




**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

**By  
ZABEENA HAMEED P.**

Thesis submitted to the University of Calicut  
for the Award of the Degree of

**DOCTOR OF PHILOSOPHY IN ECONOMICS**

**DEPARTMENT OF ECONOMICS  
UNIVERSITY OF CALICUT  
Dr. JOHN MATTHAI CENTRE, ARANATTUKARA,  
THRISSUR - 680618  
SEPTEMBER 2007**



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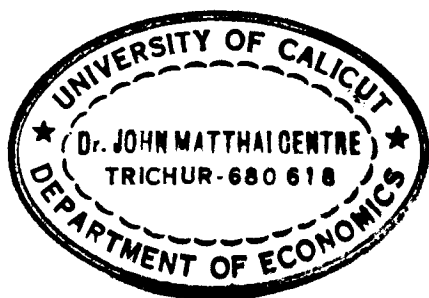
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## CERTIFICATE

Certified that this written account on "**Female Education and Demographic Transition in Kerala with Special Reference to Malappuram District**", submitted for the award of the Degree of Doctor of Philosophy of the University of Calicut is a bonafide record of research work done by Mrs. Zabeena Hameed P., under my supervision. No part of this has been submitted earlier for any other purpose.

Thrissur  
Date:



*Lakshmi Devi K.R*  
Prof. Lakshmi Devi K.R  
(Supervising Teacher)  
University of Calicut



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## DECLARATION

I, **Zabeena Hameed P**, do here by declare that this written account titled "**Female Education and Demographic Transition in Kerala with Special Reference to Malappuram District**" is a bonafide record of research work done by me under the guidance of Prof. Lakshmi Devi K.R, Department of Economics, University of Calicut. I also declare that this has not been submitted by me earlier for the award of any degree, diploma, title or recognition.

Thrissur  
Date: 13-09-2007

  
Zabeena Hameed P.



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*Dedicated to*

*My Beloved Mummy, Pappa, Ikka and Hanna*

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*Zabeena Hameed P.*



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## CONTENTS

| Chapter   | Page No.  |
|---|-----------|
| I INTRODUCTION  | 1 – 33    |
| II REVIEW OF LITERATURE   | 34 – 69   |
| III DEMOGRAPHIC TRANSITION IN INDIA- AN INTER-STATE COMPARISON                        | 70 – 110  |
| IV DEMOGRAPHIC TRANSITION IN KERALA – AN INTER-DISTRICT ANALYSIS                      | 111 – 160 |
| V PROFILE OF THE SAMPLE AREA AND THE SAMPLE WITH EMPHASIS ON EDUCATION AND EMPLOYMENT | 161 – 200 |
| VI FERTILITY AND FAMILY PLANNING  | 201 – 269 |
| VII ANALYSIS OF THE DETERMINANTS OF FERTILITY TRANSITION IN MALAPPURAM DISTRICT       | 270 – 285 |
| VIII SUMMARY, MAJOR FINDINGS AND CONCLUSION   | 286 - 309 |
| SELECT BIBLIOGRAPHY   |           |
| APPENDICES  |           |



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## LIST OF FIGURES

| <b>Figure No.</b> |  | <b>Page No.</b> |
|-------------------|--|-----------------|
| 2.1               | Analytical Framework of The Determinants of Demographic Transition | 63              |
| 3.1               | Ten Most Populous Countries of the World, 2001                     | 71              |



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## LIST OF TABLES

| Table No. |  | Page No. |
|-----------|--|----------|
| 3.1       | Compound Annual Growth Rate of Population in Selected Countries                                    | 72       |
| 3.2       | India's Global Position in Terms of Socio-Demographic Indicators                                   | 73       |
| 3.3       | India's Global Position on Human and Gender Development  | 74       |
| 3.4       | Demographic Diversity of India, 2001   | 78       |
| 3.5       | Size and Distribution of Population in India by Major States, 2001                                 | 80       |
| 3.6       | Percentage Decadal Growth Rate of Population by Major States, 1951-2001                            | 82       |
| 3.7       | Estimated Birth Rates for Major States in India by Residence 1981-2005 (Per Thousand)              | 83       |
| 3.8       | Estimated Death Rates for Major States in India by Residence 1981 - 2005 (Per thousand)            | 84       |
| 3.9       | Estimated Infant Mortality Rates by Residence for Major States of India 1981-2005                  | 85       |
| 3.10      | Estimated MMR for Major States in India-1997 – 2003 MMR/1 lakh Live Births                         | 87       |
| 3.11      | Estimated Natural Growth Rates of Population for Major States of India by Residence (Per thousand) | 88       |
| 3.12      | Estimated Total Fertility Rates for Major States of India (Per thousand)                           | 89       |
| 3.13      | Female Age at Effective Marriage by Residence from 1991 - 1997                                     | 91       |
| 3.14      | Current use of Family Planning Among Currently Married Women Aged 15-49                            | 92       |
| 3.15      | Life Expectancy at Birth by Sex in India-1991-1999   | 93       |
| 3.16      | Literacy Rates by Sex in India by Major States- 1981 to 2001                                       | 95       |
| 3.17      | Sex Ratio by Major States of India, 1951-2001  | 96       |
| 3.18      | Child Sex Ratio by Major States, 1991 and 2001   | 98       |
| 3.19      | Percentage of Population in the Age Group 0-6 by Major States of India, 1991 and 2001              | 99       |
| 3.20      | Density of Population in India by Major States   | 100      |
| 3.21      | Urban Population by Major States – 1961 – 2001   | 101      |
| 3.22      | Position of Major States on Primary Health and Education   | 102      |
| 3.23      | The Head Count Index of Poverty of Major States in India- 1973-74 and 1999-2000                    | 103      |
| 3.24      | Human Development Index of Major States, 1981-2001   | 104      |
| 3.25      | Gender Equality Index for India by Major States  | 105      |

|      |   |     |
|------|---|-----|
| 3.26 | Female Literacy and Demographic Variables- INDIA                                      | 107 |
| 3.27 | Correlation Matrix – Female Literacy and Demographic Variables-INDIA                  | 108 |
| 4.1  | Population of Kerala by Districts, 1961-2001  | 114 |
| 4.2  | Ranking of Districts by Population Size, 2001   | 115 |
| 4.3  | Percentage Decadal Variation in Population 1951-2001                                  | 116 |
| 4.4  | Total Fertility Rates in Kerala by Districts 1974-80 to 1994-01                       | 118 |
| 4.5  | Crude Birth Rate in Kerala by Districts 1974-80 to 1994-01                            | 119 |
| 4.6  | Trends in Mean Age at Marriage by Districts, 1971-1991                                | 120 |
| 4.7  | Proportion Married Below the Age of 20 and Below the Legal of Marriage, District wise | 121 |
| 4.8  | Couple Protection Rates of Districts, 1981-2004                                       | 123 |
| 4.9  | Knowledge and Current Use of Methods of Family Planning in Kerala, District Wise      | 124 |
| 4.10 | Child Woman, Ratios, 1991   | 126 |
| 4.11 | Dependency Ratio, 1991  | 127 |
| 4.12 | Crude Death Rates in Kerala, District Wise – 1970-2001                                | 128 |
| 4.13 | Infant Mortality Rates, District-wise – 1981-2001                                     | 130 |
| 4.14 | Estimated Infant and Child Mortality of Districts, 1991                               | 131 |
| 4.15 | Maternal Mortality Rates – District Wise, 1970 – 2001                                 | 132 |
| 4.16 | District wise Percentage of Literates in Kerala – 1901 to 2001                        | 133 |
| 4.17 | Sex -wise Literacy Rates by Districts of Kerala, 1981-2001                            | 135 |
| 4.18 | Number of Schools per lakh of School Age Population, 1981-2001                        | 136 |
| 4.19 | District wise Number of Arts and Science Colleges by Management, 1970-2000            | 138 |
| 4.20 | Sex ratio by Districts of Kerala – 1951-2001  | 139 |
| 4.21 | Density of Population in Kerala, District wise (1951-2000)                            | 140 |
| 4.22 | Sex-wise work Participation Rates-District-wise 1981-2001                             | 142 |
| 4.23 | Urban Population as a Percentage to the Total Population District wise, 1951-2001     | 143 |
| 4.24 | Number of Medical Institutions and Hospital Beds in Kerala, District Wise 1970-2006   | 145 |
| 4.25 | Percentage of Institutional Deliveries – District Wise                                | 146 |
| 4.26 | Percentage of Women aware of HIV/AIDS – District Wise                                 | 147 |
| 4.27 | Percapita Income in Kerala, District-wise (1980-81 – 1997-98)                         | 148 |
| 4.28 | District Wise Human Development Indicators and Human Development Index                | 149 |
| 4.29 | District wise Gender Related Development Index (GDI), 2001                            | 150 |
| 4.30 | Female Literacy and Demographic Variables   | 152 |

|       |   |     |
|-------|---|-----|
| 4.31  | Correlation Matrix - Female Literacy and Demographic Variables                          | 153 |
| 4.32  | Concentration Table – Female Literacy and Total Fertility Rate                          | 155 |
| 4.33  | Concentration Table – Female Literacy And Crude Birth Rate                              | 157 |
| 4.34  | Concentration Table – Female Literacy And Couple Protection Rate                        | 158 |
| 5.1   | Criteria for Selection of Samples   | 162 |
| 5.2   | Level of Education of Members of Sample Households                                      | 165 |
| 5.3   | Occupational Status of the Members of Sample Households                                 | 166 |
| 5.4   | Mean Years of Schooling, Religion Wise  | 170 |
| 5.5   | Mean Years of Schooling, Caste Wise   | 171 |
| 5.6   | Interest in Educating Children – Religion wise  | 172 |
| 5.7   | Attitude on Educating Girl Child on a par with Boy Child -Religion wise                 | 173 |
| 5.8   | Reasons for not Treating Girls on a par with Boys in Education                          | 174 |
| 5.9   | Attitude on whether Girls' Education is more Fruitful than Boys                         | 175 |
| 5.10  | Reasons for more Fruitfulness of Girls' Education – Religion-wise                       | 176 |
| 5.11  | Reasons for Not Allowing Girls to Go for Job – Religion wise                            | 177 |
| 5.12  | Reasons for Failure of Higher Education in Providing Increased Employment Opportunities | 178 |
| 5.13  | Benefits Other than Employment from Education   | 179 |
| 5.14  | Attitude on Whether Education Affects Marriage – Religion wise                          | 180 |
| 5.1.5 | Reasons for Not Making Use of Educational Facilities                                    | 181 |
| 5.16  | Reasons Cited for Educational Backwardness among Muslims                                | 183 |
| 5.17  | Suggestions to Improve Educational Backwardness Among Muslims                           | 184 |
| 5.18  | Reasons for Not Favouring Higher Education for Women on a Par with Men                  | 185 |
| 5.19  | Attitude of Family Members in Educating Respondent's Children                           | 186 |
| 5.20  | Desired Level of Education for Boys   | 187 |
| 5.21  | Desired Level of Education for Girls  | 188 |
| 5.22  | Type of Employment by Religion  | 191 |
| 5.23  | Sector of Work by Religion  | 192 |
| 5.24  | Nature of the Present Job by Religion   | 193 |
| 5.25  | Motivation for Working by Religion and Place of Residence                               | 194 |
| 5.26  | Average Monthly Salary by Religion  | 195 |
| 5.27  | Average Monthly Salary by Place of Residence and Nature of Family                       | 195 |
| 5.28  | Average Monthly Salary - Education-wise   | 196 |

|      |   |     |
|------|---|-----|
| 6.1  | Current Staying Status with Husband - Religion-wise   | 205 |
| 6.2  | Number of Wives to the Respondent's Husband   | 207 |
| 6.3  | Mean Age at First Marriage of Females by Religion and Education                                     | 208 |
| 6.4  | Mean Age of Females at the Time of Dissolving First Marriage  | 209 |
| 6.5  | Mean Age of Females at the Time of Current Marriage   | 210 |
| 6.6  | Mean age at Marriage by Year of Marriage  | 211 |
| 6.7  | Mean Age of Husband at the Time of Current Marriage   | 212 |
| 6.8  | Mean Age at First Pregnancy by Religion and Education   | 214 |
| 6.9  | Distribution of Respondents on the Basis of whether they Got a Surviving Child from First Pregnancy | 215 |
| 6.10 | Reasons for the Death of the Respondents' Children - Education-wise                                 | 216 |
| 6.11 | Occurrence of Stillbirths, Spontaneous and Induced Abortions – Education-wise                       | 218 |
| 6.12 | Number of Spontaneous Abortions by Place of Residence and Nature of Family                          | 220 |
| 6.13 | Incidence of Induced Abortions – Religion Wise  | 221 |
| 6.14 | Number of Pregnancies by Religion   | 222 |
| 6.15 | Number of Pregnancies by Education  | 223 |
| 6.16 | Mean Number of Pregnancies by Religion  | 224 |
| 6.17 | Mean number of Pregnancies -Caste wise  | 225 |
| 6.18 | Mean number of Pregnancies – Education-wise   | 225 |
| 6.19 | Mean number of Pregnancies - by Activity Status and Place of Residence                              | 225 |
| 6.20 | Mean Number of Pregnancies by Year of Marriage and Religion   | 226 |
| 6.21 | Reasons for Not Terminating Undesired Pregnancies - Religion-wise                                   | 229 |
| 6.22 | Decision Maker in Termination of Undesired Pregnancies, Religion-wise                               | 230 |
| 6.23 | Mean number of Children Ever Born, by Religion  | 231 |
| 6.24 | Mean number of Children Ever Born, by Place of Residence  | 232 |
| 6.25 | Mean Number of Children Ever Born by Education  | 233 |
| 6.26 | Mean Number of Children Ever Born by Activity Status  | 234 |
| 6.27 | Mean Number of Children by Year of Marriage and Religion  | 234 |
| 6.28 | Age Group and Number of Children Born   | 235 |
| 6.29 | Response on Whether Satisfied with the Number of Children, Religion-wise                            | 236 |
| 6.30 | Response on Whether Satisfied with the Sex Composition of Children –Religion Wise                   | 237 |

|      |   |     |
|------|---|-----|
| 6.31 | Number of Boys Respondents Like to Have   | 238 |
| 6.32 | Number of Girls Respondents Like to Have  | 239 |
| 6.33 | Preferred Size of Family by Religion  | 240 |
| 6.34 | Preferred Size of the Family - Rural/Urban wise   | 241 |
| 6.35 | Son Preference - Religion wise  | 242 |
| 6.36 | Opinion on the Importance of Having atleast one Son -Religion wise                                | 243 |
| 6.37 | Opinion on Fertility Behaviour in the Absence of Sons, Religion wise                              | 244 |
| 6.38 | Desired Number of Years of Spacing between Children - Religion-wise                               | 245 |
| 6.39 | Percentage who Tried to Delay Pregnancy by Religion   | 251 |
| 6.40 | Methods of Birth Control Used, Religion-wise  | 252 |
| 6.41 | Methods of Birth Control used, by Place of Residence  | 253 |
| 6.42 | Methods of Birth Control Used by Education  | 255 |
| 6.43 | Number of Living Children at the Time when Birth Control Methods was First used by Religion       | 256 |
| 6.44 | Number of Living Children when Birth Control Methods was used for the First Time - Education-wise | 258 |
| 6.45 | Decision-maker in Contraceptive use by Religion   | 260 |
| 6.46 | Factors that Motivated the Use of Birth Control - Religion-wise                                   | 261 |
| 6.47 | Age at the Time of Female Sterilization - Religion-wise   | 264 |
| 7.1  | Results of the Simple Regressions   | 271 |
| 7.2  | Analysis of the Impact of AAM, FED, HED, RIN and REL on CEB                                       | 277 |
| 7.3  | Influence of Male and Female Education on Children Ever Born                                      | 279 |
| 7.4  | Result of the Complete Model  | 282 |
| 7.5  | Results of the Reduced Model  | 283 |

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## **INTRODUCTION**

- 1.1 *Population and Economic Development*
- 1.2 *Importance of Education in Economic Development*
- 1.3 *Female Education and Demographic Transition*
- 1.4 *Socio-Economic Status of Muslims in India*
- 1.5 *Significance of the Study*
- 1.6 *Objectives of the Study*
- 1.7 *Methodology*
- 1.8 *Limitations of the Study*
- 1.9 *Chapter Scheme*

# CHAPTER - I

## INTRODUCTION

It is a well-known fact that economic development influences population growth and, population growth, in turn influences economic growth. This is because manpower provides the human labour essentially needed for economic growth and development. Every nation aims to attain development. Development is not purely an economic phenomenon. In its true sense development encompasses more than the material and financial side of people's lives.

Haq (1971)<sup>1</sup> rightly says- “the problem of development must be defined as a selective attack on the worst forms of poverty. Development goals must be defined in terms of progressive reduction and eventual elimination of malnutrition, disease, illiteracy, squalor, unemployment and inequalities”. Development should, therefore, be perceived as a multidimensional process involving the reorganization and reorientation of entire economic and social systems. In addition to improvements in income and output, it typically involves radical changes in institutional, social and administrative structures as well as in popular attitudes and in many cases, even customs and beliefs<sup>2</sup>.

On the whole, it is accepted that development is both an economic and social process and it is multi-dimensional because it involves a variety of inter-related factors leading to change. These factors can operate singly or collectively and brings about several changes, like—rise in the living standards, changes in food habits, attitudes towards women, caste system, social institutions, health care, transportation and communication, changes in family life and reproduction and educational attainment. Socio-economic transformation is the effective

solution to the problem of population growth and related issues. Thus, economic development is a central factor in the solution of population and interrelated problems.

Since its launch in 1990, the Human Development Report has defined human development as the process of enlarging people's choices. Human Development Report (1997)<sup>3</sup> rightly observes-“Human development is thus a process of widening people's choices as well as raising the level of well-being achieved”. According to Streeten<sup>4</sup>, human development is necessary because it helps in lowering family size by slowing human reproduction. He cites the experience of developed countries to establish his argument. It is the experience of all developed countries that improvement in education levels lead to a lowering of birth rates. While improved education facilities make people aware of the benefits of a small family (a higher income, better standard of living etc), reduction of infant mortality rate reduces the incentive of having large families, as fewer child deaths are now feared. Besides this, human development is also proposed as a means to higher productivity, reduction in poverty, attainment of political stability and good physical environment.

## **1.1 POPULATION AND ECONOMIC DEVELOPMENT**

The world's population is very unevenly distributed by geographic region, by fertility and mortality levels, and by age structure<sup>5</sup>. The structure of the world population shows that more than three-quarters of the world population live in developing countries and less than one fourth of it live in the economically developed nations. This signifies that growth rates of population are significantly high in the less developed countries of the world. An observation of the structure

of world population throws light on the fact that population is concentrated in three third world continents, namely- Asia, Africa and Latin America.

Studies on population and economic development are gaining importance because population explosion is a concrete reality in the third world countries, including India. The level of population in these countries has become larger than what can be sustained at the existing levels of development. As population is a major determinant of the level of development of a nation, quantitative analysis of population growth has recently received considerable attention. These works tries to find out the relationship between economic development and population dynamics. Different economists conceive the relationship between population and development differently. Some argue that population growth adds to economic development whereas the others argue that population growth hampers economic development. Some of these arguments are briefly examined below.

Malthus (1798)<sup>6</sup> states “population is necessarily limited by the means of subsistence” and observed that “an increase of population cannot take place without a proportionate or nearly proportionate increase of wealth.” Malthus postulated a universal tendency for the population of a country, unless checked by dwindling food supplies, to grow at a geometric rate, doubling every 30 to 40 years. At the same time, because of diminishing returns to land, food supplies could only expand roughly at an arithmetical rate. Malthus, therefore contended that the only way to avoid absolute poverty was for people to engage in moral restraint and limit the numbers of their progeny. Thus he believed that poor nations will never be able to rise much above subsistence levels of percapita income unless they initiate preventive checks (ie., birth control) on their

population growth. In the absence of such preventive checks, 'positive' checks (like disease, starvation and wars) on population growth will inevitably provide the restraining force.

The rate of growth of population of a country largely determines the rate of growth of the labour force. To Smith (1976)<sup>7</sup> the rate of population growth in the long term depends on the funds available for human sustenance. Population is proposed to decline if the prevailing wage rates are less than the subsistence wage rate and vice versa. Wages can also be temporarily higher than the subsistence wages, on account of short supply of labour and this, according to Smith, induce workers to multiply themselves faster. He asserts, "the demand for those who live by wages necessarily increases with the increase of the revenue and stock of every country and cannot possibly increase without it. The increase of revenue and stock is the increase in the wealth." Thus Smith's argument implies that in a growing economy, population will be increasing.

In his theory of low-level equilibrium trap, Nelson (1956)<sup>8</sup> says, "the malady of underdeveloped economies can be diagnosed as a stable equilibrium level of percapita income at or close to subsistence requirements". The rate of saving and investment are low in this low stable equilibrium level. In this theory, an increase in percapita income above the minimum subsistence level encourages the growth of population. This population growth, in turn, pushes down the percapita income again to the minimum subsistence level. Thus, the economy is caught up in a low level equilibrium trap and getting out of this trap requires an increase in growth rate of income to levels higher than the rates of increase in population. Thus, Nelson considers population growth as an obstacle to economic development.

The role of population as an income-depressing factor was also pointed out by Leibenstein (1967)<sup>9</sup>. In his critical minimum effort thesis; output depends on two variables – resources and population size. The author treats output as subject to diminishing returns with respect to population, whereas, population growth and the rate of net investment are considered as functions of percapita income. Leibenstein asserts that for every disturbance, no matter how large, the long-run effects of population growth will be more significant than the effects of induced investment. The author shows that increased percapita income leads to a growth of population and this growth, in turn, pulls the economy to the old level of low-level equilibrium.

Kuznets (1974)<sup>10</sup> is of the opinion that increasing population strains natural resources and human capital, and where the pressure on these resources is heavy, there the economic development is also rapid. He observed that the developed countries of the West recorded high rates of increase in percapita product (15 to 30 per cent per decade) over the last two decades, accompanied by substantial rates of population growth (around 10 per cent per decade). These countries achieved this spectacular growth rates though they were all at the time feeling growing pressures of population on their resource endowment. He also believed that the ratio of the number of knowledgeable persons increases at the same ratio with which population increases, thereby considers human beings as a source of knowledge. He also brought forth the idea of population as consumers and concluded that population of a country should be considered as a contributory factor in extra production, reduction in cost and increase in per capita income rather than any obstruction in any way.

## **1.2 IMPORTANCE OF EDUCATION IN ECONOMIC DEVELOPMENT**

Education as an investment in human resources plays an important role among the factors, which contribute to economic growth. Synchronizing with the human investment revolution in economic thought (Schultz, 1961)<sup>11</sup>, many countries around the world, and more particularly the newly independent developing countries, including India expanded their educational systems and made heavy investments in education. The rates of growth of educational systems in many countries exceeded their rates of economic growth. The colonial dependent economic relationships between Britain and India shaped the educational policies in British India. As a result, India had to start, after independence, almost at scratch, but has made significant progress during the post-independence period.

The system of education plays an important role in training, development and allocation of human resources in every nation. It is one of the most important agencies whereby a person with ability can rise from one status to another in social hierarchy. The entire culture, non-material and material both, are transmitted and changed through education from generation to generation. In a contemporary world, particularly in developing countries, modern education is seen as a means and as a goal for modernization.

In almost all countries, the provision of education is an important traditional function of the State next only to defence. In the recent decades this function of the State has gained a new meaning and dimension, because of the increasing awareness about the relationship between education and economic growth and social development<sup>12</sup>. It is also recognized that investment in education contributes significantly to the long run growth of an economy, as it

involves the participation of the masses in the development programmes - willingly, intelligently and efficiently.

The Government of India has recognized the pivotal role of education in development. The Constitution of independent India has resolved to provide elementary education free to every one. It stated: "the state shall endeavour to provide, within a period of ten years from the commencement of this constitution, for free and compulsory education for all children until they complete the age of fourteen years" (Article 45)<sup>13</sup>. The Government has accorded special importance to education not only in the country's Constitution but also in the Five Year Plans and made education an integral part of economic planning.

It was, however, the Education Commission (Kothari Commission, 1966)<sup>14</sup> that stressed the relationship between education and productivity and the critical role of education in national development clearly. The Fifth Five Year Plan recognised education as 'a key factor in production' and elementary education was made an important component of National Minimum Needs Programme of the plan. The 42<sup>nd</sup> Amendment to the Constitution in 1976 brought education, which was largely a state responsibility, into the 'Concurrent List', making it a responsibility of both the Union and the State Governments. The 73<sup>rd</sup> and 74<sup>th</sup> Amendments to the Constitution placed a greater role on local bodies for the development of education, among others. Elementary education has been made a fundamental right with the 86<sup>th</sup> Amendment to the Constitution in 2002. The Eighth Plan of India gives due importance to human development and aims the attainment of elementary education to all its citizens.

National policies laid stress on the promotion of education specifically, the need for eradicating illiteracy altogether, and to provide universal elementary education to all in the shortest possible time. They also laid special emphasis on vocational and technical education at the secondary level, and in the improvement of quality and relevance of higher education. Equity in education by gender, caste and socio-economic groups, and reduction in regional disparities in educational development have been the major objectives of educational planning in India.

The right of every individual to education is one of the first provisions of the Universal Declaration of Human Rights. But education is often neglected in societies struggling to meet the many needs of their people. Only recently has education received greater priority as planners finally recognized it as a key factor in determining the pace of development. In a developing country like India, the educational system becomes a powerful instrument of economic and social change for accelerating the process of transforming its traditional ways and means of living into those of modern society. But even after a period of more than five decades of planning, India is still very far from obtaining its basic goal of economic and social equality for a large section of its people. There is also a growing feeling among the masses that the large portion of educational facilities continues to benefit the already 'privileged' section of this country.

In India the state of education is bleak. It is very difficult to civilize a motely crowd hourly inflating in size. Besides the problems of quantity, our education systems are gripping with the problem of quality also. There exists vast differences in educational access in rural and urban areas and the poor functioning of the public schooling system appears to be a major constraint on

the rapid expansion of education. Moreover, vast disparities can be noticed in male and female educational enrolments and attainments. Females are often denied their right to get educated. This is mainly because of the extremely low parental motivation, which itself relating to the nature of gender relations, especially in north India. Besides this, early marriage and child bearing prevents girls from getting educated. In a country like India, women empowerment through education has special significance because women experience a number of handicaps on socio-economic fronts. This results in 'voiceless growth'<sup>15</sup>, which implies a situation where people are ruled by repressive regimes and women are given only a minor role in an economy's management and direction.

### **1.3 FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION**

The family is the world's smallest school. Most children in developing countries spend more time with their mothers than with any other educational medium, including school. In fact, it has been noticed that when women are educated, they tend to encourage their children to become educated as well. An educated woman almost always has more value and status in the eyes of her husband, her family and community.

Women and men are equal in every human concern in this world. They are equally competing in almost all spheres of work and power, and are equally achieving the set goals. Cultures, economy and politics may be barriers to women in certain parts of the globe; still women are marching ahead with great conviction and confidence to keep themselves at par with their counter parts in every affair. Even though religious taboos and customs do have a gripping hold over the women, she is all set to prove the world that she is no less than men. The last three decades have witnessed an upsurge in female economic

participation outside the home all over the world. Although the trend was first visible in the western industrialized nations, many of the developing countries too have witnessed significant growth in the female economic participation and upliftment.

The post-independence period has seen many positive steps to improve the socio-economic status of women. Women themselves have become keenly aware of their right and are spearheading movements across the country against social evils. This consciousness is largely due to an increase in women's literacy although there is still a long road to travel. The most important milestone in this journey is the 1993 Constitutional Reservation of one-third seats for women in the rural and urban local bodies. At the all India level, the National Commission for women was set up as a statutory body, which promotes women's socio-economic advancement among other things.

At the international level, United Nations declared the year 1975 as woman's year and the period between 1975-85 as woman's decade. The SAARC declared 1990 as the 'Year of the girl child' and 1991-2000 as the 'SAARC decade for the girl child' and India being one of the constituents of SAARC stands committed to the programmes. In the Programme of Action of International Conference on Population and Development (1998)<sup>16</sup>, education is considered as one of the most important means to empower women with the knowledge, skills and self-confidence necessary to participate fully in development processes.

An old Chinese proverb goes like this "If you are to plan for one year, you plant rice; if you are planning for five years, you plant trees, if you are planning for a generation and the future, you educate your children." Had this proverb

substituted 'girl' for 'children', it would have demonstrated that education of girls is one of the most rewarding investments a nation can make. Not only does it contribute to overall development, it also raises income, promotes health and increases productivity. Over the long term, the single most effective and enduring way of reducing population growth even more than by the diffusion of contraception, is by giving women more and better education.

Educated women marry later and tend to have fewer children (Davis, 1963<sup>17</sup>; Agarwala, 1966<sup>18</sup>; Cassen, 1978<sup>19</sup> and Rosenzweig and Schultz, 1985<sup>20</sup>). Educated women are also more likely to use effective methods of contraception and thereby reduce population growth (Becker, 1960<sup>21</sup>; Becker and Lewis, 1973<sup>22</sup> and Belmont and Marolla, 1973<sup>23</sup>). Mother's education may be even more important to her children's health (Freedman, 1975<sup>24</sup>; Schultz, 1969<sup>25</sup>, 1976<sup>26</sup>). An educated mother can raise a healthier family. She not only knows about nutrition, but may have learned how to respond to health related emergencies. The State of World Population (1990) states that a woman with atleast 7 years of education has 2.2 fewer children than a woman with no schooling and every year of a mother's schooling leads to a decrease of upto nine per cent in the mortality rate of under five children.

