala. Time series data covering a span of at least two or three decades would have been more appropriate in assessing fertility trends. But such data, particularly at the individual level, is not available. Further, even though some trend data at the aggregate level is available, it is limited to the indices of socioeconomic modernization, such as education and infant mortality. Data on social psychological modernization (role relationships) can be attained only at the individual level of analysis.

Another limitation of the study can be found in the use of only women as respondents. The problem is particularly relevant to the social psychological variables, such as role relationships, and the attitudinal indices, ideal family size and family planning attitudes. Since women were the subjects of the interview, responses to these issues are basically the wives' family planning attitudes, their family size norms, and their perception of the kind of role relationships that they experience. Despite the validity of their perceptions, their husbands' opinions will also have an important bearing on their fertility. But interviewing men on private issues such as family planning use is nearly

impossible for a female researcher while financial limitations precluded the hiring of a male interviewer. Hence, the decision was made to limit the study to the wives, who are directly involved in the process of childbearing.

### Some Directions For Future Research

With these reservations in mind, it can be concluded that the practice of family planning has indeed considerably enhanced the effect of modernization. It would be interesting to examine the extent to which these relationships hold in the other states of India. In the absence of survey data for the other states, another possibility would be to use aggregate indices of fertility, of socioeconomic development, and of family planning programs and practices to determine the role of modernization and family planning among the states in India. A major advantage of using aggregate data is the availability of time series data. Three groups of states can be identified in terms of their population growth patterns. The first group consists of states similar to Kerala in that their populations grew by less than 2% per year during the 1971-1981 decade despite growing at the average rate of over 2% during 1961-71. Tamil Nadu, Orissa, and Kerala are the three states which have succeeded in reducing their population growth rates over the last twenty years. At the other extreme are states such as Uttar Pradesh, Bihar, and Andhra Pradesh which while having experienced average growth rates of lower than 2%

during 1961-71, grew by more than 2% during 1971-81. A third group consists of Karnataka, West Bengal, Maharashtra, and Gujerat, which have maintained above 2% average annual growth rates both during the 1961-71 and 1971-81 decades.<sup>1</sup> Relevant data can be collected for the states and the administrative districts within each state. Such analyses will aid in the identification of the elements that have hindered some states and aided others in controlling their growth rates. Family planning indicators can be expected to exert a more direct influence on fertility at the aggregate level also, with modernization being an important yet indirect influence on fertility.

Another interesting finding of this study that needs to be further researched is the nature of family planning organization and its administration in Kerala. Every district has its own family planning board which oversees the implementation of the program. An earlier study by Valsan (1977) on two districts, Ernakulam (which is included in the present research) and Malappuram, documented a major difference between the two. Despite the low level of socio-economic development of the Malappuram district, the leadership qualities of its medical personnel and the interest of its health staff were considered significant contributors to the practice of family planning among a large section of the

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<sup>1</sup>The data on population growth rates for India were obtained from Pravin Visaria and Leela Visaria, 1981.

eligible couples. In Ernakulam district, in contrast, the lack of dynamic leadership was often cited as a problem in the implementation of the family planning policies. Some indication of the poor performance in Ernakulam district is available in this study too. The respondents from the Administrative Rural Area, despite their lower socioeconomic status, were more modern in their family planning practices when compared with the sample from the urban and rural areas of Ernakulam district. Informal discussions and observations of the researcher during the fieldwork, in which the family planning health workers provided much assistance, revealed the enthusiasm of the medical leadership and the health staff in the urban and rural areas of Trivandrum district. Thus, further research into the administrative aspects of the family planning program in all the districts of Kerala will aid in improving the implementation of the program in districts that lag behind. Detailed analyses of the districts with effective family planning programs will suggest specific incentives and means of popularizing family planning. For, while modernization is an important indirect catalyst of lower fertility, the short run and immediate approach to the population problem lies in the effective organization and implementation of the family planning program.