Education decisively determines a woman's access to paid employment (Folbre, 1994<sup>27</sup>). This improves her earning capacity, her overall health, control over her fertility, family size and spacing and the education and health of her family. On the other hand illiterate women are invariably caught in a vicious circle of poverty, repeated child bearing, ill health and powerlessness, lacking the means to break out of their predicament - education. Education may allow a woman to take the first steps towards self-determination and security. But her

society may forbid her from developing her newfound confidence. It is although women are allowed to see the possibilities, but not to translate what they have learned into improvements in their lives.

Even though the link between female education and demographic transition is very strong, there are various factors, which prevents female education. Lack of parental motivation, early marriage and child bearing are the major factors cutting short the education of girls. Though there are many obstacles both traditional and social in the way of the upliftment of woman, Indian woman have come out of their kitchens to face the world boldly. There is absolutely no field in which they have not made their mark. They have largely started taking to employment for various reasons like sheer economic necessity, to become financially independent, for psychological satisfaction, for self-expression, for personal satisfaction or just for escaping from the boredom of idling at home.

#### **1.4 SOCIO-ECONOMIC STATUS OF MUSLIMS IN INDIA**

In this section, we briefly examine the socio-economic status of Muslims in India. As Malappuram is our sample area, characterized by Muslim dominance, an insight into the socio-economic status of Muslims, and status of women in Islam is highly essential. There is no controversy about the fact that Muslims in India in general are a backward community, whatever criteria one may employ to identify the overall backwardness of the community. There are a number of features that distinguish Muslims from the other social groups in India. We briefly examine some aspects of Muslim population that are relevant in our study.

Muslims constitute the second largest religious group in India and thus the largest religious minority. The 2001 Census enumerated India's Muslim population at over 138 million. India is next only to Indonesia with regard to Muslim population and is close to the Muslim population of Pakistan and Bangladesh. Large variations are seen in the size of Muslim population among the districts of India (Sachar, 2006<sup>28</sup>). In twenty-five districts, the Muslim population exceeded one million each in the 2001 Census. The largest was in the district of Murshibad (3.7 million) followed by Malappuram.

Muslim population is less linked to land than the overall population, and this may be due to the particular type of works in which they are concentrated. Although Muslim population is predominantly rural, the level of urbanization among them has been higher than the population as a whole, even in 1961(Sachar, 2006<sup>29</sup>). On account of a number of historical factors, Muslims have generally been relatively more urbanized even in the past. In 2001, 35.7 per cent of Muslim population was urban compared to 27.8 per cent of the overall population.

In India, there has been a large decline in fertility in all the religious groups. The recent level of fertility observed for Muslims in 2001 Census is moderate. Fertility differentials exist by socio-economic characteristics and by regions. Hence, in states that have low fertility, the fertility of Muslims is also low. In fact, Muslims in the southern states have a comparatively lower fertility than seen in the north-central states. Low age at marriage of females and widow remarriage increases the females in the reproductive ages and this is an important factor that attributes to the relatively high fertility noted among Muslims. The use of contraception is widely prevalent among Muslims, but to a lesser degree

than the average. However, Muslim population growth has slowed down, as fertility has declined substantially, clearly showing that Muslims are well into demographic transition (Sachar, 2006)<sup>30</sup>. In the future, growth is bound to be slower and eventually population is bound to reach replacement level.

In India, the sex ratio is favourable to males and the Muslim population also exhibits a similar pattern, but it sustains an increasingly better sex ratio when compared with the general population (Sachar, 2006)<sup>31</sup>. The child sex ratio is highly unfavourable in India, and has declined steadily from 976 in 1961 to 927 in 2001, despite the fact that the female fetus has longevity. The National Family Health Survey<sup>32</sup> clearly indicates that Muslims have the highest child sex ratio of any social group in the country. It is 986 girls per 1000 boys among Muslims, 931 per 1000 among SCs/ STs, 914 per 1000 among Hindus and 859 per 1000 among other religious groups. It is noteworthy that Muslims were the only religious group, which experienced a rise in child sex ratio between 1992-93 to 1998-99. As against this, the Hindus experienced the largest decline of about 5 per cent in the child sex ratio in 1992-93.

Infant and childhood mortality among Muslims are lower than Hindus and is slightly lower than the national average and this can be on account of the concentration of Muslims in urban areas (Sachar, 2006)<sup>33</sup>. The Muslims have also experienced some of the largest declines in infant and child mortality rates among socio-religious groups in India, showing that Muslims have some advantage in child survival over the other religious groups. This can be attributed to better infant feeding (prolonged breastfeeding) and low work participation among females. Among Muslims, maternal mortality is also low and this may be

due to better maternal care. Life expectancy is also found to be high by one year among Muslims (Sachar, 2006<sup>34</sup>).

Muslims in India are socially, economically and politically backward. This backwardness is manifested in various forms – widespread illiteracy, low income, irregular employment and under representation in higher employment categories, high incidence of poverty and so on; showing a low level of human development. Muslims were late to enter social transition, especially in the attainment of education. This backwardness in education has a negative reflection on their social and economic standards of life, defined in terms of asset ownership, employment structure, marital status, assistance received from financial agencies etc. (Kareem, 1989<sup>35</sup>). Thus, Muslims are often caught in a vicious circle of low economic status that leads to educational backwardness, which in turn prevents Muslims from reaching higher employment categories. Literacy rate among Muslims in 2001 is far below the national average. Thus, provision of education is the only way to help Muslims, to empower them.

#### **1.4.1 Education of Muslims in India and Kerala**

Education among Muslims in India has been of two types – religious education through Islamic schools (Maktabs or Madrassas) and secular education designed to prepare a Muslim for an occupation and adult role in a society. The real foundation of Muslim education in India may be traced back to the establishment of the Delhi Sultanate in 1206 and the emergence of Delhi as an important seat of Islamic learning. In the regime of Mughals, female education was considered to be less important than male education, and little attention was given to its development. Education was a privilege mainly enjoyed by the higher sections of the society. Muslim widows imparted religious education and

taught Qur'an to girls in their own houses, as they believed it to be their duty. The role of Christian missionaries in the provision of female education is highly commendable. They were able to create an enlightened public who realized the importance of female education. When India attained Independence, considerable attention was given to female education and as a consequence, Muslim girls going to schools and colleges increased slowly but steadily.

Women in Kerala enjoy a higher socio-economic status when compared with their counterparts living in the rest of the country. But this does not mean complete uniformity in socio-economic status of women among all religious groups. The socio-economic conditions of Muslim women in Kerala are generally poor when compared with women in other communities. This low status for females on socio-economic front is primarily attributed to low levels of educational attainment and lack of autonomy.

Kerala, since long has had a sizeable Muslim population concentrated mainly in the Malabar region. It is believed that Islam came to Kerala during or immediately after the life of the Prophet Muhammed. Although Islam attaches great importance to education, Muslims have not shown much interest in education. Earlier, Muslims concentrated mainly on the in-depth study of Qur'an and Hadith and this was carried on through the Madrassas. The anti-colonialistic spirit among Muslims also led to the virtual neglect of modern formal education.

The Malabar Local Board Act of 1834 was the landmark in the history of education of Malappuram and this led to the growth of educational institutions in the district. Recently, there are notable changes in the educational aspirations and attainment in Malappuram district. The important reasons for this change are the impact of gulf migration and the increasing influence of religious movements

like Juma-at-Islami, Mujahidheen etc. These religious movements are instrumental in changing the outlook of the Muslims towards education and employment. The establishment of a number of institutions for providing primary education to collegiate education both in public and private sectors also changed the attitude of Muslims towards education.

#### **1.4.2 Status of Women in Islam**

Like all other religions, Islam also attach due priority to education. Islam assigns a very important place to the acquisition of knowledge and it's spreading. Knowledge (I'lm) is the lifeblood of Islam. The first revelation of Holy Qur'an to Prophet Muhammed (may peace be upon him), contains exhortions to read (Iqra'h). Islam stood for making education compulsory and universal and treated acquisition of education as a religious duty of both men and women. Thus Islam does not differentiate between males and females with respect to education. Islam gives due priority for women education and made it obligatory to their being true believers in God and Islam. Ayisha (R.A.W), wife of prophet Mohammed, was well known for her educational and intellectual attainment. Islam also recognized that women could not achieve perfection without knowledge. Acquisition of knowledge was as great a duty of woman as of man, for Islam wanted the woman folk to develop their rational faculties along with their physical ones and thus ascend to higher planes of spiritual existence. Thus Islam does not leave its followers in darkness nor it wants them to be imperfect.

Men and women are two equally important component parts of whole humanity. In Islam they are quite equal in their origin, their abode as well as in their place of return and are, as such entitled to similar and equal rights. Islam gave woman the right to life, to honour, and to property like men. Men and

women are also equal in their rights to realize their material needs in the world including similar rights to hold property and dispose of it as they wish. The Holy Qur'an says "Men shall have the benefit of what they achieve and acquire and women shall have the benefit of that which they similarly achieve and acquire" (Surah iv. Verse No:32).

But after acknowledging a perfectly equal status as human beings for both men and women, and treating them as equals, entitled to equal rights; Islam does, however, differentiate between man and woman with regard to their special functions in life. This differentiation is based on physiological, biological and psychological factors. The specialized functions of woman include conceiving and suckling and this calls for the emotional-cum-intellectual outfit of a special type. Women can discharge this at best. In Islam, husband is responsible for the maintenance of his wife and children and if he is unable to do so, the wife is permitted to look for and earn money for the maintenance of the family. Islam wants woman to be able and efficient, so that she may perform good deeds and serve mankind. Hence, she is allowed to go out for the attainment of good cause. History shows that women went for shopping, farm work and carried lawful business and trade during the early period of Islam. According to Islamic Shariah, the conception of a State is a welfare State, in which woman also plays an important role.

Marriage is enjoyed upon every Muslim. Marriage, according to Muhammedan Law, is simply a civil contract, as its validity does not depend on any religious ceremony. The legality of marriage depends upon the consent of the parties, which is called I'jab and Qabu'l, viz., declaration and acceptance; the presence of two male witnesses or one male and two females; and a dower to be

settled upon the woman. The Holy Quran says “ and give the women (on marriage) their dower as an obligation, ...” (Surah IV, Verse No. 4).

Islam had its roots and beginnings in the tribal society of the Arabs. Being a tribal society, it did not recognize the individual. The pre-islamic society was characterized by child marriage and girls were married at an early age. This was on account of the fear of capture of girls during times of war and the parents believed that their daughters might be dishonoured if they were not given in marriage before attaining puberty. Polygamy was popular and there was no hard and fast rule regarding the number of wives for an Arab. The husband was free to divorce his wife whenever he felt doing so whereas the wife had no such freedom. Moreover, women at that time did not have any property rights, since they themselves were looked upon as property. Thus it is generally believed that the women in pre-Islamic society were given an inferior position and their status was really pathetic.

Islam improved the position of woman in several aspects. The reforms instituted by Prophet Muhammed effected a marked improvement in the status of woman. It prohibited female infanticide, restricted polygamy, assigned a share of inheritance to woman, declared ‘Mehar’ as a gift to the bride, gave freedom for female remarriage after divorce and encouraged female education and knowledge. Islam grants a conditional permission to marry upto four, and this is often misunderstood. The Holy Qur’an says “if ye fear that ye shall not be able to deal justly with the orphans, marry woman of your choice, two or three or four; but if ye fear that ye shall not be able to deal justly (with them), then only one or that which your right hands possess. That will be more suitable, to prevent you from doing injustice” (Surah IV, Verse No. 3). Qur’an, Hadith and other

religious books provides evidence on the fact that woman is not badly treated in Islam. In fact, it gives emphasis for justice to women and treats with great respect and honour.

Unfortunately, in actual practice, the tendency seems to be to overlook or misinterpret the principles and orders of the Qur'an and consequently to accord to her an inferior status. It so happened that the Muslim community is perhaps, the most educationally backward at present and so far as women are concerned, it seems the Qur'anic principles and orders have been completely neglected. The anti-British spirit that developed as a response against colonialism, led to the virtual neglect of western system of education. Besides this, as Mujeeb (1972)<sup>36</sup> observed, this actual practice was based on the custom of the family, which was the custom of the community or the professional group to which the family belonged rather than the religion. As Muslim family was a re-creation of the Arab family within the ethical confines of Islam, it seems that the ethical premises relating to women's position in society, and especially her rights and privileges never appealed to the Muslim males who was determined to exercise his undisputed authority in the family and so his dominance over family members.

## **1.5 SIGNIFICANCE OF THE STUDY**

Kerala possesses unique features in demography - in its quantity and quality. Studies have been made by eminent economists on demographic transition in Kerala from various angles. Even though the relationship between female education and demographic transition have been attempted at the state level, little effort has been made in studying the impact of female education on the demography of the demographically vulnerable districts of Kerala, like

Malappuram. The present study is an attempt to analyse the extent of the influence of education, especially female education on the demography of Kerala state in general and Malappuram district in particular.

Kerala exhibits favourable demographic features and trends and hence is often cited as a model for other states of India and to the rest of the world. However, Malappuram district is an exception to the general trend observed in demographic transition in Kerala. Malappuram district is the district, which has the largest size of population and the highest rate of growth of population. Among the districts of Kerala, Crude Birth Rate, Total Fertility Rate, Child Mortality Rate and the proportion of males and females married below the age of twenty are highest in Malappuram. Besides this, Mean Age at Marriage and Couple Protection Rate is the lowest in Malappuram district. Thus, among the districts of Kerala, Malappuram district is the demographically vulnerable one. Various socio-economic factors influence fertility and the place and role of a child in a family and in a society are different across different families and societies. Therefore for an in-depth analysis we take Malappuram and we hope to capture the causes and dimensions of the particular demographic features seen in this district.

## **1.6 OBJECTIVES OF THE STUDY**

The following are the objectives of the study.

1. To examine the trend and pattern of demographic transition in India by major states, with emphasis on the state of Kerala.
2. To analyse the trend and pattern of demographic transition in Kerala, district-wise with special reference to Malappuram District.

3. To analyse the role of education, particularly female education on the demographic variables of the state, and
4. To discern the influence of socio-economic factors in demographic transition in Malappuram District on the basis of the primary data.

## **1.7 METHODOLOGY**

### **1.7.1 Data Source**

This study relies on both primary and secondary data for the purpose of analysis. Reports and publications of the various departments of the Government of India and Kerala serve as the main source of secondary data. Census Reports, Reports of the Directorate of Economics and Statistics, Economic Reviews, Economic Surveys, Human Development Reports, Sample Registration System Reports, Reproductive and Child Health Reports and National Family Health Survey Reports have been made use of for the study. Besides these, volumes of World Bank Economic Review, Population and Development Review, Journal of Social and Economic Development, Yale Economic Growth Center Discussion Papers, Centre for Development Studies Working Papers, Journal of Population Economics, Economic and Political Weekly, Yojana and Southern Economist have also been used for the purpose of the study. Primary data have been collected from Malappuram district.

### **1.7.2 Sample Selection**

With the help of detailed survey schedule, information was gathered on education, employment, reproduction, contraception and socio-political involvement from 307 households of Malappuram district. Our sample consists of females who are ever married and the samples are proportionate to rural-urban

population of 1991 Census. Accordingly, out of 307 samples, 75 are from urban areas and 232 are from rural areas. Samples of rural areas were collected from four Panchayaths - Cherukavu, Thanur, Thirunavaya and Vettathoor. The criteria for the selection of samples were the literacy rate and sex ratio of the Panchayaths. Cherukavu Panchayath is having the highest level of literacy in Malappuram district while Thanur is having the lowest. Thirunavaya Panchayath is having the highest sex ratio among the panchayaths of Malappuram while it is lowest in Vettathoor Panchayath.

### **1.7.3 Concepts and Definitions**

The numerical exposition of human population is sometimes called 'demography', which is basically concerned with the behaviour of the aggregates. Demography deals with the process of replacement. The membership of a society or nation changes constantly on account of occurrence of births, deaths, immigration and emigration. Some of these events add to the existing population where as others reduce the population. Hence the measurement of fertility and mortality is of utmost importance in the studies on population. Here, an attempt is made to discuss the important and necessary concepts in the study and measurement of fertility and mortality.

**Fertility:** Fertility is measured as the frequency of births in a population. In the words of Barclay (1958)<sup>37</sup>, "fertility is an actual level of performance, based on the number of live births that occur". Fertility is different from fecundity, the potential level of performance (or physical capacity for bearing children) of the population. Fecundity sets an upper limit to fertility. The

study of fertility does not indicate the level of fecundity, for which there is no direct measurement.

**Crude Birth Rate (CBR):** It is an index of the relative speed at which additions are being made to the population through childbirth. It is the simplest method of measuring fertility in which the number of births is related to the total population. Since it is only a live birth that signifies an addition to the existing population, live births alone are considered in measuring fertility, thus excluding stillbirths. The annual CBR is defined as:

$$\text{CBR} = \frac{\text{Annual births}}{\text{Annual mean population}} \times 1000$$

**Total Fertility Rate (TFR):** It is the mean number of children which a female aged 15 can expect to bear if she lives until atleast the age of 50, provided she is subject to the given fertility conditions over the whole of her child-bearing period. The TFR of a particular area during a given period is a summary measure of the fertility conditions operating in that area during that period. TFR is the sum of Age Specific Fertility Rates from a given age to the last point of childbearing age of a female. In practice; working in quinquennial age groups shortens this procedure. We define the ASFR for group 'x' year and under (x + 5) as:

$$\text{ASFR} = \frac{\text{Annual births to females aged x and under (x + 5)}}{\text{Mean numbers of females aged x and under (x + 5)}} \times 1000$$

Such a SFR is the rate per 1000 per annum at which females in the particular age group produce offspring. If we add the quinquennial SFR's and multiply by 5,

we shall have the total number of children which 1000 females aged 15 will bear over their lifetimes. Symbolically,

$$TFR = \sum SFR \times i$$

where  $i$  = the magnitude of the age class

**Mortality:** Analysis of mortality contributes to the study of replacement and population growth. Mortality affects and influences both fertility as well as birth rate. “Mortality” however, is not a single factor to be expressed as a single number or index (Barclay, 1958<sup>38</sup>). This is because the risk of death has to be measured in several aspects. Most types of death rates are specific, which means that they pertain to some specified portion of a population and as such, various kinds of death rates are employed.

**Crude Death Rate (CDR):** The most common measure of mortality is the crude death rate. The crude death rate is the ratio of the total number of deaths occurring in an area during a calendar year to the mid year estimated population of the same geographical area during the year expressed per 1000. It can be expressed as:

$$CDR = \frac{\text{Annual deaths}}{\text{Annual mean population}} \times 1000$$

**Infant Mortality Rate (IMR):** Infant mortality take a heavy toll of life because infants are a large portion of a total population and hence even a fairly low death rate implies a substantial number of infant deaths. Infant mortality rate measures death rates under one year of age of the newly born babies in a given period of time.

$$\text{IMR} = \frac{\text{Deaths}}{\text{Births}} \times 1000$$

**Maternal Mortality Rate:** Maternal mortality is the ratio of the number of deaths occurring in a calendar year to the total number of live births in a year. It can be expressed as follows:

$$\text{MMR} = \frac{\text{Number of maternal deaths to women in the age group 15 - 49}}{\text{Number of live births}} \times 100,000$$

**Stillbirth:** It is defined as foetal death occurring late in the gestation of pregnancy, late is usually defined as after 28 completed weeks of gestation.

**Foetal Deaths:** Foetal deaths can be induced or uninduced. Induced foetal deaths are called induced abortions whereas uninduced foetal deaths are called spontaneous abortions. Foetal death is a death prior to complete expulsion or extraction from its mother a product of conception irrespective of the duration of pregnancy; the death is indicated by the fact that after extraction, the foetus does not breathe or show any other evidence of life.

**Live Births:** Live birth is the complete expulsion or extraction from the mother of a product of conception irrespective of duration of pregnancy, which after such separation breathes or shows evidence of life such as beating of the heart, pulsation of umbilical cord or definite movement of voluntary muscles whether or not the umbilical cord has been cut or the placenta is attached, each product of such birth is considered live birth.

**Reproductive Span:** It indicates the childbearing period of women. Only women can conceive and give birth to children and that too within certain age limits.

**Family Size:** It denotes the total number of children, a woman or a couple has borne at a point of time. The completed family size indicates the total number of children borne by a woman upto the end of her reproductive span.

**Child Mortality Rate:** This refers to a number of deaths among children 1 to 4 years of age per 1000 children of that age in a given year. It represents under five mortality.

**Children Ever Born:** This refers to the total number of children ever born alive. It includes both living and dead children.

**Demographic Transition:** The phasing out process of population growth rates from a virtually stagnant growth rate characterized by high birth and death rates, through a rapid growth stage with high birth rates and low death rates, to a stable, low growth stage in which birth and death rates are low.

**Family Planning Programmes:** Public Programmes designed to help the couples or parents to plan and regulate their family size in accordance with their ability to support a family. The programme usually includes the supply of contraceptives to adult population, education on the use of birth control devices, mass media propaganda on benefits from smaller families, and pre and post-natal health care for mothers.

#### **1.7.4 Methods of Analysis**

The study is descriptive as well as analytical. It makes use of statistical tools like bivariate tables, percentages, measures of central tendency, correlation and simple and multiple regressions for the purpose of analysis. The trend and pattern of demographic transition among the major states of India and districts of Kerala have been studied with the help of cross section data. The effect of female

education on demographic transition has been analyzed with the help of bivariate tables, concentration tables and correlation matrix. The influence of various socio-economic factors in demographic transition in Malappuram has been studied by using bivariate tables, averages, simple and multiple regressions. Multivariate analytical framework is used as it provides us an opportunity to analyze the various socio-economic factors affecting fertility behaviour and to understand the process of family formation.

Ten simple regression models have been used to understand the individual influence of various socio-economic factors on the number of children born to our samples. The dependent variable, viz., children ever born (CEB) is regressed upon independent variables, viz., age at marriage (AAM), number of years of husbands migration (MIG), number of years of female education (FED), religion (REL), number of years of husband's education (HED), female employment (EMP), family income (FIN), place of residence (PRE), nature of family (NFA) and female income (RIN). Here, REL, EMP, PRE and NFA are dummy variables.

To discern the important factors affecting fertility, four multiple regression models are used. The models can be expressed as follows:

$$CEB = \alpha_0 + \beta_1 AAM + \beta_2 FED + \beta_3 HED + \beta_4 RIN + \beta_5 REL + U \quad (1)$$

$$CEB = \alpha_0 + \beta_1 FED + \beta_2 HED + U \quad (2)$$

$$CEB = \alpha_0 + \beta_1 MIG + \beta_2 AAM, \beta_3 FED + \beta_4 REL \\ + \beta_5 HED + \beta_6 EMP + \beta_7 FIN + \beta_8 PRE + \beta_9 NFA + \beta_{10} RIN + U \quad (3)$$

$$CEB = \alpha_0 + \beta_1 AAM + \beta_2 FED + \beta_3 FIN + U \quad (4)$$

where,

- CEB = Children Ever Born
- AAM = Age at Marriage of Females
- FED = Number of years of Female education
- HED = Number of years of Husband's education
- RIN = Female Income
- REL = Religion
- MIG = Number of years of Husband's migration
- EMP = Female Employment
- FIN = Family Income
- PRE = Place of Residence
- NFA = Nature of Family

## **1.8 LIMITATIONS OF THE STUDY**

The study is limited in its scope. As our sample area is Malappuram, dominated by Muslims, our study focuses on the fertility in Malappuram and among Muslims. Among our samples, 74 per cent belongs to Islam and hence comparison with other religious groups requires adequate representation of non-Muslims. As work participation rate is the lowest in the district of Malappuram, we could not incorporate more employed samples, as this would require deliberate inclusion of employed women as samples. Besides, some of the respondents were reluctant to give information on income, wealth, abortions and contraceptive use. The study is also handicapped due the non-availability of reliable secondary data related to fertility and family planning, especially at the district level. Hence we have been forced to depend on the individual estimates

prepared by economists and demographers for variables like infant mortality, total fertility, mean age at marriage, couple protection rates etc. Besides this, there exists wide disparity in the data provided by various sources on demographic variables, especially for infant mortality rate. However, the general results emerging from this study will be useful for policy decisions relating to fertility and women's education.

## **1.9 CHAPTER SCHEME**

The study has been divided into eight chapters. The present chapter is an introductory one, which looks into the link between population and economic development, education and economic development, female education and demographic transition, socio-economic status of Muslims in India, significance of the study, objectives and methodology of the study. The second chapter deals with the review of literature at international, national and state levels and focuses on the theoretical issues related to fertility. Considering fifteen major states, the third chapter gives an inter-state comparison of demographic transition in India, with special focus on the state of Kerala. An inter-district analysis of demographic transition in Kerala with special emphasis on Malappuram district is presented in the fourth chapter. The fifth chapter deals with the analysis of primary data on education, employment, socio-economic variables and the general details pertaining to the household. The sixth chapter is a detailed presentation of the fertility and contraceptive behaviour of our samples. The seventh chapter focuses on model building to measure the relative inference of age at marriage, education, religion, family structure, migration, income, employment and urbanization on fertility. The eighth chapter is on conclusion and major findings of the study.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

**By  
ZABEENA HAMEED P.**

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CHAPTER II

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**REVIEW OF LITERATURE**

- 2.1 *Studies at the International Level*
- 2.2 *Studies at the National Level*
- 2.3 *Studies at the State Level*
- 2.4 *Theoretical Issues on Fertility*
  - 2.4.1 *Fertility and Contraceptive Use*
  - 2.4.2 *Fertility and Child Mortality*
  - 2.4.3 *Fertility and Maternal Education*
- 2.5 *Conclusion*

## CHAPTER - II

### REVIEW OF LITERATURE

Empirical evidence on the link between fertility and female education in countries generally show a negative relationship. Educated women tend to desire smaller families despite the fact that they are usually able to afford more children. There are several explanations to this behaviour. Higher incomes may in fact lead people to want fewer children, at the same time they wish to spend more on each of their children, which makes it expensive to have large numbers of children. Greater parental income also reduces the need for large numbers of children to provide support in the old age. Besides these, female education raises the opportunity cost of children. Aside from these income and price effects, female education may also change preferences, inducing a switch over from child quantity to quality. Education may also affect fertility via supply factors. ie, female education is found to be strongly associated with improved child survival and contraceptive practices.

Eminent economists and demographers have conducted several studies on various aspects of demography. Of the varieties of demographic variables to which sustained attention and major efforts have been directed, fertility remains among the most inexplicable, even though it has received the most attention. Immense efforts have gone into the analysis of both historical and contemporary data on fertility patterns and their changes, and this literature is truly daunting. Hence, we attempt to examine a small, but quite significant piece of the larger puzzle; the relationships that join education and literacy to fertility patterns, or, perhaps more accurately, those relationships that are sometimes said or found to

relate these factors. Here we attempt to review the literature at international, national and state levels.

## **2.1 STUDIES AT THE INTERNATIONAL LEVEL**

Caldwell (1980)<sup>1</sup> proposes mechanisms through which mass education produces decline in fertility and reviews the evidence, both in the 19<sup>th</sup> century demographic transition in the west and in the contemporary developing countries, for such a relationship. It is argued in this article that the primary determinant of the timing of the onset of the fertility transition is the effect of the mass education on the family economy. The direction of the wealth flow between generations changes with the introduction of mass education, at least partly because the relationships between members of the family are transformed as the morality governing those relationships changes.

Francine (1980)<sup>2</sup> observes the relationship between education and fertility at three points in Swiss demographic transition: in 1870, when fertility decline had barely begun; in 1888 when the country was in the middle of the fertility decline; and in 1910, a date by which the classic transition from high birth and death and, later to low rates might be said to have been completed. The influence of factors like religion, urbanization and occupation on education and fertility is also considered in this study. This study shows that the most educated regions were the first to control fertility within marriage. This transition was faster in the protestant districts when compared with Catholics, as the Protestant Church provided systematic schooling through the catechistic examination of population. The author also finds that education and the proportion working in agriculture are negatively related. Multivariate analysis of the data reveals an autonomous influence of education on fertility and education maintains a strong

relation to fertility even after other social, economic, and cultural variables have been controlled. The author concludes that, at least in 1888, education exhibits the highest inverse relation among all independent variables.

Jain (1981)<sup>3</sup> investigates the structure of the relationship between female education and fertility, based on data published in First Country Reports of the World Fertility Surveys for eleven countries. The cumulative marital fertility of educated women is shown to be similar in different settings. A lack of uniformity in the education and fertility relationship observed across countries is shown to be attributable to marked differences between the countries in the average fertility of women with no education rather than to the presumed differences in the average fertility of the educated women. The structure of the relationship is shown to be similar across several developing countries. This study suggests that enhancement in female education can be expected to influence fertility behavior even without simultaneous changes in other factors such as increasing opportunity for participation in the paid labor force in the modern sector.

Caldwell (1986)<sup>4</sup> examines Third World mortality experience, in order to identify the ways in which poor countries can achieve low mortality without having to await prior economic growth. A detailed examination is made of the experiences of Sri Lanka, Kerala (India) and Costa Rica. The analysis demonstrates the importance of women and their education and of a radical political tradition, as well as of government interventions in the areas of health and nutrition. In this study, religion is shown to have been associated with cultures and that in some cases have retarded mortality decline and in others assisted it.

Montgomery (1986)<sup>5</sup> in his study reveals that better educated women tend to marry later and to marry men with better education. The author also finds that female educational attainment has a pronounced negative effect on fertility, where as female and male attainment are each positively related to life expectancy and negatively related to infant mortality.

Sathar *et al.* (1988)<sup>6</sup> treat female education, workforce participation and age at marriage to be important determinants of fertility in a survey of 1979-80, carried in Pakistan. The study shows that age at marriage is related to female education and, in urban areas, to work force participation. In addition, the education of the next generation of mothers is shown to depend on parental education, and in the urban areas, the discrimination against girl's education diminishes as the occupational and educational level of their parents increases.

UNESCO's Information Document (1989)<sup>7</sup> clearly states that education decisively determines a woman's access to paid employment, her earning capacity, her overall health, control over her fertility, family size and spacing and the education and health of the family. Women with seven years or more of education tend to marry on an average four years later and have 2.2 fewer children statistically than women with no schooling. This Information Document also throws light on the crucial role of education in child survival. Citing Ghana, it shows that women with no education are twice as likely to loose children as mothers with primary schooling and four times as likely mothers with secondary education.

Okojie (1990)<sup>8</sup> gives empirical evidence on socio economic fertility differentials from a sample of fifteen rural and urban communities in Bendel state of Nigeria. A review of literature is made on female status and fertility

determinants, based on the factors affecting market productivity or 'public status' and the sociological framework that emphasizes intra family relationships that determine 'private status' of woman and men. Among the factors that are particularly important in accounting for fertility differences in this survey are female education, which decreased complete fertility, and husband's education, which increased fertility.

Liven (1991)<sup>9</sup> examines how female school attendance influences fertility and child survival at the community level, in one urban and one rural setting in central Mexico. Samples of mothers of young children in both communities were interviewed, and a sub sample in the city was observed at home with their infants for this study. The study found maternal schooling to be a predictor of reductions in fertility and the risks to child survival in both settings, with household socio-economic factors controlled. Husband's schooling was also a predictor of fertility, but was not associated with health care variables. The study concludes by observing that mothers with more schooling use maternal, child health and family planning services more frequently and are differentiated from those with less schooling by attitude, belief and behaviour variables, indicating psychological pathways between schooling and population change.

Schultz (1991)<sup>10</sup> examines factors affecting fertility decisions, the economic development process and the consequence of accumulative human capital investment in population; and various aspects of the intra family allocation of resources to children. His contributions focus on Swedish fertility, fertility response to child survival in Nigeria, international evidence on the role of literacy in demographic transition, the impact of public programmes on fertility and gender specific investment in human capital of children in rural

India, birth order effects and time allocation, intra family bargaining and time allocation and health status differences related to gender of the infant.

Hyatt and Milne (1993)<sup>11</sup> opine that the continuing high fertility rate in Kenya is of considerable concern as the resulting high rate of population growth makes improvements in living standards difficult, if not impossible. The authors examine the determinants of fertility in urban and rural areas through estimation of a probit model, which includes variables in three categories - economic, biological and social or cultural. Also simulated is the effect of increasing the level of female education on the total fertility rate and the total number of births. Results of this study show that improvement in female education can result in a substantial decrease in the number of birth in Kenya, thereby suggesting that formulation of government policy in this area is desirable.

Ogawa and Rutherford (1993)<sup>12</sup> analyse the fertility decline in postwar Japan, especially since 1973, that has continued to the present, and the demographic and socio economic factors contributing to it. The analysis, based primarily on period parity profession ratios, suggests that Japan's fertility decline since 1973 has occurred mainly because of postponement of marriage and first birth and declines in ratios of progression to marriage and first birth. It is shown that women's rising educational attainment plays an important role in inducing the new marriage and family pattern. The authors argues that the effect of women's education is associated with a number of related socio-economic changes, including rising wages of women and higher opportunity costs of marriage and child bearing, as well as changes in values.

Gupta (1995)<sup>13</sup> argues that there is a serious population problem in certain regions of the world, and that it is in varying degrees linked to poverty, to gender

inequalities in the exercise of power, to communal sharing of child rearing, and to an erosion of the local environmental resource base. He argues that very high fertility rates are experienced by women bearing risks of death that should now be unacceptable. The author sketches an argument to show how the cycle of poverty, low birth-weight and stature, and high fertility rates can perpetuate within a dynasty. The general conclusion that emerges from this study is that a population policy in these parts of the world should not only contain such measures as family planning programmes, improved female education and employment opportunities, but also those measures that are directed at the alleviation of poverty (such as improved credit, ready availability of basic household needs such as potable water and fuel).

Subbarao and Raney (1995)<sup>14</sup> are concerned with the estimation of social gains from female secondary education, measured as gross enrolment rates in secondary school. The article is based on cross country data from 72 developing countries, accounting for over 95 per cent of the population of developing countries; drawn from the World Bank and other data sources, covering a period of 1970-85. The analysis generally shows that female secondary education, family planning and health programmes all affect fertility and mortality, and that the effect of female secondary education appears to be very strong. Moreover, the results suggests that family planning will reduce fertility more when combined with female education, especially in countries that now have low female secondary school enrollment levels.

Based on the data from Demographic and Health Surveys for nine Latin American countries, Martin and Jaurez (1995)<sup>15</sup> observes that women with no education have large families of 6-7 children, whereas better educated

women have family sizes of 2-3 children, analogous to those of women in the developed world. Despite these wide differentials in actual fertility, the authors observe that desired family size is surprisingly homogeneous throughout the educational spectrum. While the least educated and the best-educated women share the small family norm, the gap in contraceptive prevalence between the two groups ranges from 20-50 percentage points. The study concludes by observing that better educated women have broader knowledge, higher socioeconomic status and are less fatalistic toward reproduction than do less educated women.

Ainsworth, *et al.* (1996)<sup>16</sup> observe the relationship between female schooling and two behaviours - cumulative fertility and contraceptive use in fourteen sub-Saharan African countries. Controlling for background variables, the study reveals that, the last years of female primary schooling have a negative relation with fertility in about half of the countries, while secondary schooling is associated with substantially lower fertility in all countries. The authors conclude by observing that female schooling has a positive relationship with contraceptive use at all levels among ever-married women and husband's schooling exerts a smaller effect than does female schooling on contraceptive use and in almost all cases, on fertility.

Appletan (1996)<sup>17</sup> constructs a structural model relating fertility to its proximate for Cote d' Ivoire. The model allows identification of the means through which female education affect fertility. Secondary schooling is found to have particularly strong effects, raising the age of cohabitation and reducing the duration of breast-feeding. The author observes that the two transmission mechanisms are offsetting since delayed cohabitation limits fertility while

shortened breast-feeding increased it for older women. However, he opines, the impact via age at cohabitation dominates, thereby bringing demographic transition, except among the older cohorts.

Okpala *et al.* (1996)<sup>18</sup> believe that life expectancy at birth is an important indicator of well-being and that life expectancy rates are higher among the economically advanced nations of the world. Thus they argue that mortality differences exist partly due to economic status. The poverty of women and children remain a major challenge for all developing societies, especially, for the developing nations. Women in sub-Saharan Africa play a very important role in food production, bearing and raising children, the prevention and treatment of childhood diseases and malnutrition. As such, the author argues, that the education of mothers and household income would help improve family health and sanitation and thereby can increase child survival. The findings here do show that childhood mortality is significantly influenced by female education, household income and the feeding practices of mothers.

Benefo and Schultz (1996)<sup>19</sup> examine individual, household and community characteristics that may affect fertility in contemporary Cote'd I voire and Ghana and the relationship between child mortality and fertility. The authors treat child mortality as exogenous and find that fertility responds directly to child mortality. The authors conclude by observing that increase in female education and urbanization are likely to contribute to decline in fertility in both countries but economic growth without these structural changes is not yet strongly related to fertility.

Sen (1997)<sup>20</sup> strongly argues that the people whose interests are most adversely affected by frequent bearing and rearing of children are young women.

Social changes that expand the decisional power of young women such as expansion of female literacy, or enhancement of female employment opportunity can, thus, be major forces in the direction of reducing fertility rates. In his view this 'co-operative' route seems to act more securely and often much faster than the use of 'coercion' in reducing family size and birth rates. This essay examines the comparative evidence from India and China on this subject as well as the interregional contrast within India.

The International Conference of Population and Development (1998)<sup>21</sup> held in Cairo in 1994, was a break through, which established a new consensus on two fundamental points – (a) empowering women and improving their status are essential to realizing the full potential of economic, political and social development and (b) Empowering women is an end in itself, and as women acquire the same status, opportunities and social, economic and legal rights as men, they acquire the right to reproductive health and control fertility and the right to protest against gender biased violence, and thereby human well-being be enhanced. In the programme of Action of the International Conference on Population and Development, education is considered as one of the most important means to empower women with the knowledge, skills and self-confidence necessary to participate fully in development process. It was concluded that educated women marry later, want fewer children, and are more likely to use effective methods of contraception and have greater means to improve their economic livelihood.

Qudsi (1998)<sup>22</sup> provides empirical evidence on fertility determinants in Arab countries. The paper estimates the impact of cultural and economic factors on the demand for children and the results strongly supports the hypothesis that

cross-country heterogeneity buttress differentiated fertility and that female education mitigates high fertility. The author observes that the other factors positively affecting fertility are child mortality and preference for sons.

Gani (1999)<sup>23</sup> investigates factors influencing fertility rates in the developing island countries of South Pacific and the empirical results obtained provide confirmation that higher infant mortality is significantly associated with high fertility rates. The results of this study also produce strong support in favour of inverse correlations of family planning, urbanization, female education, and incomes with fertility rates. The empirical results of this study suggest that more resources are needed to allow improvement in the status of females and infant health.

## **2.2 STUDIES AT THE NATIONAL LEVEL**

Nag and Kak (1984)<sup>24</sup> consider Manupur, one of the more than a half million villages of India which has acquired a special place in the field of population, for their study. The data collected during their investigation enable them to conjecture that the three inter related aspects of development viz. (i) the introduction of modern agricultural technology, (ii) institutional innovations, and (iii) expansion of education, particularly among girls, have played crucial roles in demographic transition of Manupur.

Dreze, *et al.* (1996)<sup>25</sup> examine the determinants of fertility, child mortality and gender bias in child mortality in India using district level data from the 1981 census. The finding highlights the powerful effects of variables relating to women's agency - female literacy and female labour force participation on mortality and fertility. Further, higher levels of female literacy and labour

participations are associated with significantly lower levels of female disadvantage in child survival. In contrast, variables relating to the general level of development and modernization have relatively weak effects on demographic outcomes.

Rajan *et al.* (1996)<sup>26</sup> observe that sex preference of children influences a family's fertility decisions. The authors are concerned with whether the acceptance of a permanent method of contraception is associated with the sex composition of living children. The study finds that a larger portion of sterilized couples with two or more children have two sons in almost all states of India under their investigation. The authors also observe that a comparison of sterilization users by the number of sons demonstrates a marginal improvement in the proportion of couples accepting sterilization with no sons between 1980 and 1990.

Measham *et al.* (1998)<sup>27</sup> use data from India and from other countries to assess the role of income changes and other changes over time in determining infant mortality rates and total fertility rate. The authors find that higher levels of female education and access to good health care are important correlates of lower infant mortality and fertility rates. It was also found that, while income growth is significant for lowering infant mortality and fertility, improved performance on non-income factors appears to be more important.

Manna (1998)<sup>28</sup> attempts an inter-state comparison with respect to female education and mother and child health on the one hand, and the share of health and education in total state expenditure on the other hand. She points out that while declining fertility has been observed in all Indian states, the rate of decline varies significantly across states. A comparison of fertility ranks of the states and

ranks with respect to selected fertility determinants for 1992-93 shows a high degree of association between wanted fertility and actual fertility as well as a strong association between fertility and female education and mother and child health. Thus, the author points to the importance of incorporating these two components in the population control programmes of the states. This study also throws light on the high share of female sterilization in total sterilization, which indicates that the burden of fertility reduction in India in recent years has been put mainly on women. The author opines that the greater contraception burden borne by Indian women may be indicated of the presence of gender differentiated fertility demand, apart from the low social status of women, which make them weaker targets. This, therefore, calls for more male-oriented motivational programmes under the population control programmes.

James (1999)<sup>29</sup> observes that the southern states of India, on the whole, are undergoing a fertility transition. The author believes that the states of Kerala and Tamil Nadu have already attained a replacement level fertility and argues that the dramatic fertility decline in Andhra Pradesh shows that the state will follow the other two soon. Fertility decline in Andhra Pradesh and the plausible explanation is considered in this study. The study finds that the role of female literacy and health status on fertility in Andhra Pradesh may not be as crucial as in the case of Kerala. However, significant changes are observed in the antenatal care of pregnant woman in recent years and the author concludes that this would have played same role in the fertility decline in the state.

Singh and Srivastava (1999)<sup>30</sup> point out that improvement in female education alone can help further to promote increase in age at marriage, reduction in infant and child mortality and adoption of temporary methods of

family planning and the value of smaller family size. Since female education is quite low among Muslims and scheduled castes and tribes, they tend to record a higher rate of infant mortality than other categories of people. The authors conclude that, as the level of fertility is relatively higher in slum pockets as well as in rural area, there is a need to involve local youth, particularly the couples, through various programmes and cultural activities, not only to motivate them towards the adoption of family planning measures but also to help them adopt modern contraceptives easily.

Chanda (2000)<sup>31</sup> in his review of the National Population Policy opines that since the new National Population Policy has mentioned universal and compulsory schooling as a crucial element in its approach, the government should demonstrate its commitment by enhancing its allocation on basic education, especially on girl's education. In his view, until this happens, the population debate will continue.

Mukherji (2000)<sup>32</sup> argues that the alleviation of peoples basic living condition and poverty eradication must precede all other efforts for the improvement of their reproductive health and general health. In his view, without the fulfillment of the former condition, the motivation for adopting the small family norm is difficult to come by. In this study, numerous very powerful canonical linkages have primarily and repeatedly confirmed the basic fundamental truth that it is the widespread illiteracy and concomitant abject poverty among the masses, especially among the females of India that has been the root cause of the persistently high fertility and very high infant mortality. The author concludes that unless and until such oppressive situation is relieved,

no improvement in demographic and socio-economic condition will happen in India.

Meenakshi *et al.* (2000)<sup>33</sup> believe that a strong political commitment to social objectives, the dedicated involvement of successive governments in intensified family planning programmes for another 30 years, joint efforts of the top administrative level of various departments and dedicated co-operation of regional level staff can contribute to the control of fertility in India. The desire for providing higher education and standard of living, along with aspirations of good life for their children are sure to act as the motivating factors to have fewer children on the part of the present generation.

Dutta (2000)<sup>34</sup> argues that a given rise in household income, level of assets, household aspiration regarding future income, parental education, fathers exposure to alien values and children's expected education may be followed by a decline in the number of desired children.

Singh (2000)<sup>35</sup> is of the view that numerous are the reasons for a low level of literacy in the state of Bihar, such as continuing high value of child labour, lower status of women, rampant poverty, increasing unemployment of educated youth, lack of people's orientation to education, fatalism on the part of the people, and lack of adequate infrastructure facilities for primary education and political will to implement the policy of compulsory primary education. Among the factors, the author argues that the last one is the most important factor, which accounts for such a dismal scenario of literacy in the state, which leads to the perpetuation of the vicious circle of illiteracy, poverty and high fertility. Therefore the author brings to the attention of the Government the fact that there is no more critical role for the state than to guarantee that its all children enjoy

the right to basic education with a view to achieving sustainable human development.

### **2.3 STUDIES AT THE STATE LEVEL**

Kurup (1986)<sup>36</sup> has identified some of the key factors in Kerala's fertility decline. In his view, Kerala can safely be assumed to have entered the transition in view of high literacy, and the high acceptance of family planning and health facilities, resulting in lowering of fertility and mortality. The author argues that the large exodus from the state to other parts of India and to Middle East will again be beneficial to the State and lead to further reductions in the fertility level and improvement in the economic level and the standards of living.

Mahadevan and Sumangala (1987)<sup>37</sup> confirm that a higher age at marriage, a decline in infant mortality, an extensive family planning infrastructure and the widespread use of contraceptive methods are important influences on fertility decline. In addition the authors agree that the relatively low value attached to the sex of children, the revival of polyandry, the recognition of deep rooted kinship obligations, the emancipation of women and modernization, all contribute significantly towards a decline in fertility. They observe that women in general enjoy better status in Kerala than their counterparts in rest of the states of India. This study confirms the hypothesis that an increase in the status of women clearly depresses fertility behaviour irrespective of all other factors. The authors also argue that the higher level of modernization generally achieved among a wide range of couples in Kerala might be a major determinant of Kerala's fertility decline. This level of modernization of course, was achieved through the progressive measures of the sort – widespread literacy, foreign contact and trade, matrilineal legacy, effort of

voluntary agencies, revolutionary movements and writings, mass media, libraries and so on.

Bhat and Rajan (1990)<sup>38</sup> point out that the experience of Kerala on the whole, led to the understanding that even without significant improvements in the levels of industrialization, urbanization and material improvements in standard of living of the people, fertility reduction could take place with social development. In their opinion, female literacy came out as one of the strongest variables explaining fertility decline in Kerala. Along with female literacy, the health status of the people reflected in low levels of infant mortality rate was also considered as a further plausible explanation for fertility decline in the state.

Zachariah (1992)<sup>39</sup> focuses on the historic lag in the demographic transition in Malappuram and Palakkad compared to Ernakulam. It is argued that this lag came about because of historical factors. This study finds that Palakkad has the highest mortality in the state and Malappuram has the highest fertility in the state. But recent trends indicate that Malappuram is fast moving forward and could overtake Palakkad in fertility decline. But Palakkad is not showing such a momentum with respect to its high mortality. The inter-district differences in demographic measures in Kerala are attributed to 'historical reasons'.

Srinivasan (1995)<sup>40</sup> points out that fertility transition is often initiated by the widening of birth intervals, which ultimately results in a lower average of expected number of children born to women at the end of her reproductive span. In addition, he argues, elongation of birth intervals is desired to ensure better maternal and child health. With common agreement on a small family norm, it is probable in his view that women tend to compress their effective reproductive

years of life through having the desired number of children limited to two, in the initial years of marriage.

Issac and Tharakan (1995)<sup>41</sup> opine that the experience of Kerala shows that the conditions of life of people can be improved even at low levels of development through appropriate public action for social provisioning and redistribution. The authors argue that the mass Indian people do not have to necessary wait for an indefinite future for the hump of economic growth to be crossed for schooling, house sites, primary health care, food at fair prices and so on. The socio-religious movements in Kerala, in their view laid special emphasis upon personal and social hygiene and on literacy. They observe that there has never been a case of any organized opposition to female education and this combined with the strong tradition of matrilenity may have contributed to the progressive attitude to women's education. In their view, literacy, particularly female literacy was the key variable in the improvement of the health status of the people.

Rajan *et al.* (1996)<sup>42</sup> observe that sex preference of childrens' influence a family's fertility decisions. The article deals with whether the acceptance of a permanent method of contraception is associated with the sex composition of living children. The study indicates that a technical (permanent) method is chosen only when a satisfactory family size with desired sex composition is achieved. The authors observes that the evidence from Kerala fertility survey of 1991 supports the above argument that couples who opt for sterilization with the last child being a male are always more in number compared to those with last female child.

Krishnakumari and Moli (1997)<sup>43</sup> while explaining the differences on female age at marriage find that female literacy influences female age at marriage to a substantial extent. Besides female literacy, female work participation rates seem to be another explanatory factor behind the difference in female age at marriage across the districts. It is found that literacy and work participation positively influence a delay in age at marriage for males also. All this will help to reduce the reproductive span and hence measures are to be taken to raise the age at marriage among all sections of society in Kerala and there by the authors believe that 'Zero Population Growth' could be easily achieved before 2020. The authors believe that this is not to be achieved by the imposition of any cohesive policies but through awareness creation among the strata, among whom the marriage age still remains comparatively low.

Zachariah (1997)<sup>44</sup> in his work finds that Kerala has experienced the sharpest fertility decline in India. This study shows that the potential for fertility decline through increased age at marriage is very significant and he argues that even though the average age at marriage is relatively high, there is scope for further increase in Kerala. Among the variables that can be manipulated, the author says, female education showed the strongest positive association with age at marriage. Thus, education and subsequent employment outside home seem to be the best way to ensure a higher age at marriage for Indian women.

## **2.4 THEORETICAL ISSUES ON FERTILITY**

Studies on population have received the attention of statesmen and philosophers since ancient times. Ancient Chinese philosophers like Confucius postulated an ideal proportion between land and population and believed that any major deviation from this proportion would create poverty. Plato and Aristotle

thought of an optimum size of population and the means of controlling population, in their discussions of the ideal conditions of a city-state in which man's potentialities could be fully developed. Roman philosopher, Cicero held that the State's population must be kept up by monogamous marriage and he listed various checks to population. However, the mercantilists stressed the advantages of having a large population. In this section, we examine the theoretical issues related to population, fertility and mortality transition.

Malthus (1798)<sup>45</sup> was the first to focus attention on linkages between development processes and components of population change such as fertility and mortality. To Malthus, population if unchecked, has a tendency to grow faster in geometrical progression as against resources and food supply which at best can grow in arithmetical progression. According to him "population is necessarily limited by the means of subsistence". The balance between population and production is maintained through checks on population change. Factors such as famine, disease and war are enunciated as positive checks monitoring the mortality component, where as the postponement of marriage, moral restraints on sexual relations and so on are affirmed as preventive checks monitoring the fertility component of population change. Malthus introduced 'moral restraint' or deferment of marriage by prospective spouses until they were in a position to support a family.

Malthusian theory has been criticized on various grounds. This is mainly because, Malthus did not clearly explain the nature of relationship between fertility and economic development, on the one hand, he suggests that an increase in the demand for labour resulting from increased production strongly encourages a rapid increase in the population. On the other, he suggests that

improved standards of living due to the progress of the society and civilization motivates people to reduce fertility, on account of the fear of decline in the living standards due to an increase in population. However, the contribution of Malthus helped the development of population theories, as this aroused a storm of controversy, which long outlived himself. It was Malthus who made both his followers apparently conscious of the need for adequate information about population trends and for painstaking investigation of their relations with social and economic conditions. Thus, Malthus was indirectly responsible for a large measure of the progress, which has been made since his time, in developing population censuses and vital statistics, improving the techniques of demographic analysis and formulating better population theories.

Ricardo establishes an association between population growth and economic development through the relationship between subsistence wage rate and actual wage rate. According to him the net reproduction rate will be greater than unity, implying growth of population if the actual wage rate is greater than the subsistence wage rate. Wage level above subsistence wage level provides the motivation for a larger family.

Sustained population growth along with a still higher sustained growth in total production in European countries during the period of industrial revolution led to the failure of classical prediction. The observance of an increasing returns to scale in the non-agricultural sectors due to technological advancement, division of labour, expansion of trade, and so on resulted in the invalidation of the assumption of diminishing returns to scale. However, the classical economists are pioneers in the creation of a better understanding of linkages between demographic and development processes.

On the basis of the demographic transition process witnessed in the industrialised countries in the nineteenth and twentieth centuries, population scientists formulated a theory of demographic transition (Thompson, 1929<sup>46</sup>; Coale and Hoover, 1958<sup>47</sup>). The relevant aspects of the theory fall into three stages. The first stage represents a primitive economy characterized by high mortality and fertility. The second phase is a transition phase from a primitive agrarian economy to a modern industrialized economy. This state is characterised by high birth rate and low death rate, and hence is often called the stage of population explosion. Control of epidemics, famines and spread of medical institutions and facilities helped this process. In the third stage, fertility finally succumbs to the allurements that accompany modernization and hence fertility and mortality levels are registered to be the lowest. This theory is criticized on the ground that the transition patterns observed over various regions had differed in terms of time lags. However, the proponents of this theory try to justify these differences in demographic transition in terms of the nature of economic development.

Micro-economic theories of fertility attempts to overcome the shortcomings of the macro approaches in explaining fertility. Leibenstein's (1957)<sup>48</sup> theory is based on the presumption that families would balance utilities against disutilities ascribed to the  $n^{\text{th}}$  child in order to determine whether a family wanted an  $n^{\text{th}}$  child. According to him, children are wanted for three types of utilities: (i) the consumption utility, (ii) work or income utility and (iii) security utility. 'consumption utility' means the child is wanted for its own sake rather than for the provision of income or services to the household. He also considers two types of costs or disutilities of having an  $n^{\text{th}}$  child, viz., (i) the direct cost involved in feeding, housing, clothing and in schooling and (ii) the indirect costs

arising out of income earning opportunities lost to the parents in bringing up the  $n^{\text{th}}$  child. Leibenstein argued that consumption utility remained constant with respect to income, while income and old age security utility declines with income. Thus the sum of the utilities of the  $n^{\text{th}}$  child is proposed to decline with an increase in income. He also presumes that the marginal utilities of children goes on declining with every increase in the number of children and hence, parents decide to have an  $n^{\text{th}}$  child only when their expected incremental utilities are higher than then incremental disutilities. Thus, he establishes an inverse relation between fertility and income.

Becker (1960)<sup>49</sup> applied the Hicksian version of micro consumption theory to family fertility behaviour and considered children as consumer durables. He argued that we should view children in the same way that the household views the purchase of a durable good, and that it makes its decision as if it made calculations for a commodity, whose end result was a stream of utilities overtime and a stream of costs, given income and price. Thus parents compare utility from children with that of other goods and services. Becker does not treat children as inferior goods and argued that an increase in income will be associated with a higher number of children and other goods. At the same time, he introduced qualitative aspects of demand for children, because couples may decide to have more and better quality children with the increase in their income. The quality of a child is defined in terms of expenditure on the child over which the parents can be presumed to have control. Thus Becker argues that the income elasticity of both the qualitative and quantitative demand for children is positive. However, evidence on fertility showed that the opposite was the case. This argument was justified on the grounds that the 'price' of children is not a constant, and price effect is more important than income effect. Becker points

that the price effect was more important because higher income families wanted 'higher quality' children.

The New Home Economic Theory of Fertility developed following the lines of Becker (1965)<sup>50</sup> and involved new concepts like the allocation of time, changes in its value over time, quality of child and investment in human capital. Here, family is considered as the basic decision making unit including all the household activities of investment, production and consumption of all the basic commodities. Parents draw utility from the basic commodities, which are produced within a household. Child services, (both the number of children and quality of children) providing direct utility to the parents are also characterized as one of the basic commodities. The production function of the basic commodities necessitates (including children) the use of inputs such as market goods and services and the time of family members.

The main link between household and economy in the new home economic theory of fertility is the value of human time. Increase in value of human time result in fewer children per household, with each child demanding greater investment in human capital, which in turn reduces mortality and increases productivity. Greater productivity further raises both the value of time and income in the subsequent generation and enables them to make use of new knowledge and physical capital. Moreover the time requirements in the production of child services are higher for the wife than the husband and thus a mother with a higher education tends to have lesser number of children because of her higher opportunity cost of time. Thus, overtime the model does predict in a rough qualitative fashion the declining rates of population growth and infant mortality, as the main features of demographic transition.

A growing recognition of the sociological factors along with the economic factors influencing fertility behaviour led to the development of socio-economic theories of population. Sociological factors such as education and religion bring about structural change in the preference for children and these factors can also be incorporated into the basic economic framework of household choice through its utility function (Easterlin, 1969<sup>51</sup>; Leibenstien, 1976<sup>52</sup>). Thus the relative preferences towards children are seen to be varied and changing over time in accordance with the norms of the society.

Studies on fertility are not unique in the sense that the models differ from each other in the determinants of fertility. Several theoretical models have been formulated by eminent demographers. The existing theories on fertility can be categorised into the following, depending upon the determinants of fertility decline- Fertility and Contraceptive Use, Fertility and Child Mortality and Fertility and Maternal Education. Recently, economists and demographers are concentrating on fertility and female education, which in turn will bring forth an increase in the child survival rates, contraceptive prevalence rates, standard of living and participation of females in gainful economic activities. Besides this, decision-making power and age at marriage also increase with female education. Hence, human capital investment especially among females is highly desired to bring forth demographic transition. The existing theories on fertility categorised into three, are examined below.

#### **2.4.1 Fertility and Contraceptive Use**

The division of resources allocated by households between family size and investments in the human capital of each of their children is a critical element in the determination of per capita income levels and the growth of

economies. Accordingly, attention has been devoted to the issue of how improvements in birth control methods might lead to greater investments in the ‘quality’ of children and thus to higher levels of development. Indeed, researchers have frequently sought to evaluate the consequences of family size on parental investments in the qualitative characteristics of their children (Wray, 1971<sup>53</sup>; Belmont and Marolla, 1973<sup>54</sup>; Blake, 1981<sup>55</sup>; Becker and Lewis, 1973<sup>56</sup>).