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## APPENDIX A



## CONJUGAL ROLE RELATIONSHIPS AND ITS INDICES

Conjugal role relationships include seven indices dealing with seven aspects of family life. The first index--decision making--refers to who makes decisions in the following eleven matters: management of financial affairs, purchasing things for daily needs, buying and selling property and other expensive items, wife or husband taking up a job, education of children, training and disciplining children, marriage of children, size of the family, use of family planning methods, going for films and other forms of recreation, and allowing relatives to stay at home. This index is measured as (0) a member (mother, brother) outside the conjugal pair, (1) husband always, (2) wife always, (3) husband more than wife, (4) wife more than husband, and (5) husband and wife together. Apart from being a measure of jointness, these indices also include elements of wife's control. In a male dominated society, a woman who has some control in family affairs will be more effective in planning her family. Therefore, response 2 was placed after response 1 and response 4 after 3.

The extent of sharing index deals with the extent to which husband and wife share the following eleven activities--discussing work problems, daily chores, looking after children, teaching children at home, settling quarrels and training children, religious training of children, taking meals, spending free time, going for films or festivals,

playing with children, and discussing family planning problems. The responses are measured as (1) never, (2) rarely, (3) occasionally, (4) frequently, and (5) always.

Dealing with outsiders index refers to the roles the husband and the wife play in visiting in-laws and relatives, visiting friends, entertaining friends, keeping contact with children's school authorities, and employment of servants. The responses are ranked as follows: (1) husband always, (2) wife always, (3) husband visits and entertains his friends and relatives and contacts son's school authorities while the wife visits and entertains her relatives and friends and contacts the daughter's school authorities, (4) husband more than wife, (5) wife more than husband, and (6) husband and wife together.

The fourth index--participation in religious activities--covers family prayer, going to church or temple, and offering special prayers or poojas. On the religious participation index, the responses are ranked as (0) no belief in religion, (1) husband alone/husband and children, (2) wife alone/wife and children, (3) husband alone/wife alone, (4) husband more than wife, (5) wife more than husband, (6) husband and wife together/whole family.

The extent of disagreement index includes disagreement between husband and wife on matters such as financial affairs, leisure time activities, jobs to be done by the man in the home, dealing with in-laws, bringing up children, and household matters in general. The responses range from (1)

always (least joint), (2) to a very large extent, (3) to a large extent, (4) somewhat, (5) to a small extent, (6) to a very small extent, and (7) never (most joint).

The outcome of disagreements index is defined as what happens when there are disagreements between the husband and the wife. The responses to this index are ranked as (1) wife gives in and acts according to husband's wish, (2) husband gives in and comes around to wife's way, (3) sometimes the husband gives in while sometimes the wife gives in, and (4) discussion and compromise.

The final index, the pattern of solving disagreements is operationalized as how contained within the conjugal unit is the disagreement solving network. The responses are (1) mediation by friends, relatives, and children (most open), (2) mediation by children and relatives, (3) mediation by friends, (4) mediation by relatives, (5) mediation by children, (6) solve between themselves and mediation by children, and (7) solve between themselves. Containment includes two criteria: (1) how close to the conjugal pair is the problem solving network; and (2) how many different roles (both conjugal and non-conjugal) are involved in the mediation. According to the first criterion, mediation by children is closer to the conjugal pair than is mediation by relatives. On the basis of the second criterion, response number 2 implies more openness than mediation by relatives alone (response 4) or by children alone (response 5). However, response 6 was ranked before the last (and most closed

item) because it, unlike others, partially included problem solving between the couples too.

## APPENDIX B

## FAMILY PLANNING EFFECTIVENESS

Family planning effectiveness refers to the extent to which couples have succeeded in preventing unplanned or unwanted conceptions (Stokes, 1973: 300). Following Stokes, family planning effectiveness can be measured by classifying as planned or unplanned each pregnancy. The pregnancy is planned if use of family planning devices is not initiated so as to have a child or deliberately stopped to have a child(A). The rest of the pregnancy categories denote lack of planning in different ways. It is unplanned if the pregnancy occurred eventhough some method(s) was being used regularly, in which case it is termed an accidental pregnancy (B). A pregnancy is defined as unintended (C) if it occurred while use of some method had to be stopped for reasons such as health, side effects, running out of supplies, religious considerations, etc. If the pregnancy occurred before a method was used, but the child was not wanted immediately, it is called an unintended 'D' pregnancy. Finally, the 'never-thought-of-it' pregnancies are those which just happened in the course of the marriage without any of the above considerations.