Becker (1960)<sup>57</sup> approached the question somewhat differently, reasoning that the number of children parents desired and the resources they chose to spend on each child were substitutes for each other. Families with excess children would consume less of other goods, especially of goods that are close substitutes for the quantity of children. Thus, an increase in contraceptive knowledge would raise the quality of children as well as reduce their quantity. A ‘quantity-quality’ trade off is implied here. The pervasive empirical finding, noted across many countries, that households with large number of children also tend to invest less in each, buttresses the hypothesis that there exists an important relationship between family planning initiatives and income growth, that may operate by facilitating human investments.

#### **2.4.2 Fertility and Child Mortality**

The relationship between child mortality and fertility is such that high levels of child mortality encourage parents to have large number of births (Freedman, 1975<sup>58</sup>; Schultz, 1969<sup>59</sup>, 1976<sup>60</sup>). The reduction in child mortality is an obvious objective of parents and society. Public programmes that promote child health might, nonetheless, receive still more support if reduced levels of child mortality were shown to contribute to reducing fertility and thereby to slowing population growth.

Child mortality can affect a woman's demand for births in two ways. First, it can induce her to replace ex post her children who die. This response could occur by means of a biological feedback or through adaptations of behaviour. This mechanism would be more effective if child bearing is initiated at an early age and premature sterility is infrequent, allowing most couples to have the biological capacity to bear more births they want. Second, in a society where child mortality has been stable or slowly declining for some decades, parents can adapt their fertility behaviour in anticipation of the levels of child mortality they will experience on average (Schultz, 1980<sup>61</sup>).

Fertility responds directly to child mortality. Most recent studies of child mortality find a woman's education to be related negatively to her experience of child mortality, although this effect of female education could be partly due to the child health inputs she is able to purchase or produce with her education-enhanced wages and improved marriage prospects (Pitt, 1995<sup>62</sup>). The mother's height is a proxy for her own health investments as well as her genetic health endowments, which are likely to improve the chances for her children to survive. Household assets and urbanisation are also expected to reduce mortality.

### **2.4.3 Fertility and Maternal Education**

Of all the social and economic variables that demographic transition theorists have advanced as factors influencing fertility behaviour, education is perhaps the most widely accepted and frequently studied. The negative relationship between education and fertility implies that a high level of education is associated with both a low level of fertility and early fertility decline. The relationship is hypothesized to operate through several mechanisms: education may help people to adapt to modern society and teach them to cope rationally

with the environment, to become less fatalistic and to plan more in all aspects of their lives. Education increases aspirations for self and children, which can only be achieved through limiting family size. More educated women tend to use more efficient contraceptive methods (Micael, 1973<sup>63</sup>; Rosenzweig and Seiver, 1982<sup>64</sup>).

Compulsory school attendance may lower the economic value of children to their parents and increase their costs (Caldwell, 1980<sup>65</sup>). The hypothesized relationship has been borne out by many empirical studies in contemporary developed and developing countries alike. Education, or literacy, has been found to be the strongest inverse correlate of the crude birth rate in macro-level socio economic regressions; and maternal education has been found to be a strong predictor of family size at the micro level (Westoft and Ryder; 1977<sup>66</sup>; Michael, 1973<sup>67</sup>; Rosenzweig and Schultz, 1985<sup>68</sup>).

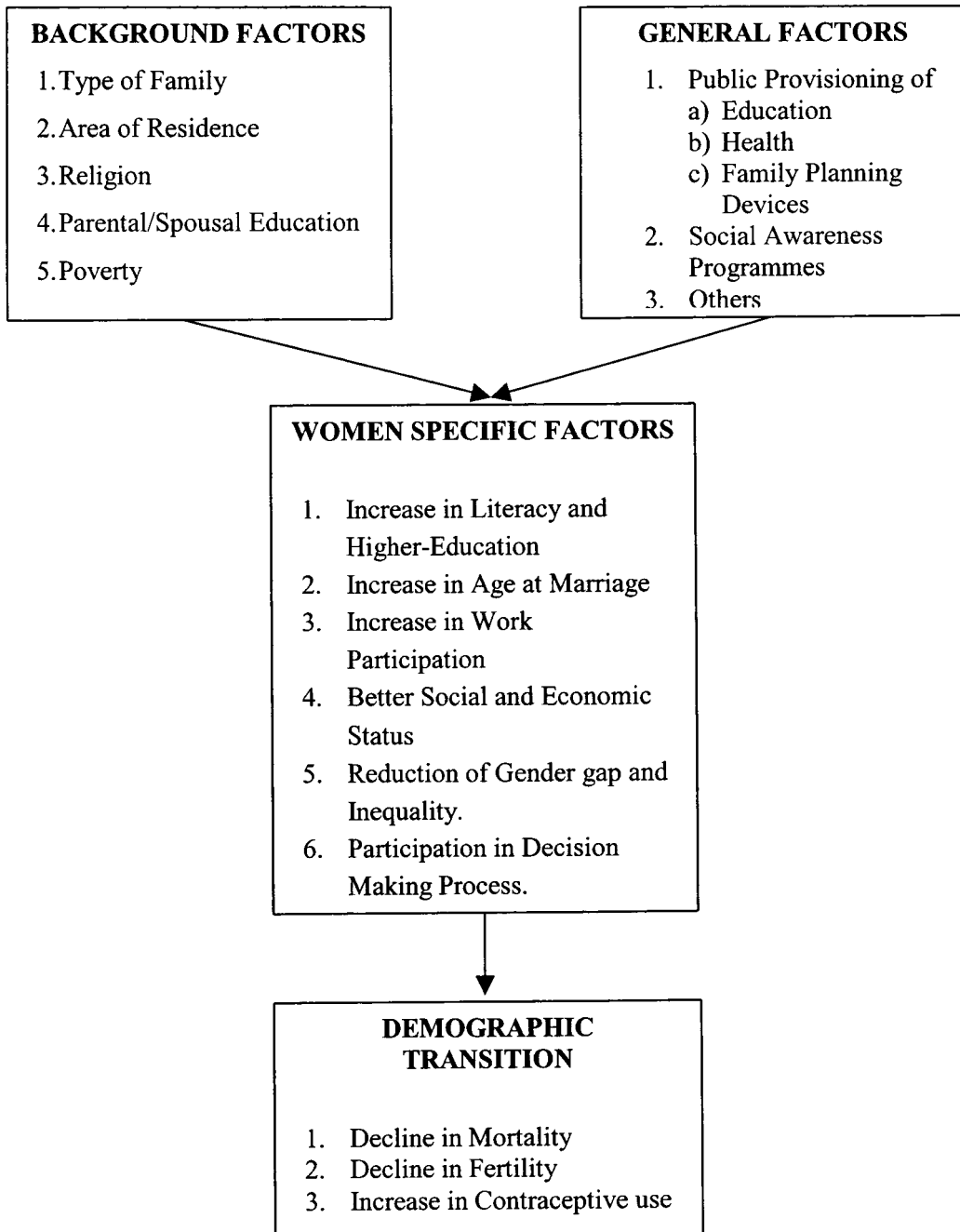
Ainsworth *et al.* (1996<sup>69</sup>) focuses the channels through which female education affects fertility and contraceptive use. Women's schooling is posited to result in lower fertility and higher contraceptive use, through the following four main channels.

- **Wage effects:** By raising the opportunity cost of women's time in rearing children, schooling raises the 'price' of children (who are time-intensive) as well as the wage that women can earn in the work force. The wage benefits of schooling may also induce women to get more schooling, thereby delaying the onset of child bearing. This is likely to result in lower fertility and high rates of female participation in the labour force.

- Higher demand for child schooling: Women with more schooling may develop higher aspirations for their own children's schooling. These aspirations may lead more schooling per child. This is the quantity-quality trade-off. There are many initiating factors for this trade-off, including the levels of wages and employment expected by graduates and the quality and price of schooling.
- Lower child mortality: Women with more schooling are likely to be more effective in producing healthy children, which lowers child mortality. As the 'wedge' between live births and surviving children is narrowed, couples find that they can have fewer children to reach a target number of surviving children.
- More effective use of contraception: Educated women can learn about and use contraception more effectively than uneducated women, reducing the number of unanticipated pregnancies.

Female education is also thought to facilitate fertility decline by increasing the bargaining power of women, allowing them greater control over their destiny, and improving husband-wife communication. In the studies on fertility, our study comes in the third category, which links maternal education and fertility. Female education helps to bring about demographic transition by increasing the age at marriage, reducing child mortality and by the adoption and better utilisation of contraceptive methods. To understand the process of demographic transition, the following analytical framework is presented.

## ANALYTICAL FRAMEWORK OF THE DETERMINANTS OF DEMOGRAPHIC TRANSITION



## 2.5 CONCLUSION

The review of the literature on fertility at international, national and state levels shows that the literature on fertility and its determinants are wide and varied. Kerala has been the focus of international attention with respect to fertility transition. Among the Indian states, Kerala registered the most favorable trends in demographic transition. However, there are only limited studies on demographic transition in the state. Moreover, the pace of demographic transition is not uniform across the districts of Kerala. Malappuram district is the demographically backward district of Kerala and it is the only district of Kerala, which has not attained zero population growth. So the special characteristics of the district have to be looked into, to find reasons for the relatively high fertility noted in this district. So the present study attempts to fill this gap.

The discussion of various theories on fertility and its determinants show that the factors influencing fertility and the linkages through which these factors affect fertility are different in various studies. However, most of the studies consider the influence of socio-economic variables like education, religion, employment and income on fertility. Besides this, a combination of more than one factor is used by many demographers in their explanation of fertility behaviour. The present study makes use of some elements of these theories and develops a model showing the important determinants of fertility transition among our samples of Malappuram district.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

**By  
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Thesis submitted to the University of Calicut  
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# **DEMOGRAPHIC TRANSITION IN INDIA – AN INTERSTATE COMPARISON**

- 3.1 *State of World Population*
- 3.2 *State of Population in India – The Need for Stabilization*
- 3.3 *Census in India*
- 3.4 *Inter-State Variations – An Overview*
- 3.5 *Demographic Transition in India*
- 3.6 *Structural Changes in Population*
- 3.7 *Conclusion*

## CHAPTER - III

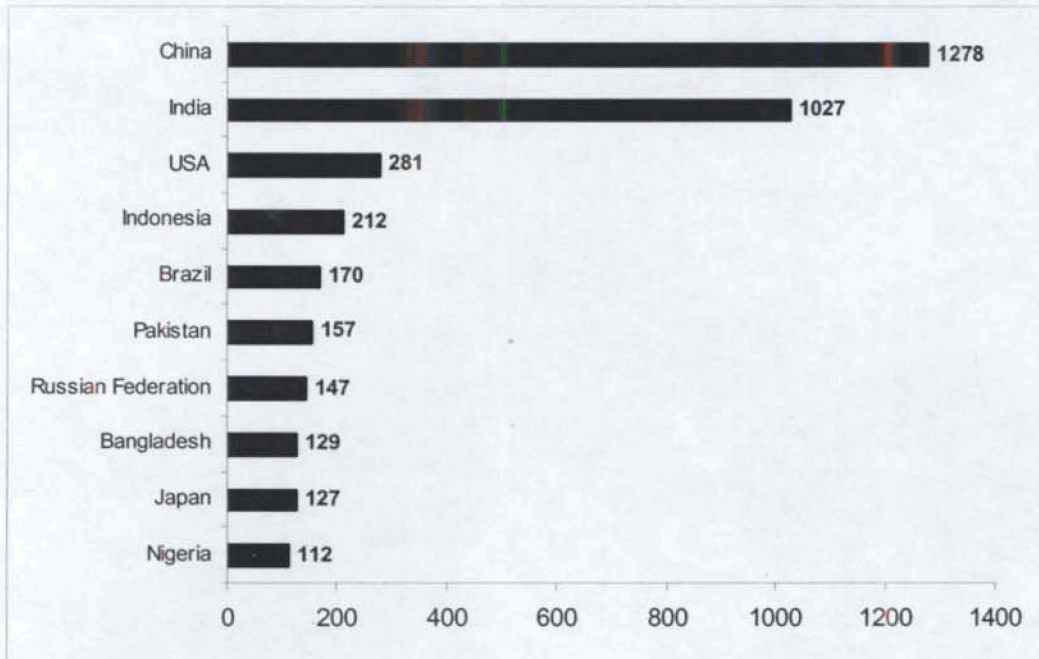
### **DEMOGRAPHIC TRANSITION IN INDIA- AN INTER-STATE COMPARISON**

This chapter proceeds by examining the state of population at the international and national levels and it examines the inter-state variations in demographic and structural features of population in India; by considering fifteen major states, viz., Gujarat, Maharashtra, Andrapradesh, West Bengal, Kerala, Madhya Pradesh, Tamilnadu, Rajasthan, Karnataka, Haryana, Punjab, Orissa, Assam, Uttar Pradesh and Bihar.

#### **3.1 STATE OF WORLD POPULATION**

The term 'population' comes from the Latin word 'populus', which stands for 'a people, political community, or a nation'. The term population is used mainly in the context of the number of people residing in a very well specified geographical area. The world population in 2004 is 634.51 crores and population of India is 107.97 crores<sup>1</sup>, accounting 17 per cent of the world population. The Population Clock shows world population as 6,680,347,425 crores and that of India as 1,121,872,213 crores as on 29<sup>th</sup> August 2007, 2.00pm. Population of the ten most populous countries of the world is given in Fig. 3.1. India's population in 2001 has been determined to be 1,027 millions by the Census of India, making it the second most populous country in the world after China (with a population of 1,278 millions). It has been estimated that by 2050, India will be the most populated country in the world.

**Fig. 3.1: Ten Most Populous Countries of the World, 2001**



The change in population is a natural process, which is the result of differing birth and death rates as well as migration. Although, some countries have seen a fall in their population in recent years, the population in India has been growing consistently over the last century. Compounded annual population growth rates of selected countries are presented in Table 3.1. It shows that India is having the highest growth rate of 1.8 per cent as against 0.3 per cent in Germany and Japan. The high growth rate of population can be ascribed to the death rate being lower than the birth rate. Experiences from around the world and within India have shown that birth rates fall when a society is economically well off, women are empowered, and general education and awareness levels are high.

**Table 3.1**

**Compound Annual Growth Rate of Population in Selected Countries**

| <b>Country</b> | <b>Compounded Annual Population Growth Rate (%) 1991-2001</b> |
|----------------|---|
| India          | 1.8   |
| China          | 1.0   |
| USA            | 1.2   |
| Japan          | 0.3   |
| Russia         | -0.2  |
| Brazil         | 1.4   |
| Germany        | 0.3   |

Source: World Bank, 2002.

India's global position in terms of socio-demographic parameters is shown in Table 3.2. While considerable progress has been achieved in last two decades, the country continues to lag behind several other countries in the region. Data show that infant mortality rate, maternal mortality rate and under five mortality are still very high in our country and that our life expectancy is low. The Tenth Plan targets reduction in infant mortality rate to 45/1000 by 2007 and 28/1000 by 2012, reduction in maternal mortality rate to 2/1000 live births by 2007 and 1/1000 live births by 2012, and reduction in decadal growth rate of population between 2001-2011 to 16.2 percentage. As against an allocation of Rs.15, 120 crore for the Ninth Five Year Plan, the allocation for Family Welfare is Rs.26, 126 crore for the Tenth Plan.<sup>2</sup> The National Rural Health Mission (NRHM) and Family Welfare aim to improve the availability of and access to quality health care. It targets to reduce IMR to 30/1000 live births and MMR to 100/1,00,000 live births by 2012.<sup>3</sup> It also targets to reduce total fertility rate to 2.1 by 2012.

**Table 3.2****India's Global Position in Terms of Socio-Demographic Indicators**

| Country    | Life Expectancy at birth (years) | Under five mortality rate (per 1000 live births) | Infant mortality rate (per 1000 live births) | Maternal mortality ratio (per 1,00,000 live births) |
|------------|----------------------------------|--|--|---|
|            | 2004 – 05                        | 2003   | 2003   | 2005  |
| China      | 71                               | 37   | 30   | 56  |
| India      | 63                               | 87   | 63   | 540   |
| Nepal      | 61                               | 82   | 61   | 740   |
| Pakistan   | 63                               | 103  | 81   | 500   |
| Srilanka   | 74                               | 15   | 13   | 92  |
| Bangladesh | 63                               | 69   | 46   | 380   |
| South Asia | 63                               | 91   | 66   | NA  |

Source: UNDP Human Development Report, 2005.

NA: Not Available

Over the years, India has made substantial progress in human development. Sustained and high economic growth in the post-reform period reduced poverty and illiteracy significantly. However, India's overall performance on human development has been mixed in the last decade. This is on account of the fact that improvements in health indicators like life expectancy and infant mortality rates have been much slower than expected. There is widespread under nutrition among women and children, and maternal and child health still remains areas of concern. Human Development Report, 2005<sup>4</sup> ranks India at 127 out of 177 countries of the world in terms of composite Human Development Index for 2003 (Table 3.3). Between 2000 and 2003, while the absolute values of Human Development Index and Gender Development Index consistently improved for India, its ranking remained more or less the same for

the three years. On the other hand, some of India's neighbours not only improved their HDI and GDI values, but also improved their relative ranks.

**Table 3.3**

**India's Global Position on Human and Gender Development**

| Country    | Human Development Index |       | Human Development Rank |      | Gender Development Index |       | Gender Development Rank |      |
|------------|-------------------------|-------|------------------------|------|--------------------------|-------|-------------------------|------|
|            | 2000                    | 2003  | 2000                   | 2003 | 2000                     | 2003  | 2000                    | 2003 |
| Norway     | 0.942                   | 0.963 | 1                      | 1    | 0.941                    | 0.960 | 3                       | 1    |
| Australia  | 0.939                   | 0.955 | 5                      | 3    | 0.956                    | 0.954 | 1                       | 2    |
| Srilanka   | 0.741                   | 0.751 | 89                     | 93   | 0.737                    | 0.747 | 70                      | 66   |
| China      | 0.726                   | 0.755 | 96                     | 85   | 0.724                    | 0.754 | 77                      | 64   |
| Indonesia  | 0.684                   | 0.697 | 110                    | 110  | 0.678                    | 0.691 | 91                      | 87   |
| India      | 0.577                   | 0.602 | 124                    | 127  | 0.560                    | 0.586 | 105                     | 98   |
| Pakistan   | 0.499                   | 0.527 | 138                    | 135  | 0.468                    | 0.508 | 120                     | 107  |
| Bangladesh | 0.478                   | 0.520 | 145                    | 139  | 0.468                    | 0.514 | 121                     | 105  |
| Nepal      | 0.490                   | 0.526 | 142                    | 136  | 0.470                    | 0.511 | 119                     | 106  |
| Mozambique | 0.322                   | 0.379 | 170                    | 168  | 0.307                    | 0.365 | 144                     | 133  |
| Niger      | 0.277                   | 0.281 | 172                    | 177  | 0.263                    | 0.271 | 146                     | 140  |

Source: Economic Survey 2005-2006.

**3.2 STATE OF POPULATION IN INDIA- THE NEED FOR STABILISATION**

India's landscape is just 2.4 per cent of the total world area, whereas its population is nearly 16.85 per cent of the world population. India accounted for 19.96 per cent of the estimated population of the developing countries in 2001 (5.18 billion). These facts clearly indicate that the pressure of population on the land in this country is very high. India is in the second stage of demographic transition, which is often termed as 'population explosion' and the ever-growing

population of the country is a source of constant concern and worry. One of the advantages that India will continue to enjoy for some years is what is termed as 'demographic dividend', namely a young population and a declining dependency ratio.

The population issue is not merely a matter of containing numbers. There is a synergy between population and natural resources. Increasing human activities, on one hand, adversely affect the environment and, on the other, degraded environment has a malign impact on human population. If the current trends of population growth continue unabated, and the patterns of human activity remain unchanged, it will not be possible for us to prevent irreversible damage to the environment with its concomitant tragic impact on all living beings on this earth.

The nexus between population, economic activity and the environment is a complex one. In this intricate and sensitive relationship, the human dimension is the key element. Environmental degradation has been the result of the efforts of all countries, developed and developing, to secure improved quality of life for the growing number of citizens. Population size, per capita resource use and consumption patterns directly threaten the very existence of the economic system. Thus the major threat that we face today is – unacceptably high rates of population growth mainly in developing countries and unsustainable consumption habits mainly in the developed area. Population stabilization is a complex task, which involves a whole range of issues. A meaningful population policy has to address itself to the entire gamut of relationships between people and resources, for generations yet to come.

### **3.3 CENSUS IN INDIA**

The Census is the most important single source of information on the life of people in India. It is a gigantic administrative exercise, comparable to the conduct of the general elections in India. It was as early as in 1872 that the first census was arranged in India. It was only a partial census and covered a very limited field, but it was of course, a good beginning. Next census was taken in 1881 and there after it was taken after every ten years. The scope of census operations has always been increasing and efforts are also made to collect more and more information from the respondents. The latest census is the 2001 Census, which is considered as the most comprehensive and the second largest census operation in the world. The census operation was carried on 1<sup>st</sup> March 2001 and it is noteworthy that census enumeration did take place in Jammu and Kashmir, and also in the newly formed states of Jharkand, Chathisgarh and Uttaranchal.

#### **3.3.1 Crux of India's Population Problem**

An in-depth study of the census reports makes it clear that the crux of India's population problem lies in four large northern states- Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. These are geographically continuous Hindi speaking states accounting for more than 40 per cent of India's population and 42 per cent of India's illiterate population. These states are called 'BIMARU'<sup>5</sup> states, an acronym coined in census operations in the 1980's, when the then Prime Minister, Rajiv Gandhi wanted some concrete advice about the stagnation of welfare programmes. Assam and Orissa are also demographically vulnerable states but comparatively, their population is small (less than 5 per cent of India's total population). On the other hand, the Southern states like Kerala,

Tamil Nadu, Andra Pradesh and Karnataka present a comparatively good picture on the demographic front. Hence, there is a 'North-South' demographic disparity and the resulting demographic imbalance is also a manifestation of the population problem.

Another acronym- 'DEMARU'<sup>6</sup> was coined to take note of the alarming data from 2001 Census. The most alarming finding of the 2001 Census is the sharp decline in the child sex ratio (0-6 age group), in the face of an increase in the sex ratio of the total population. In 'DEMARU', 'D' stands for daughters, 'E' stands for elimination and 'MARU' stands for killing. On the basis of a statistical cut off point of 50 points decline in juvenile sex ratio, Punjab, Haryana, Himachal Pradesh and Gujarat are classified as 'DEMARU' states. Misuse of medical technology to determine the sex of the unborn child is argued to culminate in female foeticide. For historical reasons, the son-complex is very strong in North-West India but what is shocking about 2001 census results is that the decline in sex ratio of child population is seen in every state of India with the exception of Kerala, Mizoram and Tripura where the sex ratio has increased slightly.

### **3.4 INTER-STATE VARIATIONS**

There are wide inter-state variations in structural and demographic variables in the country. Diversity in demographic and structural variables of India in 2001 is given in Table 3.4. The table shows that Kerala presents a comparatively good picture on demographic front. Kerala is a model state in the country as far as demographic transition and human development are concerned. The convincing performance of Kerala in achieving demographic transition, inspite of low economic development, has received global attention. Kerala has

achieved almost all the targets in controlling births by the middle or even before 1980s. The overall performance of the state with regard to the health as well as social status is of the developed countries. Thus, Kerala is an exceptional case and the state level disparities in demographic transition are cause of concern. Hence, in this chapter, we attempt to understand the relative position of major states on demographic front with special focus on Kerala.

**Table 3.4**  
**Demographic Diversity of India, 2001**

|                                       | <b>Maximum Value</b> | <b>State/ Union Territory</b> | <b>Minimum Value</b> | <b>State/ Union Territory</b> |
|---------------------------------------|----------------------|-------------------------------|----------------------|-------------------------------|
| Population                            | 166,052,859          | Uttar Pradesh                 | 60,595               | Lakshadweep                   |
| Density                               | 92,94                | Delhi                         | 13                   | Arunachal Pradesh             |
| Females per 1000 males                | 1,058                | Kerala                        | 709                  | Daman & Diu                   |
| Growth rate Decadal 1991-2001         | 64.4                 | Nagaland                      | 9.4                  | Kerala                        |
| Literary rate                         | 90.9                 | Kerala                        | 47.5                 | Bihar                         |
| a) No. of literates                   | 77,770,275           | Uttar Pradesh                 | 45,281               | Lakshadweep                   |
| b) Illiterates                        | 57,810,542           | Uttar Pradesh                 | 6,454                | Lakshadweep                   |
| SRS (2004) Birth Rate (Bigger States) | 30.8                 | Uttar Pradesh                 | 15.2                 | Kerala                        |
| Death Rate                            | 9.6                  | Orissa                        | 6.1                  | Kerala                        |
| Natural Growth Rate                   | 22.1                 | Bihar                         | 9.1                  | Kerala                        |
| Infant Mortality Rate                 | 79                   | Madhya Pradesh                | 12                   | Kerala                        |

Source: Census, 2001 and Sample Registration System, 2004.

### **3.5 DEMOGRAPHIC TRANSITION AND STRUCTURAL FEATURES OF POPULATION IN INDIA**

The demographic trends mirror economic as well as social and cultural factors. A popularly held belief is that as a country becomes economically more prosperous, its population growth tends to decline. This is a simplistic view of a complex phenomenon. A combination of social, cultural and economic factors contribute to decline in fertility rates and they include, among others, reducing infant mortality rate, raising educational levels of girls, improvement in socio-economic status of women and socio-economic development of the society. So here we attempt to look into the demographic and structural variables, which influence population transition.

#### **3.5.1 Demographic Transition**

India is a land of unity in diversity. There exists socio-economic and cultural diversities and as such, disparities exist in the levels of socio-economic development attained by states in India. The pace and trend of demographic transition are also different among the states. So in this section, an attempt is made to examine the interstate variations in demographic transition among the fifteen major states of our country. Inter-state variations in demographic transition are explained with the help of size and growth rate of population, crude birth rate, crude death rate, infant mortality rates, natural growth rates and fertility rates.

##### **3.5.1.1 Size and Distribution of Population**

The size and distribution of population in India by major states in 2001 is shown in Table 3.5. The population of India was 1027 million in 2001 and this

includes the population of Jammu and Kashmir where the 1991 Census could not be conducted. Uttar Pradesh, even after the new state of Uttaranchal was carved out in 2000, continues to be the most populous state in India with a population of 166.1 million and 16.2 per cent of India's population belongs to this state. Uttar Pradesh is followed by Maharashtra and Bihar and their share in India's population are 9.4 per cent and 8.1 per cent respectively. Among the fifteen major states, population is lowest in the state of Haryana (21.1 millions) followed by Punjab (24.3 millions), Assam (26.6 millions) and Kerala (31.8 millions). Among the states of India, Sikkim is the least populated one contributing 0.05 per cent of the total population of the country. Kerala's share in the nation's population is 3.1 per cent.

**Table 3.5**  
**Size and Distribution of**  
**Population in India by Major States, 2001**

(in millions)

| State          | Population | Percentage of India's population | Rank |
|----------------|------------|----------------------------------|------|
| Gujarat        | 50.6       | 4.9                              | 10   |
| Maharashtra    | 96.8       | 9.4                              | 2    |
| Andhra Pradesh | 75.7       | 7.4                              | 5    |
| West Bengal    | 80.2       | 7.8                              | 4    |
| Kerala         | 31.8       | 3.1                              | 12   |
| Madhya Pradesh | 60.4       | 5.9                              | 7    |
| Tamil Nadu     | 62.1       | 6.1                              | 6    |
| Rajasthan      | 56.5       | 5.5                              | 8    |
| Karnataka      | 52.7       | 5.1                              | 9    |
| Haryana        | 21.1       | 2.1                              | 15   |
| Punjab         | 24.3       | 2.4                              | 14   |
| Orissa         | 36.7       | 3.6                              | 11   |
| Assam          | 26.6       | 2.6                              | 13   |
| Uttar Pradesh  | 166.1      | 16.2                             | 1    |
| Bihar          | 82.9       | 8.1                              | 3    |
| INDIA          | 1,027      | 100.0                            | -    |

Source: Census Report, 2001.

### **3.5.1.2 Decadal Growth rate of Population**

Decadal growth rates of population by major states are given in Table 3.6. As on 2001, the decadal growth rate for India as a whole is 21.3 per cent. Among the states of India, the lowest decadal growth rate is recorded in Kerala (9.4 per cent) followed by Tamil Nadu (11.2 per cent) and Andhra Pradesh (13.9 per cent). Andhra Pradesh recorded the sharpest decline in the decadal growth rate. It declined to 13.9 per cent during 1991-2001 compared to 24.2 per cent during 1981-1991 (a decline of 10.3 per cent points). Among the major states of India, decadal growth rates are highest in Bihar (28.4 per cent) followed by Rajasthan (28.3 per cent). In fact, in Bihar the decadal growth rate has increased from 23.4 per cent in 1981-91 to 28.4 per cent in 1991-2001. The decadal growth rates are also high in the states of Uttar Pradesh and Madhya Pradesh. Thus, all the BIMARU states have high decadal growth rate of population and top the states where it is the highest. Out of the five states that have the highest decadal growth rates, four are 'BIMARU' states. Among the states of India, Nagaland recorded the highest growth rate of 64.4 per cent in 1991-2001.