## APPENDIX C

FAMILY SIZE DECISIONS IN KERALA, INDIA

Schedule No.

Tvm.Rural ( )

Tvm.Urban ( )

Ekm.Rural ( )

Ekm.Urban ( )

IDENTIFYING INFORMATION

A1. Name of the Head of the Household:

A2. Name of the Respondent:

A3. Address:

A4. Religion:

A5. Caste:

A6. Do you possess the following items?

1.A.C. ( ); 2. Car ( ); 3. Telephone ( );

4. Refrigerator ( ); 5. Motor Cycle ( ); 6. Radio ( );

7. Flush Latrine ( ); 8. Shower Bath ( ); 9. Geyser ( );

10. Cooking Range ( ); 11. Bicycle ( ); 12. Clock ( );

13. Steel Utensils ( ); 14. Settee ( );

15. Transistor ( ).





C. Pregnancy Record: Form II.

Sl. No.	Date of termination	Type of termination*	If alive, sex	Age, if living	If dead, Age at death

\* Type of Termination: (1) Live birth; (2) Still Birth; (3) Induced abortion; (4) Spontaneous abortion.

(Go over the Pregnancy Record. Ask C1 to C2 if there is an interval of two years or more between two pregnancies or since the last pregnancy. Ask C1 and C2 for each such relatively long pregnancy interval.)

C1. After the ---th delivery, ----years seem to have lapsed before you got pregnant the ---th time. Did we miss any pregnancies that occurred in this period?

Yes ( ); No ( ). (If yes, mark in Form B.)

C2. If no, was there any special reason why you did not

become pregnant for such a long time?

1. Husband away ( ); 2. Used birth control ( );

3. Had some difficulty in having children ( );

4. Any other (specify) ( ).

C3. Are you pregnant now? Yes ( ); No ( );

Do not know ( ).

C4. If yes, when is the baby due?

Year ( ); Month ( ).

#### D. Family Size

Inspect the pregnancy record and count the number of living sons and daughters.

No. of Sons ( )

No. of Daughters ( ).

Ask D1 to D3 to the non-sterilized respondents:

D1. How many (more) children do you want to have? ----

D2. Among these, how many boys and how many girls  
do you want to have?

---boys; ---girls; ---either sex O.K.

D3. Why do you want ---more children and not  
more or less?

For both sterilized and non-sterilized respondents:

D4. If your married life were to start all over again,  
you have as much money as you possibly need,  
and you could have just the number of  
children you want, how many would you want to have?

D5. Among these, how many boys and how many girls

would you want to have?

---boys; ---girls; ---either sex O.K.

D6. Why do you want ---children and not more or less?

D7. How many children would your husband want  
to have?

D8. Among these, how many boys and how many girls  
would he want to have?

---boys; ---girls; ---either sex O.K.

D9. Why does he want ---children and not more or less?

(Refer to the beginning of Section D and  
fill up the following)

Actual family Size ( ); Ideal Family Size ( ).

If actual is equal to ideal:

ask sterilized respondents D13 to D15 (b)

ask non-sterilized respondents D10 (a) to D10(e).

D10 (a) After the birth of the last child, have you  
been doing or will you be doing anything to  
avoid having any more children?

Yes ( ) Specify; No ( ).

D10 (b) If not, why not?

D10 (c) Are you satisfied with the sex combination of the number of children you have?

Yes ( ); No ( ).

D10 (d) If yes, is it because you are satisfied with the sex combination that your ideal has corresponded with your actual family size?

Yes ( ); No ( ).

D10 (e) If no, what are the other reasons?

(If actual is greater than ideal, ask both sterilized and non-sterilized respondents)

D11 (a) After the birth of any child, did you feel you had enough children and that you did not any more?

Yes ( ); No ( ).

D11 (b) If yes, after the birth of which child did you feel you wanted no more children? ---th child.

D11 (c) After the birth of that child, did you do anything to avoid having more children?

Yes ( ) Specify; No ( ).

D11 (d) If no, why didn't you?

D11 (e) Did the difference in sex combination

affect your decision concerning the actual number of children you have?

Yes ( ); No ( ).

(For sterilized respondents go to D13 to D15 (b)).

(If actual is less than ideal, ask non-sterilized respondents only)

D12 (a) Do you intend to complete the ideal number you would like to have? Yes ( ); No ( ).

D12 (b) If yes, why?

D12 (c) If not, why not?

(If actual is less than ideal, ask sterilized respondents only).

D13. Why did you decide not to have any more children and go in for sterilization?  
1. biological difficulty ( ); 2. satisfied with the number of children( ); 3. Satisfied with sex combination ( ); 4. Any other ( )

D14 Who took the final decision regarding sterilization?  
1. Husband ( ); 2. Wife ( ); 3. Together( );  
4. Others (specify).

D15 (a) Have you ever regretted your decision regarding sterilization? Yes ( ); No ( ).

D15 (b) If yes, give reasons.

Ask both sterilized and non-sterilized respondents.

D16 (a) How many children, do you think would be  
on the whole ideal for an average family in  
our place? ----children.

D16 (b) Among them, how many should be boys and  
how many girls?

---boys; ---girls; ---either sex O.K.

D17 Why do you consider ---children as ideal  
for an average family in our place?

D18 (a) How many children do you think would be  
on the whole ideal for a family like  
yours? ----children.

D18 (b) Among them, how many boys and how many girls?  
---boys; girls; ---either sex O.K.

D19 Why do you think ---children is ideal for a  
family such as yours?

D20 (a) Do you think it is alright for married  
couples who are physically able to produce  
children, to choose to have none at all?  
1. alright ( ); 2. Not right ( )

3. Any other (specify).

D20 (b) Why do you think so?

D21 How many years/months after marriage,  
should come the first baby?

D22 What is the interval you would prefer  
between child births?

D23 How many children would you like your  
son or daughter to have?

E. Family Planning Effectiveness

E1 How would you describe each of your pregnancies?  
Select one of the following responses.

- A) Planned--Use of family planning devices  
either not initiated or deliberately stopped  
to have a child.
- B) Accidental--With use of family planning method.
- C) Unintended--Use of family planning methods  
stopped for reasons such as health  
considerations, side effects, running out  
of supplies, religious considerations.
- D) Unintended--Without use of family  
planning methods.
- E) Never-thought-of-it.





E2. What is your attitude and your husband's attitude towards the use of family planning methods to prevent pregnancy?

Attitude	Wife	Husband
Indispensable		
Favorable		
Indifferent		
Unfavorable		
Totally Opposed		
Conditional		

E3 If conditional, explain:

E4 (a) Is there anyone in this household who disapproves of your using family planning methods to prevent or postpone pregnancy?  
Yes ( ); No ( ); Do not know ( ).

E4 (b) If yes, what is the reason for disapproval?

E5 What is your total monthly expenditure?

E6 Do you have (a) savings? (b) debts?

E7 Interviewer's Assessment of the respondent's status:

1. Upper class ( ); 2. Upper middle ( );
3. Lower middle ( ); 4. Lower ( )

E8 Housing condition:

- (a) Roof-----1.Thatched( ) 2.Tiled( ) 3.Terraced ( )  
 (b) Wall-----1.Mud ( ) 2.Brick( ) 3.Plastered( )  
 (c) Flooring-1.Cowdung( ) 2.Cement( ) 3.Mosaic ( )  
 (d)Latrine---1.Open ( ) 2.Pit ( ) 3.Flush ( )

F How are decisions on the following matters taken in your family? Choose from one of the following:

- (1).Husband always; (2). Husband more than wife;  
 (3). Husband and wife together; (4). Wife more than husband; (5) Wife always; (6) Any other (specify)