**Table 3.6**  
**Percentage Decadal Growth**  
**Rate of Population by Major States, 1951-2001**

| State          | 1951-1961 | 1961-1971 | 1971-1981 | 1981-1991 | 1991-2001 | Rank in 2001 |
|----------------|-----------|-----------|-----------|-----------|-----------|--------------|
| Gujarat        | 26.9      | 29.4      | 27.7      | 21.2      | 22.5      | 7            |
| Maharashtra    | 23.6      | 27.5      | 24.5      | 15.7      | 22.6      | 6            |
| Andra Pradesh  | 15.7      | 20.9      | 23.1      | 24.2      | 13.9      | 13           |
| West Bengal    | 32.8      | 26.9      | 23.2      | 14.7      | 17.8      | 10           |
| Kerala         | 24.8      | 26.3      | 19.2      | 14.3      | 9.4       | 15           |
| Madhya Pradesh | 24.7      | 29.3      | 27.2      | 27.2      | 24.3      | 5            |
| Tamil Nadu     | 11.9      | 22.3      | 17.5      | 15.4      | 11.2      | 14           |
| Rajasthan      | 26.2      | 27.8      | 33.0      | 28.4      | 28.3      | 2            |
| Karnataka      | 21.6      | 24.2      | 26.8      | 21.1      | 17.3      | 11           |
| Haryana        | 33.8      | 32.2      | 28.8      | 27.4      | 28.1      | 3            |
| Punjab         | 21.6      | 21.7      | 23.9      | 20.8      | 19.8      | 8            |
| Orissa         | 19.8      | 25.1      | 20.2      | 20.1      | 15.9      | 12           |
| Assam          | 35.0      | 35.0      | 23.4      | 24.2      | 18.9      | 9            |
| Uttar Pradesh  | 16.4      | 19.5      | 25.4      | 25.6      | 25.8      | 4            |
| Bihar          | 19.8      | 20.9      | 24.2      | 23.4      | 28.4      | 1            |
| INDIA          | 21.6      | 24.8      | 24.7      | 23.9      | 21.3      | -            |

Source: Compiled from Census Reports of India.

### 3.5.1.3 Crude Birth Rate

Crude birth rate for major states of India is given in Table 3.7. Sample Registration System data show that it is 23.8/1000 for India as a whole in 2005. In 2005, birth rate recorded its highest value in Uttar Pradesh and Bihar (30.4/1000) followed by Madhya Pradesh (29.4/1000) and Rajasthan (28.6/1000). Among the major states of India, Birth rate recorded its lowest value in the state of Kerala (15/1000) followed by Tamil Nadu (16.5/1000). In 1981 also the birth rate is the highest in Uttar Pradesh followed by Bihar,

Madhya Pradesh and Rajasthan. Here also, we see that the 'BIMARU' states are lagging behind the other states. Among all the states of India, Birth rate is lowest in Goa (13.8/1000) followed by Manipur (13.9/1000).

**Table 3.7**  
**Estimated Birth Rates for Major States**  
**in India by Residence 1981-2005 (Per Thousand)**

| State          | 1981 | 1985 | 1990 | 1995 | 2001 | 2004 | 2005 |
|----------------|------|------|------|------|------|------|------|
| Gujarat        | 34.5 | 33.0 | 29.6 | 26.7 | 25.4 | 24.3 | 23.7 |
| Maharashtra    | 28.5 | 29.0 | 27.5 | 24.5 | 21.1 | 19.1 | 19.0 |
| Andra Pradesh  | 31.7 | 29.9 | 26.3 | 24.0 | 21.7 | 19.0 | 19.1 |
| West Bengal    | 33.2 | 29.4 | 28.2 | 23.6 | 20.7 | 19.3 | 18.8 |
| Kerala         | 25.6 | 23.3 | 19.6 | 17.7 | 18.0 | 15.2 | 15.0 |
| Madhya Pradesh | 37.6 | 39.4 | 37.1 | 33.0 | 30.7 | 29.8 | 29.4 |
| Tamil Nadu     | 28.0 | 24.7 | 21.6 | 20.2 | 19.3 | 17.1 | 16.5 |
| Rajasthan      | 37.1 | 39.7 | 33.6 | 33.2 | 31.1 | 29.0 | 28.6 |
| Karnataka      | 28.3 | 29.6 | 28.0 | 24.2 | 22.3 | 20.9 | 20.6 |
| Haryana        | 36.5 | 35.7 | 31.9 | 30.0 | 26.8 | 25.1 | 24.3 |
| Punjab         | 30.3 | 28.5 | 27.6 | 24.7 | 21.5 | 18.7 | 18.1 |
| Orissa         | 33.1 | 30.7 | 30.0 | 27.7 | 24.1 | 22.7 | 22.3 |
| Assam          | 33.0 | 34.3 | 29.7 | 29.3 | 27.0 | 25.1 | 25.0 |
| Uttar Pradesh  | 39.6 | 37.6 | 35.6 | 34.7 | 32.1 | 30.8 | 30.4 |
| Bihar          | 39.1 | 37.8 | 32.9 | 32.1 | 30.4 | 30.2 | 30.4 |
| INDIA          | 33.9 | 32.9 | 30.2 | 28.3 | 26.1 | 24.1 | 23.8 |

Source: SRS, Bulletins, various years.

#### 3.5.1.4 Crude Death Rate

Estimated death rates for major states of India are given in Table 3.8. In India, the death rates declined from 12.5/1000 in 1981 to 7.5/1000 in 2004. Death rate recorded its highest value in Orissa (9.5/1000) followed by Madhya Pradesh (9/1000), Uttar Pradesh (8.7/1000) and Assam (8.7/1000). Among the

major states, death rate recorded its lowest value in Kerala and West Bengal (6.4/1000) followed by Maharashtra, Haryana and Punjab (6.7/1000). Among all states, death rate recorded its lowest value in Nagaland (3.7/1000) followed by Manipur (4.3/1000), Arunachal Pradesh (4.7/1000) and Delhi (4.7/1000). Thus, from Table 3.7 and 3.8, we can see that, the estimated birth rate and death rate are lowest in the state of Kerala.

**Table 3.8**  
**Estimated Death Rates for Major States in India by Residence 1981 - 2005 (Per thousand)**

| State          | 1981 | 1985 | 1990 | 1995 | 2001 | 2004 | 2005 |
|----------------|------|------|------|------|------|------|------|
| Gujarat        | 12.0 | 10.8 | 8.9  | 7.6  | 7.9  | 6.9  | 7.1  |
| Maharashtra    | 9.6  | 8.4  | 7.4  | 7.4  | 7.5  | 6.2  | 6.7  |
| Andhra Pradesh | 11.1 | 10.3 | 9.1  | 8.3  | 8.2  | 7.0  | 7.3  |
| West Bengal    | 11.0 | 9.6  | 8.4  | 7.7  | 7.1  | 6.3  | 6.4  |
| Kerala         | 6.6  | 6.5  | 6.0  | 6.0  | 6.4  | 6.1  | 6.4  |
| Madhya Pradesh | 16.6 | 14.2 | 12.6 | 11.1 | 10.6 | 9.2  | 9.0  |
| Tamil Nadu     | 11.8 | 9.5  | 8.5  | 7.9  | 8.0  | 7.5  | 7.4  |
| Rajasthan      | 14.3 | 13.2 | 9.6  | 9.1  | 8.4  | 7.0  | 7.0  |
| Karnataka      | 9.1  | 8.8  | 8.1  | 7.6  | 7.7  | 6.9  | 7.1  |
| Haryana        | 11.3 | 9.1  | 8.4  | 8.0  | 7.7  | 6.6  | 6.7  |
| Punjab         | 9.4  | 8.9  | 7.8  | 7.3  | 7.4  | 6.4  | 6.7  |
| Orissa         | 13.1 | 14.0 | 11.7 | 10.8 | 10.6 | 9.6  | 9.5  |
| Assam          | 12.6 | 13.2 | 10.5 | 9.6  | 9.7  | 8.8  | 8.7  |
| Uttar Pradesh  | 16.3 | 15.8 | 12.0 | 10.4 | 10.5 | 8.8  | 8.7  |
| Bihar          | 13.9 | 15.0 | 10.6 | 10.5 | 9.1  | 8.1  | 8.1  |
| INDIA          | 12.5 | 11.8 | 9.7  | 9.0  | 8.7  | 7.5  | 7.6  |

Source: SRS Bulletins, various years.

### 3.5.1.5 Infant Mortality Rate

Infant mortality has a positive direct relationship with fertility. The experience of developed countries shows that a fall in infant mortality leads to a fall in fertility. Unfortunately, infant mortality rate is high in India. Infant

mortality rates of major states of India are given in Table 3.9. The table shows that IMR is declining in all the states and it declined from 110/1000 in 1981 to 58/1000 in 2005 at the national level. Among the states of India, IMR recorded its lowest value in the state of Kerala (14/2000) where as it is highest in Madhya Pradesh (76/1000) followed by Orissa (75/1000) and Uttar Pradesh (73/1000). IMR is also high in Rajasthan and Bihar, showing that all the BIMARU states experience high infant mortality rates. All other states, except Kerala, Maharashtra, Tamil Nadu and West Bengal, had an IMR of 40 and above, which calls for serious attention from the part of policy makers.

**Table 3.9**  
**Estimated Infant Mortality**  
**Rates by Residence for Major States of India 1981-2005**

| State          | 1981 | 1985 | 1990 | 1995 | 1999 | 2004 | 2005 |
|----------------|------|------|------|------|------|------|------|
| Gujarat        | 116  | 98   | 72   | 62   | 63   | 53   | 54   |
| Maharashtra    | 79   | 68   | 58   | 55   | 48   | 36   | 36   |
| Andra Pradesh  | 86   | 83   | 70   | 66   | 66   | 59   | 57   |
| West Bengal    | 91   | 74   | 63   | 59   | 52   | 40   | 38   |
| Kerala         | 37   | 31   | 17   | 16   | 14   | 12   | 14   |
| Madhya Pradesh | 142  | 122  | 111  | 99   | 91   | 79   | 76   |
| Tamil Nadu     | 91   | 81   | 59   | 56   | 52   | 41   | 37   |
| Rajasthan      | 108  | 108  | 84   | 85   | 81   | 67   | 68   |
| Karnataka      | 69   | 69   | 70   | 62   | 58   | 49   | 50   |
| Haryana        | 101  | 85   | 69   | 68   | 68   | 61   | 60   |
| Punjab         | 81   | 71   | 61   | 54   | 53   | 45   | 44   |
| Orissa         | 135  | 132  | 122  | 103  | 97   | 77   | 75   |
| Assam          | 106  | 111  | 76   | 77   | 76   | 66   | 68   |
| Uttar Pradesh  | 150  | 142  | 99   | 86   | 84   | 72   | 73   |
| Bihar          | 118  | 106  | 75   | 73   | 66   | 61   | 61   |
| INDIA          | 110  | 97   | 80   | 74   | 70   | 58   | 58   |

Source: SRS, Bulletins, various years.

### **3.5.1.6 Maternal Mortality Rate**

Maternal death rate gives the number of maternal deaths per lakh live births and stillbirths. There is a major data gap in India with regard to estimates on Maternal Mortality Rates. In order to fill this gap, data on maternal deaths were collected for the year 1997 through Sample Registration System. Estimates of rare events like maternal deaths through SRS may not be very accurate due to small sample size. The quality of data may also suffer due to various difficulties associated with ascertaining the cause of death through household inquiries. However, this is presented in Table 3.10. For India, MMR is 408/100,000 in 1997. Among the major states MMR is lowest in Gujarat (29/100,000) followed by Tamilnadu (76/100,000). MMR is found to be highest in Uttar Pradesh (707/100,000) followed by Rajasthan (677/100,000). MMR is also high in Madhya Pradesh and Bihar. Even in the state of Kerala, MMR is as high as 195/1,00,000 population. As maternal deaths are rare events wide fluctuations are seen in the estimates of MMR at the state level. The table shows that during 1997-2003, MMR for India, increased to 448/100,000 from 408/100.000. Among the fifteen major states, all the states except three (Uttar Pradesh, Bihar and Tamil Nadu) registered a decline in their MMR. In Uttar Pradesh and Bihar, MMR increased substantially, and this is a problem that has to be addressed very seriously.

**Table 3.10****Estimated MMR for Major States  
in India-1997 – 2003 MMR/1 lakh Live Births**

| State          | MMR 1997 | MMR 1997-2003 |
|----------------|----------|---------------|
| Gujarat        | 29       | 91            |
| Maharashtra    | 135      | 110           |
| Andra Pradesh  | 154      | 116           |
| West Bengal    | 264      | 212           |
| Kerala         | 195      | 67            |
| Madhya Pradesh | 498      | 365           |
| Tamil Nadu     | 76       | 86            |
| Rajasthan      | 677      | 440           |
| Karnataka      | 195      | 186           |
| Haryana        | 105      | 82            |
| Punjab         | 196      | 73            |
| Orissa         | 361      | 233           |
| Assam          | 401      | 278           |
| Uttar Pradesh  | 707      | 1028          |
| Bihar          | 451      | 563           |
| INDIA          | 408      | 448           |

Source: Compendium of India's fertility and mortality indicators, 1999.

**3.5.1.7 Natural Growth Rate of Population**

Estimated Natural Growth Rates of population show the difference between births and deaths. This is given in Table 3.11. The natural growth rate of population in India declined from 21.4 in 1981 to 16.3 in 2005. Among the major states of India, natural growth rate of population recorded its lowest value in Kerala (8.7) followed by Tamil Nadu (9.2) whereas it is highest in Bihar (22.3), followed by Uttar Pradesh (21.7) and Rajasthan (21.6) and Madhya Pradesh (20.5) in 2005. The 'BIMARU' states alone have a natural growth rate above twenty per thousand. Among all the states of India, natural growth rate of population is the lowest in Goa (6.6).

**Table 3.11****Estimated Natural Growth Rates of  
Population for Major States of India by Residence (Per thousand)**

| State          | 1981 | 1985 | 1990 | 1995 | 1999 | 2004 | 2005 |
|----------------|------|------|------|------|------|------|------|
| Gujarat        | 22.5 | 22.2 | 20.7 | 19.1 | 17.6 | 17.4 | 16.6 |
| Maharashtra    | 18.9 | 20.6 | 20.1 | 17.1 | 13.6 | 12.8 | 12.3 |
| Andra Pradesh  | 20.6 | 19.6 | 17.2 | 15.7 | 13.5 | 12.0 | 11.8 |
| West Bengal    | 22.2 | 19.8 | 19.8 | 15.9 | 13.6 | 13.1 | 12.4 |
| Kerala         | 19.0 | 16.8 | 13.6 | 11.7 | 11.5 | 9.1  | 8.7  |
| Madhya Pradesh | 21.0 | 25.2 | 24.5 | 21.9 | 20.1 | 20.6 | 20.5 |
| Tamil Nadu     | 16.2 | 15.2 | 13.1 | 12.3 | 11.3 | 9.6  | 9.2  |
| Rajasthan      | 22.8 | 26.5 | 24.0 | 24.1 | 22.7 | 22.0 | 21.6 |
| Karnataka      | 19.2 | 20.8 | 19.9 | 16.6 | 14.6 | 14.0 | 13.5 |
| Haryana        | 25.2 | 26.6 | 23.5 | 22.0 | 19.1 | 18.5 | 17.6 |
| Punjab         | 20.9 | 19.6 | 19.8 | 17.4 | 14.1 | 12.2 | 11.4 |
| Orissa         | 20.0 | 16.7 | 18.3 | 16.9 | 13.4 | 13.1 | 12.8 |
| Assam          | 20.4 | 21.1 | 19.2 | 19.7 | 17.3 | 16.3 | 16.3 |
| Uttar Pradesh  | 23.3 | 21.8 | 23.6 | 24.3 | 21.6 | 22.0 | 21.7 |
| Bihar          | 25.2 | 22.8 | 22.3 | 21.6 | 21.4 | 22.1 | 22.3 |
| INDIA          | 21.4 | 21.1 | 20.5 | 19.3 | 17.4 | 16.6 | 16.3 |

Source: SRS Bulletins, various years.

**3.5.1.8 Total Fertility Rate**

Total fertility rates for major states of India are given in Table 3.12. Here we have made use of two sources of data, viz., Sample Registration System data on Total Fertility Rates from 1981 – 1993 and data given by National Family Health Surveys from 1992 –93 to 2005 – 2006. SRS data reveal that fertility rates show a declining tendency for all the major states and for India as a whole, it

declined from 4.5 per cent in 1981 to 3.5 per cent by 1993. The SRS estimates show that, among the major states of India, fertility rate is highest in Uttar Pradesh (5.2 per cent) followed by Bihar (4.6 per cent) Rajasthan (4.5 per cent) and Madhya Pradesh (4.2 per cent). Thus, we see that, fertility rates are high among the 'BIMARU' states while it is the lowest in the South Indian states of Kerala (1.7 per cent) followed by Tamil Nadu (2.1 per cent) and Andra Pradesh (2.7 per cent).

**Table 3.12**  
**Estimated Total Fertility Rates**  
**for Major States of India (Per thousand)**

| STATE          | 1981 | 1985 | 1990 | 1993 | NFHS 1-1992-93 | NFHS 2-1998-99 | NFHS-3-2005-06 |
|----------------|------|------|------|------|----------------|----------------|----------------|
| Gujarat        | 4.3  | 3.9  | 3.4  | 3.2  | 2.99           | 2.72           | 2.42           |
| Maharashtra    | 3.6  | 3.5  | 3.2  | 2.9  | 2.86           | 2.52           | 2.11           |
| Andra Pradesh  | 4.0  | 3.7  | 3.1  | 2.7  | 2.59           | 2.25           | 1.79           |
| West Bengal    | 4.2  | 3.7  | 3.4  | 3.0  | 2.92           | 2.29           | 2.27           |
| Kerala         | 2.8  | 2.4  | 1.9  | 1.7  | 2.00           | 1.96           | 1.93           |
| Madhya Pradesh | 5.2  | 4.6  | 4.8  | 4.2  | NA             | 3.43           | 3.12           |
| Tamil Nadu     | 3.4  | 2.8  | 2.3  | 2.1  | 2.48           | 2.19           | 1.80           |
| Rajasthan      | 5.2  | 5.5  | 4.5  | 4.5  | 3.78           | 3.63           | 3.21           |
| Karnataka      | 3.6  | 3.6  | 3.2  | 2.9  | 2.85           | 2.13           | 2.08           |
| Haryana        | 5.0  | 4.6  | 3.8  | 3.7  | 3.99           | 2.88           | 2.69           |
| Punjab         | 4.0  | 3.5  | 3.2  | 3.0  | 1.99           | 2.21           | 2.92           |
| Orissa         | 4.3  | 3.8  | 3.5  | 3.1  | 2.92           | 2.46           | 2.37           |
| Assam          | 4.1  | 4.1  | 3.4  | 3.3  | 3.53           | 2.31           | 2.42           |
| Uttar Pradesh  | 5.8  | 5.6  | 5.2  | 5.2  | NA             | 4.06           | 3.82           |
| Bihar          | 5.7  | 5.4  | 4.8  | 4.6  | NA             | 3.7            | 4.00           |
| INDIA          | 4.5  | 4.3  | 3.8  | 3.5  | 3.39           | 2.85           | 2.68           |

Source: SRS Bulletins, and NFHS Reports, various years.

The fertility rates computed by the three National Family Health Surveys are also shown in Table 3.12. It also reveals that total fertility rate is high in the 'BIMARU' states. As per the data given by NFHS – 3 (2005-2006), total fertility rate is the highest in Bihar (4.00 per cent) followed by Uttar Pradesh (3.82 per cent), Rajasthan (3.2 per cent) and Madhya Pradesh (3.12 per cent). Among the fifteen Indian states, only the 'BIMARU' states registered a TFR of three and above. NFHS-3 also confirms the fact that total fertility is low among the southern states of India, viz., Andhra Pradesh (1.79 per cent) and Tamil Nadu (1.8 per cent) and Kerala (1.93 per cent). As per the SRS estimates of 1993, Kerala had the lowest total fertility rate among Indian states (1.7 per cent) while the NFHS-1 data show that Punjab is having the lowest total fertility rate (1.9 per cent) followed by Kerala (2.00 per cent). The latest NFHS data shows that Kerala is having the third lowest total fertility rate among the fifteen major states of India. Anyway, the 'North-South' demographic disparity is found to exist with respect to total fertility rates also, as the southern states recorded the lowest TFR while the northern states have their highest value, in both NFHS data and SRS estimates.

### **3.5.1.9 Age at Marriage**

Age at Marriage of females is an important determinant of fertility. Table 3.13 gives female age at effective marriage by major states of India. In 1997, female age at effective marriage is 19.5 years for India as a whole. Among the states of India, female age at marriage is highest in Kerala (22.0 years) followed by Punjab (20.9 years) and Tamil Nadu (20.6 years) where as it is the lowest in Andhra Pradesh (17.8 years) followed by Bihar (18.9), Rajasthan (19.1 years) and Madhya Pradesh (19.1 years). Here also, the 'BIMARU' states are lagging

behind the national average with the exception of Uttar Pradesh where it is slightly higher than the national average. Like Kerala, the female age at effective marriage is found to be high in southern states of Tamil Nadu and Karnataka.

**Table 3.13**  
**Female Age at Effective**  
**Marriage by Residence from 1991 - 1997**

| STATE          | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|----------------|------|------|------|------|------|------|------|
| Gujarat        | 20.2 | 20.3 | 19.9 | 20.4 | 20.7 | 20.3 | 20.3 |
| Maharashtra    | 18.9 | 19.0 | 18.8 | 19.1 | 18.9 | 19.4 | 19.2 |
| Andra Pradesh  | 18.2 | 17.8 | 17.8 | 17.8 | 18.1 | 17.9 | 17.8 |
| West Bengal    | 19.3 | 19.4 | 19.4 | 19.5 | 19.2 | 19.4 | 19.2 |
| Kerala         | 22.0 | 22.1 | 22.0 | 22.3 | 21.7 | 22.0 | 22.0 |
| Madhya Pradesh | 18.6 | 18.4 | 18.8 | 18.8 | 19.0 | 18.9 | 19.1 |
| Tamil Nadu     | 20.3 | 20.3 | 20.1 | 20.2 | 20.9 | 20.5 | 20.6 |
| Rajasthan      | 17.9 | 18.3 | 18.4 | 18.4 | 18.7 | 18.8 | 19.1 |
| Karnataka      | 19.4 | 19.4 | 19.4 | 19.4 | 19.2 | 19.4 | 19.3 |
| Haryana        | 19.2 | 19.0 | 18.9 | 19.2 | 19.2 | 19.2 | 19.3 |
| Punjab         | 20.4 | 20.5 | 20.6 | 20.3 | 20.8 | 20.7 | 20.9 |
| Orissa         | 19.8 | 20.7 | 20.0 | 19.5 | 19.8 | 19.6 | 19.8 |
| Assam          | 20.5 | 21.3 | 20.9 | 19.4 | 20.3 | 20.0 | 20.5 |
| Uttar Pradesh  | 19.1 | 19.3 | 19.3 | 19.5 | 19.6 | 19.4 | 19.6 |
| Bihar          | 18.8 | 19.0 | 18.9 | 18.6 | 18.5 | 18.6 | 18.9 |
| INDIA          | 19.5 | 19.5 | 19.6 | 19.4 | 19.4 | 19.4 | 19.5 |

Source: Compendium of India's Fertility and Mortality Indicators, 1999.

### 3.5.1.10 Current use of Family Planning

Current use of family planning methods among currently married women aged 15-49 is given in Table 3.14. It can be seen that there is an increase in the use of family planning methods by currently married women. It is seen that the percentage of currently married women who use any method of birth control and modern scientific method of birth control is on the increase at the national and

state levels. The use of modern methods of birth control increased from 36.5 per cent in 1992-93 (NFHS-1) to 48.5 per cent in 2005-06 (NFHS-3). The use of modern method of birth control is found highest in the state of Maharashtra (64.9 per cent) in NFHS-3 and this can be attributed to the high degree of urbanisation of the state. It is also high in the southern states of Andra Pradesh (67.0 per cent), Karnataka (62.5 per cent), Tamilnadu (60.0 per cent) and Kerala (57.9 per cent). The use of modern methods of contraception is found lowest in the state of Assam (27.0 per cent). It is lower than national average in three of the 'BIMARU' states viz., Bihar (28.8 per cent), Uttar Pradesh (29.3 per cent) and Rajasthan (44.4 per cent). Here also, the 'BIMARU' states lag behind the other states of India.

**Table 3.14**  
**Current use of Family Planning**  
**Among Currently Married Women Aged 15-49**

| State          | NFHS -1 (1992-93) |                      | NFHS -2 (1998-99) |                      | NFHS -3 (2005-06) |                      |
|----------------|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|
|                | <i>Any method</i> | <i>Modern method</i> | <i>Any method</i> | <i>Modern method</i> | <i>Any method</i> | <i>Modern method</i> |
| Gujarath       | 49.3              | 46.9                 | 59.0              | 53.3                 | 66.6              | 56.5                 |
| Maharashtra    | 54.1              | 52.9                 | 60.9              | 59.9                 | 66.9              | 64.9                 |
| Andra Pradesh  | 47.4              | 47.0                 | 59.6              | 58.9                 | 67.7              | 67.0                 |
| West Bengal    | 57.7              | 37.6                 | 66.6              | 47.3                 | 71.2              | 49.9                 |
| Kerala         | 63.3              | 54.4                 | 63.7              | 56.1                 | 68.6              | 57.9                 |
| Madhya Pradesh | NA                | NA                   | 44.1              | 42.8                 | 55.9              | 52.8                 |
| Tamil Nadu     | 49.8              | 45.2                 | 52.1              | 50.3                 | 61.4              | 60.0                 |
| Rajasthan      | 31.9              | 31.0                 | 40.3              | 38.1                 | 47.2              | 44.4                 |
| Karnataka      | 49.4              | 47.6                 | 58.3              | 56.5                 | 63.6              | 62.5                 |
| Haryana        | 49.7              | 44.4                 | 62.4              | 53.2                 | 63.4              | 58.2                 |
| Punjab         | 58.7              | 51.3                 | 66.7              | 53.8                 | 63.3              | 56.0                 |
| Orissa         | 36.3              | 34.7                 | 46.8              | 40.3                 | 50.7              | 44.6                 |
| Assam          | 43.0              | 19.9                 | 43.3              | 26.6                 | 56.5              | 27.0                 |
| Uttar Pradesh  | NA                | NA                   | 27.1              | 20.8                 | 43.6              | 29.3                 |
| Bihar          | NA                | NA                   | 23.5              | 21.6                 | 34.1              | 28.8                 |
| INDIA          | 40.7              | 36.5                 | 48.2              | 42.8                 | 56.3              | 48.5                 |

Source: Compiled from NFHS reports, various years.

### 3.5.1.11 Life Expectancy

The experience of the developed countries of the world shows that an increase in life expectancy leads to a decline in fertility. Life expectancy at birth by sex is given in Table 3.15. In India, life expectancy is 60.8 years for males and 62.5 for females during 1995-99. The only state in India having a life expectancy of seventy and above for both sexes is Kerala, where males on an average live for 70.6 years and females live for 76.1 years. Punjab ranks second among major states with respect to life expectancy (Males-66.9; Females-69.1 years). Among the major states of India, life expectancy is lowest in Madhya Pradesh (Males-56.5, Females-56.2 years). Life expectancy is also low and less than the national average in Orissa, Bihar, Uttar Pradesh and Rajasthan. Thus, life expectancy is low in the 'BIMARU' states.

**Table 3.15**  
**Life Expectancy at Birth by Sex in India-1991-1999**

| State          | 1991 – 1996 |        |       | 1995 – 1999 |        |       |
|----------------|-------------|--------|-------|-------------|--------|-------|
|                | Male        | Female | Total | Male        | Female | Total |
| Gujarat        | 60.9        | 62.7   | 61.80 | 61.7        | 63.7   | 62.8  |
| Maharashtra    | 64.0        | 65.9   | 64.95 | 64.5        | 67.0   | 65.75 |
| Andhra Pradesh | 61.4        | 64.5   | 62.95 | 61.6        | 64.1   | 62.85 |
| West Bengal    | 61.9        | 61.9   | 61.90 | 62.8        | 64.3   | 63.45 |
| Kerala         | 68.6        | 75.0   | 71.80 | 70.6        | 76.1   | 73.35 |
| Madhya Pradesh | 59.2        | 58.0   | 58.60 | 56.5        | 56.2   | 56.35 |
| Tamil Nadu     | 62.3        | 63.1   | 62.70 | 63.7        | 65.7   | 64.70 |
| Rajasthan      | 60.5        | 61.3   | 60.90 | 59.8        | 60.9   | 60.35 |
| Karnataka      | 64.2        | 65.3   | 64.75 | 62.4        | 65.5   | 63.95 |
| Haryana        | 65.2        | 64.2   | 64.70 | 64.1        | 65.0   | 64.55 |
| Punjab         | 66.6        | 66.5   | 66.55 | 66.9        | 69.1   | 68.00 |
| Orissa         | 60.1        | 58.4   | 59.25 | 57.6        | 57.8   | 57.70 |
| Assam          | 58.7        | 58.5   | 58.60 | 57.1        | 57.6   | 57.35 |
| Uttar Pradesh  | 57.1        | 52.8   | 54.95 | 58.9        | 57.7   | 58.30 |
| Bihar          | 60.8        | 60.1   | 60.45 | 60.7        | 58.9   | 59.80 |
| INDIA          | 60.6        | 61.7   | 61.15 | 60.8        | 62.5   | 61.65 |

Source: Health Information of India, 1997 - 1998 and 2003.

### **3.5.2 Structural Features of Population in India**

Demographic transition depends on a number of socio-economic factors and hence it is often difficult to discern the important variables that affect fertility transition. Structural features of population like literacy rate, sex ratio, density of population, rural- urban population, work participation ratio etc. influences the pace of demographic transition. Besides these structural factors, socio-economic factors like poverty, accessibility to primary health and educational facilities, level of human development and gender equality also influence fertility. Hence we attempt to examine the changes in these variables in India, by considering the fifteen major states.

#### **3.5.2.1 Literacy Rate**

One of the strongest associations worldwide is negative relation between education and fertility, especially female schooling and fertility. Hence literacy rate is an important indicator of social development of any society. Percentage of literates to population aged 7 and above is given in Table 3.16. The literacy rate is 65.4 per cent in 2001 for India. As per the 2001 Census report, the male literary rate is 75.9 per cent and the female literary rate is 54.2 per cent in India. Among the major states of India, the literary rate is highest in Kerala (90.9 per cent) and lowest in Bihar (47.5 per cent), followed by Uttar Pradesh (57.4 per cent). Sex-wise break up of literacy rates also shows that it is highest in Kerala for both sexes and is the lowest in Bihar. Also literacy rates, especially female literacy rates are found to be generally low in the 'BIMARU' states. As mentioned earlier, it is lowest in Bihar (33.6 per cent) followed by Uttar Pradesh (43 per cent), Rajasthan (44.3 per cent) and Madhya Pradesh (50.3 per cent). Here also, we find that 'BIMARU' states are lagging behind the other states of

India. Compared to 1991, the overall literacy rate increased by 13.2 percentage points and the gap between male and female literacy rates has decreased from 28.8 per cent points in 1991 to 21.7 per cent points in 2001. For the first time since independence, there has been an absolute decline in the number of illiterate persons. The number of illiterates declined by 32 million during the last decade.

**Table 3.16**  
**Literacy Rates by Sex in**  
**India by Major States- 1981 to 2001**

| STATE          | Percentage of Literates to Population aged 7 and above |       |         |         |       |         |         |       |         |
|----------------|--|-------|---------|---------|-------|---------|---------|-------|---------|
|                | 1981   |       |         | 1991    |       |         | 2001    |       |         |
|                | Persons  | Males | Females | Persons | Males | Females | Persons | Males | Females |
| Gujarat        | 52.21  | 65.14 | 38.46   | 61.29   | 73.13 | 48.64   | 70.0    | 80.5  | 58.6    |
| Maharashtra    | 55.83  | 69.65 | 41.01   | 64.87   | 76.56 | 52.32   | 77.3    | 86.3  | 67.5    |
| Andra Pradesh  | 35.66  | 46.83 | 24.16   | 44.09   | 55.13 | 32.72   | 61.1    | 70.9  | 51.2    |
| West Bengal    | 48.65  | 59.93 | 36.07   | 57.70   | 67.81 | 46.56   | 69.2    | 77.6  | 60.2    |
| Kerala         | 81.56  | 87.73 | 75.65   | 89.81   | 93.62 | 86.17   | 90.9    | 94.2  | 87.9    |
| Madhya Pradesh | 34.23  | 48.42 | 19.00   | 44.20   | 58.42 | 28.85   | 64.1    | 76.8  | 50.3    |
| Tamil Nadu     | 54.39  | 68.05 | 40.43   | 62.66   | 73.75 | 51.33   | 73.5    | 82.3  | 64.6    |
| Rajasthan      | 30.11  | 44.77 | 14.00   | 38.55   | 54.99 | 20.44   | 61.00   | 76.5  | 44.3    |
| Karnataka      | 46.21  | 58.73 | 33.17   | 56.04   | 67.26 | 44.34   | 67.00   | 76.3  | 57.5    |
| Haryana        | 43.88  | 58.51 | 26.93   | 55.85   | 69.10 | 40.47   | 68.6    | 79.3  | 56.3    |
| Punjab         | 48.17  | 55.56 | 39.70   | 58.51   | 65.66 | 50.41   | 70.0    | 75.6  | 63.6    |
| Orissa         | 40.97  | 56.45 | 25.14   | 49.09   | 63.09 | 34.68   | 63.6    | 76.0  | 51.0    |
| Assam          | N.A  | N.A   | N.A     | 52.89   | 61.87 | 43.03   | 64.3    | 71.9  | 56.0    |
| Uttar Pradesh  | 33.35  | 47.45 | 17.19   | 41.60   | 55.73 | 25.31   | 57.4    | 70.2  | 43.0    |
| Bihar          | 32.05  | 46.60 | 16.52   | 38.48   | 52.49 | 22.89   | 47.5    | 60.3  | 33.6    |
| INDIA          | 43.67  | 56.37 | 29.85   | 52.19   | 64.20 | 39.19   | 65.4    | 75.9  | 54.2    |

Source: Census Report of India, various years.

### 3.5.2.2 Sex Ratio

Sex ratio is an indirect indicator of the status of women in a society. Kerala has a unique position with regard to sex ratio. Sex ratio, denoting the number of females per 1000 males is 933 in 2001 compared to 927 in 1991 for India as a whole (Table 3.17). Among the states of India, Kerala has the highest sex ratio of 1058 per 1000 males and sex ratio recorded its lowest value in the state of Haryana (861) followed by Punjab (874) and Uttar Pradesh (898). In all the 'BIMARU' states, sex ratio is lower than the national average. On the other hand, the southern states of India like Kerala, Tamil Nadu, Andhra Pradesh and Karnataka top the states where the sex ratio is recorded to be highest among the Indian states.

**Table 3.17**  
**Sex Ratio by Major States of India, 1951-2001**

| STATE          | 1951 | 1961 | 1971 | 1981 | 1991 | 2001 | Rank 2001 |
|----------------|------|------|------|------|------|------|-----------|
| Gujarat        | 952  | 940  | 934  | 942  | 934  | 921  | 9         |
| Maharashtra    | 941  | 936  | 930  | 937  | 934  | 922  | 8         |
| Andhra Pradesh | 986  | 981  | 977  | 975  | 972  | 978  | 3         |
| West Bengal    | 865  | 878  | 891  | 911  | 917  | 934  | 6         |
| Kerala         | 1028 | 1022 | 1016 | 1032 | 1036 | 1058 | 1         |
| Madhya Pradesh | 945  | 932  | 920  | 921  | 912  | 920  | 10        |
| Tamil Nadu     | 1007 | 992  | 978  | 977  | 974  | 986  | 2         |
| Rajasthan      | 921  | 908  | 911  | 919  | 910  | 922  | 8         |
| Karnataka      | 966  | 959  | 957  | 963  | 960  | 964  | 5         |
| Haryana        | 871  | 868  | 867  | 870  | 865  | 861  | 13        |
| Punjab         | 844  | 854  | 865  | 879  | 882  | 874  | 12        |
| Orissa         | 1022 | 1001 | 988  | 981  | 971  | 972  | 4         |
| Assam          | 868  | 869  | 896  | 910  | 923  | 932  | 7         |
| Uttar Pradesh  | 908  | 907  | 876  | 882  | 876  | 898  | 11        |
| Bihar          | 1000 | 1005 | 957  | 948  | 907  | 921  | 9         |
| INDIA          | 946  | 941  | 930  | 934  | 927  | 933  | -         |

Source: Census Reports of India, various years.

### 3.5.2.3 Child Sex Ratio

Child sex ratio and the percentage of population in the age group 0-6 by major states is given in Table 3.18. The most alarming finding of the 2001 Census is the sharp fall in sex ratio of children (0-6 age group). The child sex ratio was 927 in 2001 compared to 945 in 1991 which means a decline by 18 points in the number of female children in the 0 – 6 age group. The decline in child sex ratio is found to be more pronounced in the states of Punjab (82), Haryana (59) and Gujarat (50) among the major states of India. Himachal Pradesh has also got a highly unfavourable child sex ratio. Punjab, Haryana, Gujarat and Himachal Pradesh are acronymed as ‘DEMARU’ states, on the basis of a statistical cut off point of 50 points decline in juvenile sex ratio. Since son complex is very strong, medical technology is misused and the sex of the unborn child is determined and this is argued to culminate in female foeticide. What is even more shocking about 2001 Census results is that this decline in sex ratio of child population is seen in every state of India with the exception of Kerala, Mizoram and Tripura where the sex ratio has increased slightly.

**Table 3.18****Child Sex Ratio by Major States, 1991 and 2001**

| <b>STATE</b>   | <b>1991</b> | <b>2001</b> | <b>Difference Points</b> |
|----------------|-------------|-------------|--------------------------|
| Gujarat        | 928         | 878         | -50                      |
| Maharashtra    | 946         | 917         | -29                      |
| Andra Pradesh  | 975         | 964         | -11                      |
| West Bengal    | 967         | 963         | -4                       |
| Kerala         | 958         | 963         | 5                        |
| Madhya Pradesh | 941         | 929         | -12                      |
| Tamil Nadu     | 948         | 939         | -9                       |
| Rajasthan      | 916         | 909         | -7                       |
| Karnataka      | 960         | 949         | -11                      |
| Haryana        | 879         | 820         | -59                      |
| Punjab         | 875         | 793         | -82                      |
| Orissa         | 967         | 950         | -17                      |
| Assam          | 975         | 964         | -11                      |
| Uttar Pradesh  | 927         | 916         | -11                      |
| Bihar          | 953         | 938         | -15                      |
| INDIA          | 945         | 927         | -18                      |

Source: Census Report of India, 2001.

The percentage of population in the age group 0 – 6 by major states of India is shown in Table 3.19. The percentage of male population aged 0 – 6 is 17.77 per cent at the national level in 1991 and it declined to 15.47 per cent in 2001. The percentage of female population aged 0 – 6 declined from 18.12 per cent in 1991 to 15.36 per cent in 2001. The decline in the percentage of male population aged 0 – 6 is found highest in the states of Andra Pradesh and Karnataka (3.59 points). The decline in the percentage of female population aged 0 – 6 is found to be highest in the state of Punjab (4.3 points) followed by Haryana (4.09).

**Table 3.19****Percentage of Population in the  
Age Group 0-6 by Major States of India, 1991 and 2001**

| STATE          | Male  |       |            | Female |       |            |
|----------------|-------|-------|------------|--------|-------|------------|
|                | 1991  | 2001  | Difference | 1991   | 2001  | Difference |
| Gujarat        | 16.53 | 14.51 | -2.02      | 16.43  | 13.85 | -2.58      |
| Maharashtra    | 17.00 | 13.67 | -3.33      | 17.23  | 13.59 | -3.64      |
| Andra Pradesh  | 16.46 | 12.87 | -3.59      | 16.51  | 12.68 | -3.83      |
| West Bengal    | 16.56 | 13.67 | -2.89      | 17.45  | 14.10 | -3.35      |
| Kerala         | 13.71 | 12.04 | -1.67      | 12.68  | 10.95 | -1.73      |
| Madhya Pradesh | 19.64 | 17.50 | -2.14      | 20.27  | 17.68 | -2.59      |
| Tamil Nadu     | 13.51 | 11.24 | -2.27      | 13.15  | 10.71 | -2.44      |
| Rajasthan      | 20.06 | 18.63 | -1.43      | 20.21  | 18.31 | -1.84      |
| Karnataka      | 16.63 | 13.04 | -3.59      | 16.63  | 12.85 | -3.78      |
| Haryana        | 18.84 | 15.81 | -3.03      | 19.14  | 15.05 | -4.09      |
| Punjab         | 16.36 | 13.15 | -3.21      | 16.23  | 11.93 | -4.30      |
| Orissa         | 16.93 | 14.27 | -2.66      | 16.85  | 13.95 | -2.90      |
| Assam          | 19.2  | 16.07 | -3.13      | 20.29  | 16.62 | -3.67      |
| Uttar Pradesh  | 19.84 | 18.18 | -1.66      | 20.99  | 18.54 | -2.45      |
| Bihar          | 20.21 | 19.41 | -0.8       | 21.24  | 19.78 | -1.46      |
| INDIA          | 17.77 | 15.47 | -2.30      | 18.12  | 15.36 | -2.76      |

Source: Census Report of India, 2001.

**3.5.2.4 Density of Population**

Density of population gives the number of persons living per square km. Density of population has shown an increasing trend over the years (Table 3.20). It is 324 persons at the national level in 2001. The 2001 Census shows that among the major states, density is highest in West Bengal (904) followed by Bihar (880) and Kerala (819) and it is the lowest in Rajasthan (165) followed by Madhya Pradesh (196). Among all states, density is the highest in National

Capital Territory of Delhi (9,294) and it is the lowest in Arunachal Pradesh (13) followed by Mizoram (42). Kerala is one of the most densely populated states of India. In 1951, Kerala had the highest density of population (349 persons per sq. km) among the Indian states. In 2001, Kerala is in the third position with respect to density.

**Table 3.20**  
**Density of Population in India by Major States**

| State          | 1951 | 1961 | 1971 | 1981 | 1991 | 2001 | Rank 2001 |
|----------------|------|------|------|------|------|------|-----------|
| Gujarat        | 83   | 105  | 136  | 174  | 211  | 258  | 11        |
| Maharashtra    | 104  | 129  | 164  | 204  | 257  | 314  | 9         |
| Andra Pradesh  | 113  | 131  | 158  | 195  | 242  | 275  | 10        |
| West Bengal    | 296  | 394  | 499  | 615  | 767  | 904  | 1         |
| Kerala         | 349  | 435  | 549  | 655  | 749  | 819  | 3         |
| Madhya Pradesh | 59   | 73   | 94   | 118  | 158  | 196  | 13        |
| Tamil Nadu     | 232  | 259  | 317  | 372  | 429  | 478  | 6         |
| Rajasthan      | 47   | 59   | 75   | 100  | 129  | 165  | 14        |
| Karnataka      | 101  | 123  | 153  | 194  | 235  | 275  | 10        |
| Haryana        | 128  | 172  | 227  | 292  | 372  | 477  | 7         |
| Punjab         | 182  | 221  | 269  | 333  | 403  | 482  | 5         |
| Orissa         | 94   | 113  | 141  | 169  | 203  | 236  | 12        |
| Assam          | 102  | 138  | 186  | 230  | 286  | 340  | 8         |
| Uttar Pradesh  | 215  | 251  | 300  | 377  | 548  | 689  | 4         |
| Bihar          | 223  | 267  | 324  | 402  | 685  | 880  | 2         |
| INDIA          | 117  | 142  | 177  | 216  | 267  | 324  | -         |

Source: Census Reports of India, Various years.

### 3.5.2.5 Urban Population

It is observed in many studies that urbanisation is not conducive for fertility. Generally, in urban areas, fertility is found to be lower when compared with the rural areas. Table 3.21 gives the urban population by major states of India. The percentage of population living in the urban areas increased from 17.98 per cent in 1961 to 25.72 per cent in 2001 at the national level. Among the major states, Maharashtra is having the highest urban population (38.73 per cent) followed by Gujarat (34.40 per cent) while it is found lowest in the state of Assam (11.08 per cent) followed by Bihar (13.17 per cent). Among all states, Goa is having the highest urban population. The 'BIMARU' states have an urban population, that is less than the national average.

**Table 3.21**  
**Urban Population by Major States, 1961 – 2001**

| STATE          | 1961  | 1971  | 1981  | 1991  | 2001  |
|----------------|-------|-------|-------|-------|-------|
| Gujarat        | 25.27 | 28.08 | 31.1  | 34.40 | 37.35 |
| Maharashtra    | 28.22 | 31.17 | 35.0  | 38.73 | 42.40 |
| Andhra Pradesh | 17.44 | 19.31 | 23.3  | 26.84 | 27.08 |
| West Bengal    | 24.45 | 24.75 | 26.5  | 27.39 | 28.03 |
| Kerala         | 15.11 | 16.24 | 18.7  | 26.44 | 25.97 |
| Madhya Pradesh | 14.29 | 16.39 | 20.3  | 23.21 | 26.67 |
| Tamil Nadu     | 26.69 | 30.26 | 33.0  | 34.20 | 43.86 |
| Rajasthan      | 16.28 | 17.63 | 21.0  | 22.88 | 23.38 |
| Karnataka      | 22.33 | 24.31 | 28.9  | 30.91 | 33.98 |
| Haryana        | 17.23 | 17.66 | 21.9  | 24.79 | 29.00 |
| Punjab         | 23.06 | 23.73 | 27.7  | 29.72 | 33.95 |
| Orissa         | 6.32  | 8.41  | 11.8  | 13.43 | 14.97 |
| Assam          | 7.37  | 8.82  | 10.2  | 11.08 | 12.72 |
| Uttar Pradesh  | 12.85 | 14.02 | 17.9  | 19.89 | 20.78 |
| Bihar          | 8.43  | 10.00 | 12.5  | 13.17 | 10.47 |
| INDIA          | 17.98 | 19.91 | 23.31 | 25.72 | 27.78 |

Source: Census Reports of India, Various years.

14  
204.6 29.5/15

### 3.5.2.6 Primary Health and Education

Importance given to health and education certainly influences demographic transition. Relative position of major states on primary health and education is given in Table 3.22. Among the major states; Kerala is ahead of all other states of India with respect to primary health and education, and is followed by Tamil Nadu. Among the major states Bihar followed by Uttar Pradesh, Rajasthan and Madhya Pradesh lags behind with respect to primary health and education. Thus, the 'BIMARU' states lag behind with respect to primary education and health and the severity of the population problem in these states can be attributed to this low achievement on primary health and education.

**Table 3.22**

**Position of Major States on Primary Health and Education**

| State          | Health |      |      |      | Education |      |      |      |
|----------------|--------|------|------|------|-----------|------|------|------|
|                | Score  |      | Rank |      | Score     |      | Rank |      |
|                | 2004   | 2005 | 2004 | 2005 | 2004      | 2005 | 2004 | 2005 |
| Gujarat        | 1.46   | 1.45 | 6    | 6    | 2.32      | 2.33 | 8    | 9    |
| Maharashtra    | 1.59   | 1.78 | 4    | 4    | 3.24      | 3.06 | 3    | 3    |
| Andra Pradesh  | 1.37   | 1.43 | 7    | 7    | 2.19      | 2.37 | 9    | 8    |
| West Bengal    | 1.15   | 1.27 | 8    | 8    | 2.16      | 2.18 | 10   | 11   |
| Kerala         | 2.97   | 2.62 | 1    | 1    | 3.87      | 3.81 | 1    | 1    |
| Madhya Pradesh | 0.55   | 0.74 | 11   | 11   | 1.64      | 1.83 | 12   | 12   |
| Tamil Nadu     | 1.95   | 2.13 | 2    | 2    | 3.27      | 3.11 | 2    | 2    |
| Rajasthan      | 0.88   | 0.87 | 9    | 9    | 1.19      | 1.75 | 13   | 13   |
| Karnataka      | 1.86   | 1.90 | 3    | 3    | 2.57      | 2.69 | 5    | 6    |
| Haryana        | 0.79   | 0.66 | 13   | 13   | 2.41      | 2.25 | 6    | 10   |
| Punjab         | 1.72   | 1.62 | 5    | 5    | 2.79      | 2.79 | 4    | 5    |
| Orissa         | 0.59   | 0.80 | 10   | 10   | 1.65      | 2.41 | 11   | 7    |
| Assam          | 0.59   | 0.70 | 12   | 12   | 2.36      | 2.84 | 7    | 4    |
| Uttar Pradesh  | 0.46   | 0.45 | 14   | 14   | 0.98      | 1.28 | 14   | 14   |
| Bihar          | 0.30   | 0.37 | 15   | 15   | 0.72      | 0.64 | 15   | 15   |

Source: Economic Review, 2005.

### 3.5.2.7 Poverty

The head count index of poverty of major states is given in Table 3.23. In India, poverty declined from 54.88 per cent in 1973-74 to 26.1 per cent in 1999-2000. In 1999 – 2000, poverty recorded its lowest value in the state of Punjab (6.16 per cent) followed by Haryana (8.74 per cent) and Kerala (12.72 per cent). Poverty is found highest in Orissa (47.15 per cent) followed by Bihar (42.6 per cent). Decline in poverty was very drastic in the state of Kerala. In general, poverty in rural areas are higher than the urban areas. In three of 'BIMARU' states – Bihar, Madhya Pradesh and Uttar Pradesh, poverty is very high.

**Table 3.23**  
**The Head Count Index of**  
**Poverty of Major States in India- 1973-74 and 1999-2000**

| State          | 1973-74 |       |          | 1999-2000 |       |          |
|----------------|---------|-------|----------|-----------|-------|----------|
|                | Rural   | Urban | Combined | Rural     | Urban | Combined |
| Gujarat        | 46.35   | 52.57 | 48.15    | 13.17     | 15.59 | 14.07    |
| Maharashtra    | 57.71   | 43.87 | 53.27    | 23.72     | 26.81 | 25.02    |
| Andra Pradesh  | 48.41   | 50.61 | 48.86    | 11.05     | 26.63 | 15.77    |
| West Bengal    | 73.16   | 34.67 | 63.43    | 31.85     | 14.86 | 27.62    |
| Kerala         | 59.19   | 62.74 | 59.79    | 9.38      | 20.27 | 12.72    |
| Madhya Pradesh | 62.66   | 52.65 | 61.78    | 37.06     | 13.44 | 37.43    |
| Tamil Nadu     | 57.43   | 49.40 | 59.94    | 20.55     | 22.11 | 21.12    |
| Rajasthan      | 44.76   | 52.13 | 46.14    | 13.74     | 19.85 | 15.28    |
| Karnataka      | 55.14   | 52.53 | 54.47    | 17.38     | 25.25 | 20.04    |
| Haryana        | 34.23   | 40.18 | 35.36    | 8.27      | 9.99  | 8.74     |
| Punjab         | 28.21   | 27.96 | 28.15    | 6.35      | 5.75  | 6.16     |
| Orissa         | 67.28   | 55.62 | 66.18    | 48.01     | 42.83 | 47.15    |
| Assam          | 52.67   | 36.92 | 51.21    | 40.04     | 7.47  | 36.09    |
| Uttar Pradesh  | 56.53   | 60.09 | 57.07    | 31.22     | 30.89 | 31.15    |
| Bihar          | 62.99   | 52.96 | 61.91    | 44.30     | 32.91 | 42.60    |
| INDIA          | 56.44   | 49.01 | 54.88    | 27.09     | 23.62 | 26.10    |

Source: Economic Review, 2005.

### 3.5.2.8 Human Development

Human Development Index is an indicator of the socio-economic well being of people in a country or society. Human Development Index of major states is shown in Table 3.24. With respect to Human development, India ranks 127<sup>th</sup> among the nations of world. Among the states of India, Human Development Index records its highest value in the state of Kerala (0.638) followed by Punjab (0.537) and Tamil Nadu (0.531) in 2001. HDI value is the lowest in Bihar (0.367) followed by Assam (0.386). In all the three points of time, HDI is highest in Kerala and lowest in Bihar. The value and rank of HDI in the states of Uttar Pradesh, Madhya Pradesh and Rajasthan are also low, and they are at the bottom where as southern states of India viz., Kerala, Tamil Nadu and Karnataka are better placed with respect to human development.

**Table 3.24**

**Human Development Index of Major States, 1981-2001**

| State          | 1981  |      | 1991  |      | 2001  |      |
|----------------|-------|------|-------|------|-------|------|
|                | HDI   | Rank | HDI   | Rank | HDI   | Rank |
| Gujarat        | 0.360 | 4    | 0.431 | 5    | 0.479 | 5    |
| Maharashtra    | 0.363 | 3    | 0.345 | 11   | 0.404 | 10   |
| Andra Pradesh  | 0.298 | 8    | 0.377 | 8    | 0.416 | 9    |
| West Bengal    | 0.305 | 7    | 0.404 | 7    | 0.472 | 7    |
| Kerala         | 0.500 | 1    | 0.91  | 1    | 0.638 | 1    |
| Madhya Pradesh | 0.245 | 3    | 0.328 | 12   | 0.394 | 11   |
| Tamil Nadu     | 0.343 | 6    | 0.466 | 3    | 0.531 | 3    |
| Rajasthan      | 0.256 | 11   | 0.347 | 10   | 0.424 | 8    |
| Karnataka      | 0.346 | 5    | 0.412 | 6    | 0.478 | 6    |
| Haryana        | 0.360 | 4    | 0.443 | 4    | 0.509 | 4    |
| Punjab         | 0.411 | 2    | 0.475 | 2    | 0.537 | 2    |
| Orissa         | 0.267 | 10   | 0.345 | 11   | 0.404 | 10   |
| Assam          | 0.272 | 9    | 0.348 | 9    | 0.386 | 13   |
| Uttar Pradesh  | 0.255 | 2    | 0.314 | 13   | 0.388 | 12   |
| Bihar          | 0.237 | 4    | 0.308 | 14   | 0.367 | 14   |
| INDIA          | 0.302 | -    | 0.381 | -    | 0.472 | -    |

Source: National Human Development Report, 2001.

### 3.5.2.9 Gender Equality

Gender equality is an indicator of the status enjoyed by females in a society. Among the Indian states, Gender Equality Index (GEI) recorded its highest value in Kerala in 1981 as well as in 1991 (Table 3.25). GEI is also high in the states of Tamil Nadu, Andra Pradesh and Karnataka showing that in all the southern states, GEI is high and Bihar ranks last with respect to gender equality among the major states followed by Uttar Pradesh.

**Table 3.25**

**Gender Equality Index for India by Major States**

| STATES         | 1981 |      | 1991 |      | Percentage Change (1981 – 1991) |
|----------------|------|------|------|------|---------------------------------|
|                | GDI  | Rank | GDI  | Rank |                                 |
| Gujarat        | 0.72 | 3    | 0.71 | 6    | -1.24                           |
| Maharashtra    | 0.74 | 2    | 0.79 | 4    | 7.16                            |
| Andra Pradesh  | 0.74 | 2    | 0.80 | 3    | 7.66                            |
| West Bengal    | 0.56 | 8    | 0.63 | 10   | 13.49                           |
| Kerala         | 0.87 | 1    | 0.83 | 1    | -5.39                           |
| Madhya Pradesh | 0.66 | 6    | 0.66 | 8    | -0.30                           |
| Tamil Nadu     | 0.71 | 4    | 0.81 | 2    | 14.51                           |
| Rajasthan      | 0.65 | 7    | 0.69 | 7    | 6.46                            |
| Karnataka      | 0.71 | 4    | 0.75 | 5    | 6.51                            |
| Haryana        | 0.54 | 10   | 0.71 | 6    | 33.21                           |
| Punjab         | 0.69 | 5    | 0.71 | 6    | 3.20                            |
| Orissa         | 0.55 | 9    | 0.64 | 9    | 16.82                           |
| Assam          | 0.46 | 12   | 0.58 | 11   | 24.46                           |
| Uttar Pradesh  | 0.45 | 13   | 0.52 | 12   | 16.33                           |
| Bihar          | 0.47 | 11   | 0.47 | 13   | -0.42                           |
| INDIA          | 0.62 | -    | 0.68 | -    | 9.03                            |

Source: National Human Development Report, 2001.

In order to confirm the association between female education and demographic variables, we use a correlation matrix. The correlation matrix

shows the relationship between female education and demographic variables like decadal growth rate of population, crude birth rate, crude death rate, infant mortality rate and total fertility rate. We consider literacy and the demographic variables at three points of time and the point of time is specified in the matrix. The correlation matrix is worked out on the basis of the Table 3.26.

The correlation matrix (Table 3.27) shows that there is high degree of negative association between female literacy and demographic variables like decadal growth rate of population, birth rate, death rate, infant mortality rate and total fertility rate. The coefficients are significant, showing that there is high degree of association between female education and the selected demographic variables.