1.Management of financial affairs. i.e., who decides about spending money for various family needs:

2.Choice of things/shopping for day to day needs such as provisions, clothes, etc.: ---

3.Buying and selling property, building a house and purchase of other costly items: ---

4.Wife or husband taking up a job: ---

5.Education of children, i.e., matters such as the school or college to which they go, choice of subjects: ---

6.Training and disciplining children: ---

7.Marriage of children, i.e., choice of partner, marriage marriage expenses, etc.: ---

8.Number of children (Family Size): ---

9.Use of family planning methods: ---

10. Going for films and other forms of recreation: ---

11. Allowing relatives to stay at home: ---

G. To what extent do you and your husband share the following activities? Would you say:

(1) Never; (2) Rarely; (3) Occasionally;

(4) Frequently; (5) Always.

1. Discussing work problems: ---

2. Daily chores in the home, such as preparing food, cleaning up, minor repairs, shopping for provisions: ---

3. Looking after children: ---

4. Teaching children at home: ---

5. Settling quarrels and training children: ---

6. Religious training of children: ---

7. Taking meals: ---

8. Spending free time, such as chatting together, listening to the radio, going to the park, etc.: ---

9. Going for films or festivals: ---

10. Playing with children: ---

11. Discussing family planning problems (family size, use of family planning methods: ---

H. In dealing with outsiders, what part do you play

along with your husband? Would you say:

- (1)Husband always; (2)Husband more than wife;  
 (3). Husband and wife together; (4)Wife more  
 than husband; (5)Wife always.

- 1.Visiting in-laws and relatives: ---  
 2.Visiting friends: ---  
 3.Entertaining visitors: ---  
 4.Keeping contact with children's school  
 authorities: ---  
 5.Employment of servants: ---

I. How does your family participate in the  
 following activities? Would you say:

- (1)Husband alone; (2)Husband more than wife;  
 (3)Both together; (4)Wife more than husband;  
 (5)Wife alone; (6)Wife and children;  
 (7)Husband and children; (8)Whole family

- 1.Family prayer: ---  
 2.Going to church or temple: ---  
 3.Offering of special prayers or poojas: ---

J. To what extent do you have disagreements with  
 your husband on the following matters? Would you  
 say: (1)Always; (2)To a very large extent;  
 (3)To a large extent; (4)Somewhat; (5)To a small  
 extent; (6)To a very small extent; (7)Never.

1. Financial matters: ----
2. Leisure-Time activities: ----
3. Jobs to be done by the man in the house: ----
4. Dealing with in-laws: ----
5. Bringing up children: ----
6. Household matters: ----

K. When there are disagreements between you  
and your husband, what usually happens?

1. You give in and act according to his wish ( )
2. He gives in and comes around to your way ( )
3. Sometimes one way and sometimes the other ( )
4. Discussion and come to a compromise ( )

L. How do you solve your disagreements?

1. Mediation by friends ( )
2. Mediation by relatives ( )
3. Mediation by children ( )
4. Solve between yourselves ( )

Date: -----

## APPENDIX D

ORIGINAL AND REPRODUCED CORRELATIONS IN THE FERTILITY MODEL<sup>1,2,3</sup>

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	R	C	A	H	W	O
D <sub>1</sub>	1.0	-.4232	-.3341	.0239	-.1790	.2492	.4444	.3211	.0929
D <sub>2</sub>	...	1.0	-.3121	.1000	.0505	.0403	-.0639	-.0109	-.0405
D <sub>3</sub>	...	...	1.0	-.2689	-.0619	-.1345	-.2169	-.1783	-.0854
R	...	...	...	1.0	-.1038	-.0221	.0242	.0483	-.0324
C	...	...	...	...	1.0	-.1625	-.3194	-.2645	-.0424
A	...	...	...	...	...	1.0	.1941	.0509	.0759
H	...	...	-.1738	.0507	...	.1604	1.0	.7508	.2939
W	...	...	-.1408	.0496	...	...	...	1.0	.4664
O	...	...	-.0245	.0014	...	...	.3309	...	1.0

<sup>1</sup>Original correlations are above the diagonal; reproduced correlations are below the diagonal.