**Table 3.26**

**Female Literacy and Demographic Variables- INDIA**

| States         | Female Literacy Rate |       |      | Decadal G.R. of Population |         |         | Crude Birth Rate |      |      | Crude Death Rate |      |      | Infant Mortality Rate |      |      | Total Fertility Rate |      |         |
|----------------|----------------------|-------|------|----------------------------|---------|---------|------------------|------|------|------------------|------|------|-----------------------|------|------|----------------------|------|---------|
|                | 1981                 | 1991  | 2001 | 1971-81                    | 1981-91 | 1991-01 | 1981             | 1990 | 2001 | 1981             | 1990 | 2001 | 1981                  | 1990 | 2002 | 1981                 | 1990 | 2005-06 |
| Gujarat        | 38.46                | 48.64 | 58.6 | 27.7                       | 21.2    | 22.5    | 34.5             | 29.6 | 25.4 | 12               | 8.9  | 7.9  | 116                   | 72   | 60   | 4.3                  | 3.4  | 2.42    |
| Maharashtra    | 41.01                | 52.32 | 67.5 | 24.5                       | 15.7    | 22.6    | 28.5             | 27.5 | 21.1 | 9.6              | 7.4  | 7.5  | 79                    | 58   | 45   | 3.6                  | 3.2  | 2.11    |
| Andra Pradesh  | 24.16                | 32.72 | 51.2 | 23.1                       | 24.2    | 13.9    | 31.7             | 26.3 | 21.7 | 11.1             | 9.1  | 8.2  | 86                    | 70   | 62   | 4.0                  | 3.1  | 1.79    |
| West Bengal    | 36.07                | 46.56 | 60.2 | 23.2                       | 14.7    | 17.8    | 33.2             | 28.2 | 20.7 | 11               | 8.4  | 7.1  | 91                    | 63   | 49   | 4.2                  | 3.4  | 2.27    |
| Kerala         | 75.65                | 86.17 | 87.9 | 19.2                       | 14.3    | 9.4     | 25.6             | 19.6 | 18   | 6.6              | 6    | 6.4  | 37                    | 17   | 10   | 2.8                  | 1.9  | 1.93    |
| Madhya Pradesh | 19.00                | 28.85 | 50.3 | 27.2                       | 27.2    | 24.3    | 37.6             | 37.1 | 30.7 | 16.6             | 12.6 | 10.6 | 142                   | 111  | 85   | 5.2                  | 4.8  | 3.12    |
| Tamil Nadu     | 40.43                | 51.33 | 64.6 | 17.5                       | 15.4    | 11.2    | 28               | 21.6 | 19.3 | 11.8             | 8.5  | 8    | 91                    | 59   | 44   | 3.4                  | 2.3  | 1.8     |
| Rajasthan      | 14.00                | 20.44 | 44.3 | 33.0                       | 28.4    | 28.3    | 37.1             | 33.6 | 31.1 | 14.3             | 9.6  | 8.4  | 108                   | 84   | 78   | 5.2                  | 4.5  | 3.21    |
| Karnataka      | 33.17                | 44.34 | 57.5 | 26.8                       | 21.1    | 17.3    | 28.3             | 28   | 22.3 | 9.1              | 8.1  | 7.7  | 69                    | 70   | 55   | 3.6                  | 3.2  | 2.08    |
| Haryana        | 26.93                | 40.47 | 56.3 | 28.8                       | 27.4    | 28.1    | 36.5             | 31.9 | 26.8 | 11.3             | 8.4  | 7.7  | 101                   | 69   | 62   | 5.0                  | 3.8  | 2.69    |
| Punjab         | 39.70                | 50.41 | 63.6 | 23.9                       | 20.8    | 19.8    | 30.3             | 27.6 | 21.5 | 9.4              | 7.8  | 7.4  | 81                    | 61   | 51   | 4.0                  | 3.2  | 2.92    |
| Orissa         | 25.14                | 34.68 | 51.0 | 20.2                       | 20.1    | 15.9    | 33.1             | 30   | 24.1 | 13.1             | 11.7 | 10.6 | 135                   | 122  | 87   | 4.3                  | 3.5  | 2.37    |
| Assam          | 40.00                | 43.03 | 56.0 | 23.4                       | 24.2    | 18.9    | 33               | 29.7 | 27   | 12.6             | 10.5 | 9.7  | 106                   | 76   | 70   | 4.1                  | 3.4  | 2.42    |
| Uttar Pradesh  | 17.19                | 25.31 | 43.0 | 25.4                       | 25.6    | 25.8    | 39.6             | 35.6 | 32.1 | 16.3             | 12   | 10.5 | 150                   | 99   | 80   | 5.8                  | 5.2  | 3.82    |
| Bihar          | 16.52                | 22.89 | 33.6 | 24.2                       | 23.4    | 28.4    | 39.1             | 32.9 | 30.4 | 13.9             | 10.6 | 9.1  | 118                   | 75   | 61   | 5.7                  | 4.8  | 4.00    |
| INDIA          | 29.85                | 39.19 | 54.2 | 24.7                       | 23.9    | 21.3    | 33.9             | 30.2 | 26.1 | 12.5             | 9.7  | 8.7  | 110                   | 80   | 60   | 4.5                  | 3.8  | 2.68    |

Source: Compiled from Census Reports and Sample Registration System Bulletins, various years.

**Table 3.27**

**Correlation Matrix – Female Literacy and Demographic Variables- INDIA**

| Variables         | Year    | Female Literacy Rate |       |       | Decadal G.R. of Population |         |         | Crude Birth Rate |      |      | Crude Death Rate |      |      | Infant Mortality Rate |      |      | Total Fertility Rate |      |         |
|-------------------|---------|----------------------|-------|-------|----------------------------|---------|---------|------------------|------|------|------------------|------|------|-----------------------|------|------|----------------------|------|---------|
|                   |         | 1981                 | 1991  | 2001  | 1971-81                    | 1981-91 | 1991-01 | 1981             | 1990 | 2001 | 1981             | 1990 | 2001 | 1981                  | 1990 | 2002 | 1981                 | 1990 | 2005-06 |
| Dec. G.R. of Popn | 1981    | 1.00                 |       |       |                            |         |         |                  |      |      |                  |      |      |                       |      |      |                      |      |         |
|                   | 1991    | 0.99                 | 1.00  |       |                            |         |         |                  |      |      |                  |      |      |                       |      |      |                      |      |         |
|                   | 2001    | 0.95                 | 0.97  | 1.00  |                            |         |         |                  |      |      |                  |      |      |                       |      |      |                      |      |         |
| CBR               | 1971-81 | -0.55                | -0.53 | -0.46 | 1.00                       |         |         |                  |      |      |                  |      |      |                       |      |      |                      |      |         |
|                   | 1981-91 | -0.74                | -0.75 | -0.71 | 0.72                       | 1.00    |         |                  |      |      |                  |      |      |                       |      |      |                      |      |         |
|                   | 1991-01 | -0.69                | -0.68 | -0.68 | 0.80                       | 0.69    | 1.00    |                  |      |      |                  |      |      |                       |      |      |                      |      |         |
| CDR               | 1981    | -0.81                | -0.82 | -0.85 | 0.58                       | 0.76    | 0.82    | 1.00             |      |      |                  |      |      |                       |      |      |                      |      |         |
|                   | 1990    | -0.83                | -0.83 | -0.80 | 0.70                       | 0.79    | 0.85    | 0.91             | 1.00 |      |                  |      |      |                       |      |      |                      |      |         |
|                   | 2001    | -0.76                | -0.80 | -0.81 | 0.65                       | 0.84    | 0.83    | 0.92             | 0.92 | 1.00 |                  |      |      |                       |      |      |                      |      |         |
| IMR               | 1981    | -0.81                | -0.83 | -0.81 | 0.37                       | 0.67    | 0.59    | 0.86             | 0.84 | 0.86 | 1.00             |      |      |                       |      |      |                      |      |         |
|                   | 1990    | -0.74                | -0.78 | -0.77 | 0.19                       | 0.61    | 0.43    | 0.76             | 0.79 | 0.78 | 0.93             | 1.00 |      |                       |      |      |                      |      |         |
|                   | 2001    | -0.64                | -0.69 | -0.68 | 0.09                       | 0.56    | 0.33    | 0.64             | 0.70 | 0.71 | 0.85             | 0.97 | 1.00 |                       |      |      |                      |      |         |
| TFR               | 1981    | -0.77                | -0.78 | -0.77 | 0.30                       | 0.59    | 0.58    | 0.84             | 0.83 | 0.80 | 0.94             | 0.93 | 0.88 | 1.00                  |      |      |                      |      |         |
|                   | 1990    | -0.80                | -0.79 | -0.74 | 0.29                       | 0.58    | 0.43    | 0.66             | 0.78 | 0.67 | 0.82             | 0.91 | 0.89 | 0.90                  | 1.00 |      |                      |      |         |
|                   | 2002    | -0.87                | -0.88 | -0.82 | 0.47                       | 0.75    | 0.56    | 0.75             | 0.84 | 0.77 | 0.85             | 0.89 | 0.86 | 0.89                  | 0.96 | 1.00 |                      |      |         |
| TFR               | 1981    | -0.84                | -0.85 | -0.87 | 0.58                       | 0.76    | 0.85    | 0.98             | 0.91 | 0.93 | 0.85             | 0.74 | 0.63 | 0.82                  | 0.66 | 0.74 | 1.00                 |      |         |
|                   | 1990    | -0.84                | -0.85 | -0.85 | 0.62                       | 0.74    | 0.85    | 0.93             | 0.96 | 0.94 | 0.85             | 0.77 | 0.68 | 0.81                  | 0.71 | 0.77 | 0.96                 | 1.00 |         |
|                   | 2005-06 | -0.58                | -0.59 | -0.60 | 0.58                       | 0.66    | 0.77    | 0.82             | 0.82 | 0.85 | 0.71             | 0.60 | 0.54 | 0.68                  | 0.54 | 0.61 | 0.87                 | 0.88 | 1.00    |

### **3.6 CONCLUSION**

The above discussion of demographic and structural features of population of India by major states shows wide disparities among the states. It is crystal clear that Kerala is ahead of all the states with respect to demographic transition, health and literacy levels. Among the states of India, Kerala is the state where the growth rates of population, birth, death, infant mortality and fertility rates are the lowest. Female age at marriage, life expectancy, literacy rates and sex ratio registered its highest value in Kerala. Kerala is also ahead of all other states with respect to health and education, and hence ranks first in human development. Kerala is also the state where poverty is comparatively low and ranks third among the states with lowest poverty. The southern states like Tamil Nadu, Andhra Pradesh and Karnataka also follow the same suit as that of Kerala while the Northern states, especially BIMARU states, have still a long road to travel.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

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Thesis submitted to the University of Calicut  
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## **DEMOGRAPHIC TRANSITION IN KERALA – AN INTER-DISTRICT ANALYSIS**

### *4.1 Demographic Features of Population*

#### *4.1.1 Size of Population*

#### *4.1.2 Growth Rate of Population*

#### *4.1.3 Total Fertility Rate*

#### *4.1.4 Crude Birth Rate*

#### *4.1.5 Age at Marriage*

#### *4.1.6 Couple Protection Rate*

#### *4.1.7 Child Woman Ratio*

#### *4.1.8 Dependency Ratio*

#### *4.1.9 Crude Death Rate*

#### *4.1.10 Infant and Child Mortality Rate*

#### *4.1.11 Maternal Mortality Rate*

### *4.2 Structural Features of Population*

#### *4.2.1 Literacy Rate*

#### *4.2.2 Accessibility to Educational Institutions*

#### *4.2.3 Sex Ratio*

#### *4.2.4 Density of Population*

#### *4.2.5 Work Participation Rate*

#### *4.2.6 Urban Population*

#### *4.2.7 Accessibility to Health Institutions and Hospital Beds*

#### *4.2.8 Percapita Income*

#### *4.2.9 Human Development*

#### *4.2.10 Gender Development*

### *4.3 Conclusion*

## CHAPTER - IV

### **DEMOGRAPHIC TRANSITION IN KERALA – AN INTER-DISTRICT ANALYSIS**

The state of Kerala, often called, as 'God's own country', is the land of coconuts. It is situated on the southwestern edge of Indian Peninsula. The state was formed on 1<sup>st</sup> November, 1956, as a result of the reorganization of Indian states on a linguistic basis. Kerala has a total area of 38, 863 square kilometers, which accounts for 1.18 per cent of the total land area of the country. At the same time Kerala supports 3 per cent of the population of the country, which indicates that Kerala is one of densely populated states of India.

The state of Kerala has received worldwide attention and appreciation for its success in several key areas of the social sector including literacy, education, health and family planning. Kerala has done remarkably well in demographic transition. The birth rates and death rates of the state is very low, facilitating comparison with the most developed countries of the world. The enormous success in the social sector in general, and population transition in particular, occurred at a time when the state performed poorly on the economic front (Panikar and Soman, 1985<sup>1</sup>; Kannan, 1990<sup>2</sup>; and George, 1993)<sup>3</sup>. The basic feature of the Kerala model of development is the paradox of social development and economic stagnation. In spite of the poor performance of the real producing sectors like agriculture and industry, Kerala was able to attain high level of social sector development.

Even though Kerala has achieved high educational levels and favourable demographic features, the pace of demographic transition is not the same in all

the districts of Kerala. This can be seen from the works of eminent demographers. Bhat (1996)<sup>4</sup> has estimated fertility rates of all the districts of Kerala using the 1981 and 1991 censuses. According to these estimates the Total Fertility Rates varied from 1.6 in Ernakulam to 3.4 in Malappuram during 1984-90. In early 1990, only five districts viz., Palakkad, Malappuram, Wayanad, Kannur and Kasargod in Kerala have registered a TFR above the replacement level. The remaining districts had already achieved below replacement level of fertility. Guilmoto and Rajan (2002)<sup>5</sup> in their estimates based on 2001 Census find that Malappuram is the only district in Kerala where the TFR is above the replacement levels. Guilmoto and Rajan (2001)<sup>6</sup> in a detailed spatial study on the fertility in Indian districts indicates that Alappuzha in Kerala is supposed to be the forerunner of fertility decline even during the 1960's.

Rajan and Aliyar (2003)<sup>7</sup> observe fertility variations across rural Kerala and finds that it were still sizeable in 1991, as recorded fertility levels in some localities can be twice as high as in other localities. The lowest fertility area is found along the coast from Thrisur in the north to Kollam in the south and includes the regions around Kochi and Kottayam. The authors observe that the highest local fertility is recorded in the Malappuram city. Malappuram is actually the only district in Kerala where child woman ratios tend to decrease in hilly areas. The singularity of this district in terms of high fertility is mainly related to the proportion of Muslims, which accounts for no less than two-thirds of the district total.

As there is inter-district disparity in fertility transition and its pace, in this chapter we focus on the trends in demographic transition among the districts of

Kerala, especially after the formation of the state. For this purpose we concentrate on the size and growth rate of population, fertility and mortality indicators of Kerala, district wise. We also focus on the structural variables, which do have either a direct or indirect effect on the unique demographic features noticed in our state.

#### **4.1 DEMOGRAPHIC FEATURES OF POPULATION**

In this section, we concentrate on the demographic trends seen in Kerala, with the help of evidence presented by various data sources. The inter-district variations are looked into with special focus on Malappuram district. In this section, we examine the size and growth rate of population, the fertility indicators and the mortality indicators one by one.

##### **4.1.1 Size of Population**

Size and growth rate of population depicts the speed at which the population of an area changes. Table 4.1 gives district-wise population of Kerala from 1961-2001. As per the 1961 Census reports, Thiruvananthapuram district is having the highest population followed by Ernakulam and Thrissur. Malappuram district which ranked seventh with respect of size of population in 1961 came first in 2001, having a population of more than 36 lakhs. Thiruvananthapuram and Ernakulam district of Kerala follows Malappuram district with respect to size of population. Till 1991, Thiruvananthapuram was the most populated district of Kerala.

**Table 4.1**  
**Population of Kerala by Districts, 1961-2001**

(in persons)

| Sl. No | State/District     | 1961       | 1971       | 1981       | 1991       | 2001       |
|--------|--------------------|------------|------------|------------|------------|------------|
|        | <b>KERALA</b>      | 16,903,715 | 21,347,375 | 25,453,680 | 29,011,237 | 31,838,619 |
| 1.     | Kasargode          | 512,146    | 683,020    | 872,741    | 1,070,629  | 1,203,342  |
| 2.     | Kannur             | 1,177,948  | 1,552,809  | 1,930,726  | 2,224,819  | 2,412,365  |
| 3.     | Wayanad            | 275,255    | 413,850    | 554,026    | 671,195    | 78,6627    |
| 4.     | Kozhikode          | 1,403,413  | 1,821,734  | 2,245,265  | 2,612,897  | 2,878,498  |
| 5.     | Malappuram         | 1,387,370  | 1,856,357  | 2,402,701  | 3,093,190  | 3,629,640  |
| 6.     | Palakkad           | 1,369,508  | 1,685,347  | 2,044,399  | 2,376,160  | 2,617,072  |
| 7.     | Thrissur           | 1,688,333  | 2,128,877  | 2,439,633  | 2,734,333  | 2,975,440  |
| 8.     | Ernakulam          | 1,698,513  | 2,163,594  | 2,535,204  | 2,797,779  | 3,098,378  |
| 9.     | Idukki             | 579,071    | 765,392    | 969,292    | 1,076,555  | 1,128,605  |
| 10.    | Kottayam           | 1,313,983  | 1,539,030  | 1,697,442  | 1,819,581  | 1,952,901  |
| 11.    | Alappuzha          | 1,404,269  | 1,671,286  | 1,865,455  | 1,990,603  | 2,105,349  |
| 12.    | Pathanamthitta     | 888,272    | 1,028,208  | 1,125,345  | 1,186,628  | 1,231,577  |
| 13.    | Kollam             | 1,461,103  | 1,839,265  | 2,175,339  | 2,398,583  | 2,584,118  |
| 14.    | Thiruvananthapuram | 1,744,531  | 2,198,606  | 2,596,112  | 2,938,583  | 3,234,707  |

Source: Compiled from Census Reports of Kerala, Various years.

Sex wise population and ranking of the districts of Kerala on the basis of population is presented in Table 4.2 Malappuram district is having the highest male, and female population and owes a share of 11.4 per cent of the total population of the state. Wayanad, the least populated district of Kerala is having a share of 2.47 per cent in the total population of the state. Only in two districts of Kerala, viz., Idukki and Wayanad, the absolute number of females is less than that of males. In terms of geographical areas, Idukki district ranks first (5019 sq. kms.) followed by Palakkad (44.80 sq kms.) and Malappuram (3550 sq. kms) Alappuzha is having the lowest area of 1414 sq kms followed by Kasargod (1992 sq. kms).

**Table 4.2****Ranking of Districts by Population Size, 2001**

| Sl. No. | State/District     | Population 2001 | Male     | Female   | Percent to total Population | Population Rank | Geographical Area |
|---------|--------------------|-----------------|----------|----------|-----------------------------|-----------------|-------------------|
|         | <b>KERALA</b>      | 31838619        | 15468664 | 16369955 | -                           | -               | 38863             |
| 1.      | Malappuram         | 3629640         | 1759479  | 1870161  | 11.40                       | 1               | 3550              |
| 2.      | Thiruvananthapuram | 3234707         | 1571424  | 1663293  | 10.16                       | 2               | 2192              |
| 3       | Ernakulam          | 3098378         | 1535881  | 1562497  | 9.73                        | 3               | 2407              |
| 4       | Thrissur           | 2975440         | 1422047  | 1553393  | 9.34                        | 4               | 3032              |
| 5       | Kozhikode          | 2878498         | 1398674  | 1479824  | 9.34                        | 5               | 2344              |
| 6       | Palakkad           | 2617072         | 1265794  | 1351278  | 8.22                        | 6               | 4480              |
| 7       | Kollam             | 2584118         | 1248616  | 1335502  | 8.12                        | 7               | 2491              |
| 8       | Kannur             | 2412365         | 1154144  | 1258221  | 7.58                        | 8               | 2966              |
| 9       | Alappuzha          | 2105349         | 1012572  | 1092777  | 6.61                        | 9               | 1414              |
| 10      | Kottayam           | 1952901         | 964433   | 988468   | 6.13                        | 10              | 2203              |
| 11      | Pathanamthitta     | 1231577         | 588035   | 643542   | 3.87                        | 11              | 2642              |
| 12      | Kasargod           | 1203342         | 587763   | 615579   | 3.78                        | 12              | 1992              |
| 13      | Idukki             | 128605          | 566405   | 562200   | 3.55                        | 13              | 5019              |
| 14      | Wayanad            | 786627          | 393397   | 393230   | 2.47                        | 14              | 2131              |

Source: Census Report, 2001 and Economic Review, 2000.

#### 4.1.2 Growth Rate of Population

A review of district-wise growth of population for five decades from 1951-61 to 1991-2000 is shown in Table 4.3. The Table shows that there has been a steady decline in the rate of growth of population in all districts of Kerala, especially during 1970's and 1980's. In Ernakulam and Kollam districts, the annual average growth of population was that of only one per cent during the 1980's. In three districts – Kottayam, Alappuzha and Pathanamthitta, the annual average rate of growth was below one per cent. Among the districts of Kerala, the growth rate of population is the highest in Malappuram and the lowest

growth rate of population is seen in the district of Pathanamthitta. The decadal growth rate for the state on an average is 9.42 per cent in 2001. The decadal growth rates of Malappuram (17.22 per cent), Wayanad (17.04 per cent), Kasargode (12.30 per cent), Kozhikode (9.87 per cent), Palakkad (9.86 per cent) and Thiruvananthapuram (9.78 per cent) are higher than the state average of 9.42 per cent. All the districts in Kerala depicted a decline in decadal growth rate between 1991-2001 when compared with 1981-1991. Malappuram achieved a reduction of about 12 points between these two decades and this is the highest among the districts of Kerala.

**Table 4.3**

**Percentage Decadal Variation in Population 1951-2001**

| Sl. No | State/District     | Percent Decadal Variation |         |         |         |         |
|--------|--------------------|---------------------------|---------|---------|---------|---------|
|        |                    | 1951-61                   | 1961-71 | 1971-81 | 1981-91 | 1991-01 |
|        | <b>KERALA</b>      | 24.76                     | 26.29   | 19.24   | 13.98   | 9.42    |
| 1.     | Kasargod           | 24.60                     | 33.36   | 27.78   | 22.67   | 12.30   |
| 2      | Kannur             | 30.24                     | 31.82   | 24.34   | 16.27   | 7.13    |
| 3      | Wayanad            | 62.60                     | 50.35   | 33.87   | 21.15   | 17.04   |
| 4      | Kozhikode          | 25.71                     | 29.81   | 23.25   | 16.69   | 9.87    |
| 5      | Malappuram         | 20.67                     | 33.80   | 29.43   | 28.87   | 17.22   |
| 6      | Palakkad           | 12.79                     | 23.06   | 21.30   | 16.23   | 9.86    |
| 7      | Thrissur           | 20.32                     | 26.09   | 14.60   | 12.08   | 8.70    |
| 8      | Eranakulam         | 21.87                     | 27.38   | 17.18   | 10.36   | 9.09    |
| 9      | Idukki             | 74.72                     | 32.18   | 26.64   | 11.22   | 6.96    |
| 10     | Kottayam           | 16.03                     | 17.13   | 10.29   | 7.20    | 6.76    |
| 11     | Alappuzha          | 20.45                     | 19.01   | 11.62   | 6.71    | 5.21    |
| 12     | Pathanamthitta     | 23.50                     | 15.75   | 9.45    | 5.45    | 3.72    |
| 13     | Kollam             | 31.59                     | 25.88   | 18.27   | 10.25   | 7.33    |
| 14     | Thiruvananthapuram | 31.38                     | 26.03   | 18.08   | 13.19   | 9.78    |

Source: Census of India, 1991 and 2001.

### **4.1.3 Total Fertility Rate**

Reliable data on fertility trends of Kerala are available only since the introduction of the Sample Registration System. However, indirect estimates are made by several demographers and economists using the census data, and are available for different periods. So we have to depend on different sources of data in the study of fertility behaviour.

Kerala achieved the replacement level of fertility even at the beginning of the 1990's. The demographic targets set by UNICEF (2001)<sup>8</sup> aims to reduce the existing level of TFR from 1.9 to 1.6. NFHS-1 observes- “at current fertility rates, women in Kerala will have an average of two children”<sup>9</sup> (41 per cent lower than the national average). Kerala's Total Fertility Rate declined to 1.7 by the year 1993 and is, remaining around this figure (Table 4.4). In fact Malappuram is the only district in Kerala where TFR is above replacement level (2.4). Wayanad, Kasargod and Palakkad are the other districts, which have a fertility rate above the state average. It is seen that the northern districts of Kerala have relatively high fertility when compared with the southern districts. Total fertility rate is the lowest in Pathanamthitta, Alappuzha and Ernakulam.

**Table 4.4****Total Fertility Rates in Kerala by Districts 1974-1980 to 1994-2001**

| Sl.No | State/District     | Total Fertility Rate |           |           |
|-------|--------------------|----------------------|-----------|-----------|
|       |                    | 1974-1980            | 1984-1990 | 1994-2001 |
|       | KERALA             | 2.9                  | 2.0       | 1.7       |
| 1     | Kasargod           | 2.0                  | 2.5       | 1.9       |
| 2     | Kannur             | 3.5                  | 2.1       | 1.7       |
| 3     | Wayanad            | 3.8                  | 2.3       | 2.0       |
| 4     | Kozhikode          | 3.0                  | 2.0       | 1.7       |
| 5     | Malappuram         | 4.3                  | 3.4       | 2.4       |
| 6     | Palakkad           | 3.4                  | 2.4       | 1.8       |
| 7     | Thrissur           | 2.5                  | 1.9       | 1.6       |
| 8     | Ernakulam          | 2.4                  | 1.6       | 1.5       |
| 9     | Idukki             | 2.9                  | 1.8       | 1.6       |
| 10    | Kottayam           | 2.4                  | 1.7       | 1.6       |
| 11    | Alappuzha          | 2.3                  | 1.6       | 1.5       |
| 12    | Pathanamthitta     | -                    | 1.7       | 1.5       |
| 13    | Kollam             | 2.7                  | 1.8       | 1.6       |
| 14    | Thiruvananthapuram | 2.3                  | 1.8       | 1.6       |

Source: Bhat (1996) and Guilmoto and Rajan (2002).

**4.1.4 Crude Birth Rate**

Birth rate varied considerably from district to district. This is shown in Table 4.5. It varied from 14.5 in Pathanamthitta to 22.4 in Malappuram during 1994-2001. While the birth rates in some districts in south Kerala, viz, Alapuzha, Eranakulam, Kottayam and Pathanamthitta, seemed to have definitely crossed the replacement levels, the birth rates in some of the northern districts such as Malappuram, Kasargode and Wayanad was reported to be near the all-India average.

**Table 4.5****Crude Birth Rate in Kerala by Districts 1974-1980 to 1994-2001**

| Sl.No | State/District     | Crude Birth Rate |           |           |
|-------|--------------------|------------------|-----------|-----------|
|       |                    | 1974-1980        | 1984-1990 | 1994-2001 |
|       | KERALA             | 25.0             | 20.3      | 17.1      |
| 1.    | Kasargod           | NA               | 24.4      | 18.9      |
| 2.    | Kannur             | 28.8             | 20.5      | 16.6      |
| 3     | Wayanad            | 31.4             | 23.4      | 19.5      |
| 4     | Kozhikode          | 26.3             | 20.5      | 17.4      |
| 5     | Malappuram         | 33.6             | 29.5      | 22.4      |
| 6     | Palakkad           | 22.5             | 18.8      | 17.3      |
| 7     | Thrissur           | 22.2             | 18.7      | 16.1      |
| 8     | Ernakulam          | 21.4             | 16.9      | 15.7      |
| 9     | Idukki             | 26.7             | 19.8      | 17.0      |
| 10    | Kottayam           | 20.1             | 16.6      | 15.6      |
| 11    | Alappuzha          | 21.0             | 16.7      | 15.2      |
| 12    | Pathanamthitta     | NA               | 17.2      | 14.5      |
| 13    | Kollam             | 23.3             | 18.5      | 16.2      |
| 14    | Thiruvananthapuram | 22.8             | 19.6      | 16.4      |

Source: Bhat (1996) and Guilmoto and Rajan (2002).

**4.1.5 Age at Marriage**

The number of married women and its ratio in the total population is a major determinant of the birth rate. The age at which males and females marry may vary even within societies and it is not uniform across different regions. A rise in the age at marriage affects the level of fertility. The age at marriage of women in Kerala is always higher than India even at the turn of this century. The age at marriage in Kerala is estimated as 28 for males and 22.7 for females in 1999. This is shown in Table 4.6. Among the districts of Kerala, male and female age at marriage is found highest in Ernakulam, Kottayam and Alappuzha and the

lowest age at marriage is seen in Malappuram district. In fact, Malappuram is the only district in Kerala, having a mean age at marriage (18.7) that is less than twenty years. Mean age at marriage for males is also the lowest in Malappuram district (25.78 years). The age at marriage in Kerala for males is the highest in the district of Thrissur (29.1 years) followed by Kannur (28.4 years). Thus we find that the age at marriage for both males and females is the lowest in Malappuram District.