ORIGINAL AND REPRODUCED CORRELATIONS (Continued)<sup>1</sup>

	M	I	L	N	D	P	S	F
M	1.0	-.0019	.2674	-.1468	-.0499	-.3959	-.1509	-.4643
I	-.0340	1.0	-.0702	.0325	.0497	.1822	-.0891	-.1449
L	.2317	-.0407	1.0	-.1439	-.1417	-.4233	-.1294	-.3524
N	-.1510	.0357	-.0842	1.0	.1300	.2402	.1031	.2870
D	-.0983	.0195	-.1144	.1180	1.0	.2250	.1119	.1372
P	-.3993	.1834	-.3833	.2297	.2095	1.0	.0734	.7519
S	-.0991	-.0894	-.1136	.0196	.0446	.0763	1.0	.1269
F	-.4556	-.1368	-.2809	.2764	.1613	.7501	.1121	1.0

<sup>1</sup>Original correlations are above the diagonal; Reproduced correlations are below.

ORIGINAL AND REPRODUCED CORRELATIONS (Continued)<sup>2</sup>

	M	I	L	N	D	P	S	F
D <sub>1</sub>	.1358	-.0529	.2852	-.0964	-.1316	-.1106	.00	-.0720
D <sub>2</sub>	-.0326	.0479	-.0467	.0553	.1577	.1148	.00	.0846
D <sub>3</sub>	-.0561	.0114	-.1225	.0384	-.0828	-.0670	.00	-.0169
R	-.0049	-.0441	-.0505	-.0928	.0527	.0479	.0558	-.0304
C	-.1189	.0427	-.1643	.0739	.1242	.1105	.1403	.0891
D <sub>1</sub>	.1319	-.0243	.2852	-.0552	-.1285	-.0920	-.1281	-.0426
D <sub>2</sub>	-.0125	.0114	-.0691	.0111	.1541	.0974	.0101	.0705
D <sub>3</sub>	-.0543	.0057	-.0913	.0378	-.0703	-.0831	.0446	-.0634
R	.0176	-.0080	.0505	-.0997	-.0025	.0098	.0003	-.0076
C	-.1012	.0192	-.1428	.0503	.0612	.0875	.0906	.0490

2. Top panel contains the original correlations; Bottom panel contains the reproduced correlations.

ORIGINAL AND REPRODUCED CORRELATIONS (Continued)<sup>2</sup>

	M	I	L	N	D	P	S	F
A	.0383	.0816	.0136	.1273	.0537	.3313	-.2289	.3689
H	.3239	-.0927	.4540	-.1847	-.1683	-.3466	-.2156	-.2741
W	.4488	-.0887	.5192	-.2048	-.2055	-.4277	-.1654	-.3632
O	.3781	-.0076	.2386	-.0929	-.0366	-.2141	-.0841	-.1854
A	.0341	.0854	.0592	.1339	.0078	.3240	-.2255	.3649
H	.3328	-.0962	.4156	-.1933	-.1660	-.3564	-.2085	-.2643
W	...	-.0794	.5191	-.1762	-.2030	-.4063	-.1565	-.3401
O	...	-.0295	.2362	-.0840	-.1002	-.2159	-.0866	-.2021

2. Top panel--original correlations; Bottom panel--reproduced correlations

3. D<sub>1</sub>---Capital City  
D<sub>2</sub>---Commercial City  
D<sub>3</sub>---Administrative Rural Area  
R---Religion  
C---Caste  
A---Age of Wife  
H---Husband's Education  
W---Wife's Education  
O---Occupation of Wife  
M---Age at Marriage  
I---Infant Mortality  
L---Conjugal Role Relationships  
N---Ideal Family Size  
D---Family Planning Attitudes  
P---Parity of Family Planning Initiation  
S---Sterilization Status  
F---Actual Family Size

APPROVAL SHEET

The dissertation submitted by Marilyn Fernandez has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April 19, 1982  
Date

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