**Table 4.6**

**Trends in Mean Age at Marriage by Districts, 1971-1991**

| Sl. No | State/District     | Male  |       |       |      | Females |       |       |      |
|--------|--------------------|-------|-------|-------|------|---------|-------|-------|------|
|        |                    | 1971  | 1981  | 1991  | 1998 | 1971    | 1981  | 1991  | 1998 |
|        | <b>KERALA</b>      | 26.30 | 27.20 | 27.90 | 28.7 | 20.80   | 21.90 | 22.30 | 22.7 |
| 1      | Kasargode          | -     | -     | 28.41 | 27.6 | -       | -     | 21.68 | 20.6 |
| 2      | Kannur             | 27.43 | 25.87 | 28.78 | 28.4 | 19.98   | 21.03 | 22.43 | 20.8 |
| 3      | Wayanad            | -     | 25.05 | 26.33 | 25.6 | -       | 20.37 | 21.48 | 20.5 |
| 4      | Kozhikode          | 26.51 | 27.01 | 27.91 | 26.7 | 19.61   | 20.62 | 21.42 | 20.6 |
| 5      | Malappuram         | 24.85 | 25.31 | 25.78 | 24.7 | 18.71   | 14.34 | 20.49 | 18.7 |
| 6      | Palakkad           | 26.08 | 26.71 | 27.50 | 27.3 | 20.31   | 20.67 | 21.77 | 20.9 |
| 7      | Thrissur           | 27.19 | 27.49 | 28.39 | 29.1 | 21.87   | 21.14 | 22.70 | 22.4 |
| 8      | Ernakulam          | 27.09 | 27.84 | 28.68 | 28.5 | 22.08   | 22.13 | 23.78 | 23.7 |
| 9      | Idukki             | -     | 25.90 | 26.87 | 25.8 | -       | 21.87 | 22.80 | 23.0 |
| 10     | Kottayam           | 26.31 | 27.43 | 28.13 | 28.2 | 21.88   | 23.07 | 23.68 | 24.4 |
| 11     | Alappuzha          | 27.24 | 27.83 | 28.21 | 28.1 | 22.15   | 23.09 | 23.40 | 22.9 |
| 12     | Pathanamthitta     | -     | -     | 27.42 | 27.6 | -       | -     | 22.90 | 23.2 |
| 13.    | Kollam             | 26.36 | 27.37 | 27.90 | 28.2 | 21.47   | 22.35 | 22.72 | 22.2 |
| 14     | Thiruvananthapuram | 27.81 | 27.84 | 27.75 | 28.0 | 21.85   | 22.59 | 22.76 | 22.6 |

Source: Zachariah and Rajan, 1997; and RCH Survey 1998-99.

Table 4.7 depicts the proportion that are married below the age of twenty between 1971 and 1991 and the proportion who are married below the legal age of marriage during 2002-2004. As of 1991, only 0.28 per cent of males and 3.23 per cent of females are married below twenty years. A district wise comparison

shows that the proportion of females married below the age of twenty is found highest in the district of Malappuram (7.23 per cent) and it is the lowest in the district of Kottayam (0.88 per cent). The table shows that the proportion of females married below the age of twenty years is on the decline. Among the districts of Kerala, the proportion of males married below the age of twenty is found to be highest in Ernakulam (0.41 per cent) followed by Thrissur (0.40 per cent) while this is found to be lowest in Kannur (0.12 per cent) followed by Alappuzha (0.18 per cent). In the study of fertility, female age at marriage is more important than the age at marriage of males. The percentage of females married below the age of twenty is high in Malappuram and hence it certainly affects fertility.

**Table 4.7**

**Proportion Married Below the Age of 20 and Below the Legal of Marriage, District wise**

| Sl. No. | State/District     | Males                       |      |      |                             | Female                      |      |      |                             |
|---------|--------------------|-----------------------------|------|------|-----------------------------|-----------------------------|------|------|-----------------------------|
|         |                    | Married below the age of 20 |      |      | Married below the legal age | Married below the age of 20 |      |      | Married below the legal age |
|         |                    | 1971                        | 1981 | 1991 | 2002-04                     | 1971                        | 1981 | 1991 | 2002-04                     |
|         | KERALA             | 0.13                        | 0.12 | 0.28 | -                           | 4.15                        | 3.79 | 3.23 | -                           |
| 1.      | Kasargod           | NA                          | NA   | 0.29 | 2.0                         | NA                          | NA   | 4.20 | 8.4                         |
| 2.      | Kannur             | 0.08                        | 0.09 | 0.12 | 1.5                         | 6.08                        | 5.24 | 3.27 | 2.0                         |
| 3       | Wayand             | NA                          | 0.24 | 0.19 | 4.7                         | NA                          | 4.52 | 3.50 | 13.9                        |
| 4       | Kozhikode          | 0.22                        | 0.14 | 0.29 | 2.1                         | 7.32                        | 6.51 | 4.84 | 5.4                         |
| 5       | Malappuram         | 0.57                        | 0.36 | 0.27 | 4.3                         | 8.59                        | 8.07 | 7.23 | 37.4                        |
| 6       | Palakkad           | 0.21                        | 0.12 | 0.23 | 5.0                         | 5.95                        | 5.67 | 4.57 | 6.5                         |
| 7       | Thrissur           | 0.04                        | 0.06 | 0.40 | 0.0                         | 2.64                        | 2.59 | 2.40 | 0.6                         |
| 8       | Ernakulam          | 0.07                        | 0.05 | 0.41 | 1.7                         | 2.08                        | 1.56 | 1.21 | 0.5                         |
| 9       | Idukki             | NA                          | 0.12 | 0.23 | 0.7                         | NA                          | 2.57 | 1.69 | 1.6                         |
| 10.     | Kottayam           | 0.07                        | 0.07 | 0.22 | 0.6                         | 2.29                        | 1.25 | 0.88 | 0.0                         |
| 11      | Alappuzha          | 0.03                        | 0.08 | 0.18 | 1.3                         | 2.18                        | 1.48 | 1.21 | 0.0                         |
| 12      | Pathanamthitta     | NA                          | NA   | 0.29 | 0.0                         | NA                          | NA   | 1.14 | 0.0                         |
| 13      | Kollam             | 0.05                        | 0.07 | 0.36 | 3.0                         | 2.53                        | 2.04 | 1.74 | 1.0                         |
| 14      | Thiruvananthapuram | 0.02                        | 0.08 | 0.26 | 0.0                         | 2.94                        | 2.66 | 2.24 | 0.0                         |

Source: Zachariah and Rajan, (1997) and RCH, District Level Household Survey, (2002-2004).

Boys and girls married below the legal age of marriage are also shown in Table 4.7. In the districts of Thiruvananthapuram, Pathanamthitta and Thrissur, the percentage of boys who are married below the legal age of marriage (21 years) is nil, where as it is registered to be the highest in Palakkad (5 per cent) followed by Wayanad (4.7 per cent) and Malappuram (4.3 per cent). The percentage of girls married below the legal age of marriage (18 years) shows that it is nil in the districts of Kottayam, Pathanamthitta, Alappuzha and Thiruvananthapuram where as it is the highest in Malappuram (37.4 per cent) followed by Wayanad (13.9 per cent) and Kasargode (8.4 per cent). Thus, from Tables 4.6 and 4.7, we find that age at marriage for both boys and girls is the lowest in the district of Malappuram and the proportion of females who are married below the age of twenty and below the legal age of marriage is the highest in Malappuram and hence, the reproductive span is greater.

#### **4.1.6 Couple Protection Rate**

Information about the knowledge of family planning and uses of contraceptive methods are essential components for formulating policies on family planning, because it is an important variable affecting fertility. Table 4.8 gives Couple Protection Rate (CPR) by districts of Kerala. The table shows that CPR has increased from 36.8 per cent in 1981 to 64 per cent by 1999 and 72.1 per cent by 2004. Among the districts of Kerala, Thiruvananthapuram has the highest CPR (97.6 per cent) and it is the lowest in Malappuram district (49.6 per cent) in 2004. The demand for family planning is crucial to the success of a society, and our government targeted for about 65 per cent of the couples to be effectively protected by the year 2000. According to the NFHS report<sup>10</sup>, 64 per

cent of the couples have been effectively protected during the year 1998-99 and the unmet need for family planning is estimated as 11.7 per cent in the same year.

**Table 4.8**  
**Couple Protection Rates of Districts, 1981-2004**

| Sl. No. | State/District     | 1981 | 1990 | 1992 | 1999  | 2004  |
|---------|--------------------|------|------|------|-------|-------|
|         | <b>KERALA</b>      | 36.8 | 60.9 | 72.2 | 64.00 | 72.10 |
| 1       | Kasargode          | 30.6 | 45.4 | 56.9 | 64.80 | 59.10 |
| 2       | Kannur             | 29.6 | 58.6 | 72.0 | 54.30 | 61.83 |
| 3       | Wayanad            | 30.1 | 50.8 | 71.9 | 62.85 | 67.54 |
| 4       | Kozhikode          | 39.7 | 63.6 | 79.6 | 68.64 | 63.08 |
| 5       | Malappuram         | 20.8 | 43.3 | 47.8 | 70.76 | 49.60 |
| 6       | Palakkad           | 23.6 | 44.0 | 57.9 | 43.11 | 64.12 |
| 7       | Thrissur           | 43.8 | 67.7 | 79.2 | 55.92 | 71.15 |
| 8       | Ernamkulam         | 45.6 | 68.4 | 69.2 | 66.89 | 70.13 |
| 9       | Idukki             | 31.2 | 51.2 | 78.2 | 56.56 | 66.30 |
| 10      | Kottayam           | 45.8 | 73.5 | 86.5 | 70.56 | 78.10 |
| 11      | Alappuzha          | 41.7 | 68.4 | 75.5 | 72.67 | 66.76 |
| 12      | Pathanamthitta     | 42.7 | 58.6 | 69.8 | 64.38 | 90.32 |
| 13      | Kollam             | 44.3 | 71.7 | 89.8 | 63.07 | 79.07 |
| 14      | Thiruvananthapuram | 52.8 | 75.4 | 86.5 | 81.08 | 97.60 |

Source: Guilmotto & Rajan, 2002 and Economic Review 2006.

Knowledge of methods of family planning influences the use of family planning methods. The knowledge of any modern method and all modern scientific methods of family planning is given in Table 4.9. It is seen that 100 per cent of the residents of Kannur, Kottayam and Alappuzha are aware of at least one modern method of contraception, and in all other districts this percentage is more than 99 per cent except in Malappuram, where it is 98 per cent. Knowledge of all modern methods of family planning shows that it is the lowest in

Malappuram (52.2 per cent) followed by Palakkad (55.1 per cent). It is found to highest in Kannur (88.2 per cent).

**Table 4.9**  
**Knowledge and Current Use of**  
**Methods of Family Planning in Kerala, District Wise**

| State/ District    | Knowledge         |                    | Use        |               |                    |                      |                    |
|--------------------|-------------------|--------------------|------------|---------------|--------------------|----------------------|--------------------|
|                    | Any modern method | All modern methods | Any Method | Modern Method | Traditional Method | Female Sterilization | Male Sterilization |
| Kasargod           | 99.9              | 69.6               | 56.3       | 44.4          | 11.9               | 34.4                 | 1.1                |
| Kannur             | 100               | 88.2               | 64.9       | 51.2          | 13.7               | 43.2                 | 1.6                |
| Wayand             | 99.3              | 74.5               | 71.2       | 55.7          | 15.6               | 42.9                 | 2.4                |
| Kozhikode          | 99.8              | 70.5               | 69.0       | 54.8          | 14.2               | 46.2                 | 0.9                |
| Malappuram         | 98.0              | 52.2               | 52.6       | 37.6          | 15.0               | 31.7                 | 0.2                |
| Palakkad           | 99.4              | 55.1               | 63.2       | 55.4          | 7.8                | 43.5                 | 1.2                |
| Thrissur           | 99.3              | 70.7               | 68.1       | 58.4          | 9.8                | 48.6                 | 1.0                |
| Ernakulam          | 99.3              | 77.8               | 74.2       | 53.9          | 20.3               | 43.0                 | 0.4                |
| Idukki             | 99.0              | 80.1               | 84.5       | 59.6          | 24.9               | 52.6                 | 0.3                |
| Kottayam           | 100               | 76.4               | 76.6       | 56.2          | 20.4               | 43.5                 | 1.4                |
| Alappuzha          | 100               | 55.3               | 74.9       | 60.2          | 15.1               | 47.9                 | 3.8                |
| Pathanamthitta     | 99.6              | 77.4               | 76.7       | 56.5          | 20.3               | 48.7                 | 0.2                |
| Kollam             | 99.7              | 67.5               | 74.1       | 61.9          | 12.3               | 57.4                 | 0.1                |
| Thiruvananthapuram | 99.7              | 72.7               | 70.3       | 62.7          | 7.7                | 57.4                 | 0.2                |

Source: RCH, District Level Household Survey, 2002-2004.

Current use of family planning methods in Kerala, district-wise is also presented in Table 4.9. The current use of any method of family planning is seen to be the highest in Idukki (84.5 per cent) followed by Pathanamthitta (76.7 per cent) and Kottayam (76.6 per cent). The use of traditional methods of birth control is the highest in the district of Idukki (24.9 per cent) and is the lowest in Thiruvananthapuram (7.7 per cent). The use of any method of contraception and any modern method of contraception is the lowest in Malappuram (52.6 per cent) followed by Kasargode (56.3 per cent). The adoption of female sterilisation as

the method of birth control is the highest in Thiruvananthapuram and Kollam (57.4 per cent) followed by Idukki (52.6 per cent) where as this percentage is lowest in Malappuram (31.7 per cent) followed by Kasargod (34.4 per cent). The percentage of males who are sterilised is the highest in Alappuzha (3.8 per cent) followed by Wayanad (2.4 per cent) and it is found to be the lowest in Kollam (0.1 per cent) followed by Thiruvananthapuram, Pathanamthitta and Malappuram (0.2 per cent). In Kerala, Malappuram and Kasargode lags behind with respect to the use of contraceptive methods.

#### **4.1.7 Child Woman Ratio**

Child woman Ratios are helpful in forming information on the date of onset of rapid fall in fertility. CWR (0-4) shows the number of children of age 0-4 years per 1000 women aged 15-49 years and CWR (5-9) gives the number of children of age 5-9 years per 1000 women aged 20-54 years. The former ratio provides information on the level of fertility in the last five years preceding the census, while the latter ratio gives the same information for the five-nine years preceding the census. The trends in CWR's in Kerala suggest that fertility decline began first in the Travancore-cochin region when compared with the Malabar region. This is shown in Table 4.10. Both CWRs are high in Malappuram district showing that it is the district, which is late to enter fertility transition. CWR (0-4) is the lowest in the district of Kottayam, followed by Alappuzha, Pathanamthitta and Thrissur. CWR (5-9) is found to be lowest in Ernakulam followed by Kottayam and Alappuzha. It is observed that the CWR is relatively high in the northern districts of Kerala.

**Table 4.10**  
**Child Woman, Ratios, 1991**

| Sl. No. | State/District     | CWR (0-4) |       |       | CWR (5-9) |       |       |
|---------|--------------------|-----------|-------|-------|-----------|-------|-------|
|         |                    | Total     | Rural | Urban | Total     | Rural | Urban |
|         | <b>KERALA</b>      | 329       | 338   | 305   | 408       | 421   | 372   |
| 1       | Kasargod           | 393       | 401   | 355   | 532       | 546   | 465   |
| 2       | Kannur             | 333       | 352   | 315   | 444       | 482   | 409   |
| 3       | Wayanad            | 366       | 366   | 362   | 501       | 499   | 571   |
| 4       | Kozhikode          | 328       | 333   | 319   | 427       | 442   | 404   |
| 5       | Malappuram         | 492       | 493   | 477   | 612       | 619   | 545   |
| 6       | Palakkad           | 364       | 370   | 333   | 476       | 487   | 420   |
| 7       | Thrissur           | 296       | 300   | 284   | 360       | 365   | 347   |
| 8       | Ernakulam          | 277       | 279   | 275   | 326       | 327   | 326   |
| 9       | Idukki             | 314       | 313   | 317   | 394       | 397   | 339   |
| 10      | Kottayam           | 274       | 271   | 287   | 329       | 330   | 328   |
| 11      | Alappuzha          | 276       | 276   | 276   | 336       | 332   | 345   |
| 12      | Pathanamthitta     | 296       | 296   | 290   | 339       | 339   | 342   |
| 13      | Kollam             | 299       | 298   | 305   | 367       | 366   | 368   |
| 14      | Thiruvananthapuram | 313       | 320   | 299   | 356       | 365   | 341   |

Source: Census of India, Kerala State District Profile 1991.

#### 4.1.8 Dependency Ratio

Dependency ratio (Young) expresses the number of persons of age 0-14 years per, 1,000 persons aged 15-59 years and Dependency ratio (old) represents the number of persons of age above 60 years per 1,000 persons aged 15-59 years. Adding the dependency ratios of the young and the old we obtain total dependency ratio. Table 4.11 shows dependency ratio by the districts of Kerala. Total dependency ratio is the highest in the district of Malappuram (840) followed Kasargod (727) and Palakkad (698) and it is the lowest is in the district of Ernakulam (540) followed by Idukki (555) and Kottayam (558). Rural-urban

break-up of dependency ratios shows that rural dependency ratio is lowest in Idukki (555) where as urban dependency ratio is found lowest in Ernakulam (521).

**Table 4.11**  
**Dependency Ratio, 1991**

| Sl. No. | State/District     | Total |     |       | Rural |     |       | Urban |     |       |
|---------|--------------------|-------|-----|-------|-------|-----|-------|-------|-----|-------|
|         |                    | Young | Old | Total | Young | Old | Total | Young | Old | Total |
|         | <b>KERALA</b>      | 485   | 144 | 630   | 500   | 147 | 647   | 446   | 136 | 582   |
| 1.      | Kasargod           | 606   | 121 | 727   | 617   | 122 | 739   | 553   | 115 | 668   |
| 2       | Kannur             | 524   | 140 | 664   | 558   | 135 | 693   | 493   | 144 | 638   |
| 3       | Wayanad            | 544   | 102 | 647   | 545   | 104 | 649   | 530   | 158 | 588   |
| 4       | Kozhikode          | 499   | 136 | 635   | 516   | 145 | 661   | 472   | 122 | 594   |
| 5       | Malappuram         | 719   | 120 | 840   | 725   | 121 | 846   | 662   | 118 | 779   |
| 6       | Palakkad           | 547   | 151 | 698   | 558   | 154 | 712   | 487   | 141 | 627   |
| 7       | Thrissur           | 443   | 160 | 603   | 453   | 161 | 615   | 417   | 156 | 573   |
| 8       | Ernakulam          | 395   | 145 | 540   | 399   | 160 | 558   | 392   | 130 | 521   |
| 9       | Idukki             | 448   | 107 | 555   | 449   | 106 | 555   | 428   | 122 | 550   |
| 10      | Kottayam           | 392   | 165 | 558   | 391   | 168 | 559   | 398   | 152 | 550   |
| 11      | Alappuzha          | 413   | 176 | 589   | 414   | 183 | 597   | 412   | 161 | 573   |
| 12      | Pathanamthitta     | 427   | 195 | 622   | 427   | 197 | 624   | 431   | 182 | 613   |
| 13      | Kollam             | 448   | 141 | 589   | 448   | 145 | 593   | 451   | 123 | 573   |
| 14      | Thiruvananthapuram | 437   | 133 | 570   | 449   | 138 | 587   | 415   | 124 | 539   |

Source: Census of India, 1991.

#### 4.1.9 Crude Death Rate

Mortality affects and influences both fertility as well as birth rate. It is one of the factors which is responsible for influencing the health and vitality of the mothers and it strains the medical resources of nations. Crude death rate (CDR), which is the most common measure of mortality, is given in Table 4.12. The table shows that in 2001 the death rate is 5.7 per 1000 for Kerala as a whole and the district wise break up shows that it is highest in Thrissur (7.34 per 1000)

followed by Thiruvananthapuram (6.9 per 1000). The lowest death rate of 4.08/1000 is recorded in Malappuram followed by Wayanad (4.09 per 1000) and Idukki (4.22 per 1000). Low rates of suicides and alcoholic consumption noticed in Malappuram can be cited as reasons for low death rate in this district.

**Table 4.12**

**Crude Death Rates in Kerala, District Wise – 1970-2001**

| Sl. No. | State/District     | 1971 | 1981 | 1991 | 2001 |
|---------|--------------------|------|------|------|------|
|         | <b>KERALA</b>      | 3.36 | 4.84 | 5.37 | 5.7  |
| 1       | Kasargod           | -    | -    | 4.9  | 4.43 |
| 2       | Kannur             | 1.63 | 4.91 | 5.07 | 5.23 |
| 3       | Wayanad            | -    | 3.71 | 4.26 | 4.09 |
| 4       | Kozhikode          | 4.47 | 5.98 | 6.05 | 5.58 |
| 5       | Malappuram         | -    | 4.59 | 4.96 | 4.08 |
| 6       | Palakkad           | 2.67 | 6.28 | 6.17 | 5.35 |
| 7       | Thrissur           | 1.89 | 4.85 | 6.02 | 7.34 |
| 8       | Ernakulam          | 3.94 | 4.48 | 5.72 | 6.53 |
| 9       | Idukki             | -    | 3.30 | 4.06 | 4.22 |
| 10      | Kottayam           | 3.52 | 5.07 | 6.08 | 6.69 |
| 11      | Alappuzha          | 3.87 | 5.03 | 5.66 | 5.41 |
| 12      | Pathanamthitta     | -    | -    | 5.62 | 6.99 |
| 13      | Kollam             | 3.55 | 3.97 | 4.77 | 5.13 |
| 14.     | Thiruvananthapuram | 3.9  | 4.67 | 5.55 | 6.9  |

Source: Vital Statistics Bulletins, Various years.

#### **4.1.10 Infant and Child Mortality**

Infant and child mortality rates reflect a country's socio-economic development and quality of life and hence are often used for monitoring and evaluating population and health programmes and policies. Among the Indian states, IMR is the lowest in Kerala. Rural mortality rates are considerably higher than urban mortality rates. NFHS –2<sup>11</sup> shows that IMR for Kerala decreased from 23.8 in 1991 to 16 per 1000 live births in 1999. IMR in rural area is

slightly higher than that of urban area in 1991 and 1995 where as in 1999, IMR in urban area (16) recorded a higher value than that of rural area (14). UNICEF (2001)<sup>12</sup> has set certain targets with respect to infant and child mortality. The targets set are: reduction of childhood mortality from the existing level of 29 per cent to 15 per cent, reduction of perinatal mortality rate from 20 to 10, reduction of neonatal mortality rate from 12.6 to 9, reduction of infant mortality rate from 17 to 12, reduction of child mortality rate (0-4 years) from 4.6 to 3 and reduction of diarrhea deaths by zero.

NFHS-1<sup>13</sup> observed that infant mortality rates have declined considerably in Kerala in recent years, particularly in urban areas. IMR for total population declined from 40 per 1000 live births during 1978-82 to 24 per 1000 live births in 1988-92. As per NFHS-1 report, two in every 100 children die before reaching the age of one year and three in every 100 children die before reaching age five.

There is a serious data gap with respect to the availability of reliable data on IMR, by districts of Kerala. Here we are making use of two data sources of IMR, which is shown in Tables 4.13 and 4.14. Table 4.13 gives district-wise estimates of IMR, given by Mohanachandran. The Table shows wider inter-district disparities in IMR, among the districts of Kerala. In Kerala, IMR varies from 16 in Thiruvananthapuram to 34 in Kozhikode and the state average is 26/1000 live births. Malappuram district registered an IMR of 26/1000, which is the same as the state average. According to these estimates, only Thiruvananthapuram registered an IMR, which is less than 20/1000. However, in all the districts, IMR shows a declining tendency. The rate of decline in IMR is high in the districts of Wayanad and Idukki during the period 1981 to 2001.

**Table 4.13**  
**Infant Mortality Rates, District-wise – 1981-2001**

| Sl. No. | State/District     | 1981 | 1991 | 2001 |
|---------|--------------------|------|------|------|
|         | <b>KERALA</b>      | 54   | 37   | 26   |
| 1       | Kasargod           | 45   | 33   | 24   |
| 2       | Kannur             | 45   | 36   | 29   |
| 3       | Wayanad            | 108  | 36   | 29   |
| 4       | Kozhikode          | 54   | 43   | 34   |
| 5       | Malappuram         | 49   | 36   | 26   |
| 6       | Palakkad           | 64   | 36   | 21   |
| 7       | Thrissur           | 52   | 38   | 28   |
| 8       | Ernakulam          | 50   | 36   | 27   |
| 9       | Idukki             | 103  | 43   | 30   |
| 10      | Kottayam           | 59   | 35   | 22   |
| 11      | Alappuzha          | 38   | 35   | 27   |
| 12      | Pathanamthitta     | 38   | 29   | 20   |
| 13      | Kollam             | 46   | 39   | 27   |
| 14      | Thiruvananthapuram | 52   | 25   | 16   |

Source: P. Mohanachandran in unpublished P.hd. Thesis of Bindu.P. Verghese, Sept. 2004.

Indirect estimates of infant mortality rate and child mortality rate based on the 1991 Census data by Rajan and Aliyar (2003)<sup>14</sup> is shown in Table 4.14. The table show that IMR for Kerala was 43 per 1000 live births; 45/1000 for males and 41/1000 for females. The highest male IMR of 72 was reported for Wayanad district, followed by Idukki (65). The highest female IMR was estimated for Idukki (60) followed by Thiruvananthapuram (40). Among the districts of Kerala, IMR is the highest in Idukki (57) followed by Wayanad (54). Male child mortality rate (under five years mortality) is the highest in the district of Wayanad (94) followed by Idukki (74) and female child' mortality is highest in Idukki (74) followed by Malappuram (58). In general, CMR is found to be

highest in the district of Wayanad (89) followed by Idukki (74). Estimates of IMR show that it is highest in Idukki (57) followed by Wayand (54). Thus, Idukki and Wayanad are the districts where IMR and CMR are still very high.

**Table 4.14**  
**Estimated Infant and Child Mortality of Districts, 1991**

| Sl. No. | Districts          | IMR   |      |        | CMR   |      |        |
|---------|--------------------|-------|------|--------|-------|------|--------|
|         |                    | Total | Male | Female | Total | Male | Female |
| 1       | Kasargod           | 34    | 32   | 36     | 49    | 50   | 48     |
| 2       | Kannur             | 34    | 40   | 30     | 50    | 50   | 51     |
| 3       | Wayanad            | 54    | 72   | 36     | 89    | 94   | 59     |
| 4       | Kozhikode          | 37    | 39   | 35     | 61    | 67   | 54     |
| 5       | Malappuram         | 35    | 33   | 37     | 58    | 57   | 58     |
| 6       | Palakkad           | 31    | 34   | 29     | 55    | 42   | 57     |
| 7       | Thrissur           | 29    | 30   | 27     | 47    | 48   | 46     |
| 8       | Ernakulam          | 32    | 34   | 31     | 48    | 49   | 47     |
| 9       | Idukki             | 57    | 65   | 60     | 74    | 74   | 74     |
| 10      | Kottayam           | 28    | 34   | 27     | 52    | 58   | 48     |
| 11      | Alappuzha          | 25    | 27   | 22     | 45    | 42   | 46     |
| 12      | Pathanamthitta     | 27    | 26   | 30     | 39    | 29   | 52     |
| 13      | Kollam             | 25    | 27   | 22     | 50    | 51   | 49     |
| 14      | Thiruvananthapuram | 38    | 36   | 40     | 51    | 54   | 50     |

Source: Rajan and Aliyar, 1997.

#### 4.1.11 Maternal Mortality

Maternal deaths are rare events and it is very difficult to get information on these deaths, especially district wise. Maternal death rates are shown in Table 4.15. The Table shows that maternal deaths have declined considerably in all the districts of Kerala. At the state level, it declined from 0.75 per 1000 in 1970 to 0.01 per 1000 live and stillbirths in 2001. In 2001, only five districts, viz., Thiruvananthapuram, Alappuzha, Thrissur, Malappuram and Kozhikode had maternal deaths.

**Table 4.15****Maternal Mortality Rates – District Wise, 1970 – 2001**

| Sl. No. | District           | 1970 | 1981 | 1991 | 2001 |
|---------|--------------------|------|------|------|------|
| 1       | Thiruvananthapuram | 0.50 | 0.22 | 0.13 | 0.02 |
| 2       | Kollam             | 0.83 | 0.18 | 0.05 | 0.00 |
| 3       | Pathanamthitta     | -    | -    | -    | 0.00 |
| 4       | Alappuzha          | 0.74 | 0.28 | 0.25 | 0.03 |
| 5       | Kottayam           | 0.58 | 0.26 | 0.09 | 0.00 |
| 6       | Idukki             | -    | 0.12 | -    | 0.00 |
| 7       | Ernakulam          | 0.39 | 0.16 | 0.18 | 0.00 |
| 8       | Thrissur           | 0.33 | 0.14 | 0.09 | 0.02 |
| 9       | Palakkad           | 1.41 | 0.19 | 0.18 | 0.00 |
| 10      | Malappuram         | -    | 0.18 | -    | 0.02 |
| 11      | Kozhikode          | 1.24 | 0.22 | 0.13 | 0.04 |
| 12      | Wayanad            | -    | 0.17 | -    | 0.00 |
| 13      | Kannur             | 0.84 | 0.15 | -    | 0.00 |
| 14      | Kasargod           | -    | -    | 0.09 | 0.00 |
|         | STATE              | 0.75 | 0.19 | 0.09 | 0.01 |

Source: Vital Statistics Bulletins, Various years.

## 4.2 STRUCTURAL FEATURES

Structural features of population such as literacy and educational attainment, sex ratio, density of population, rural-urban population, and work participation rate influence demographic transition. The availability and accessibility of education and health infrastructure like the number of schools; colleges, hospitals etc do influence fertility transition. Besides this, human and gender development also influence fertility changes. In this section, an attempt is made to analyse the trends in the structural features of population among the districts of Kerala.

### 4.2.1 Literacy

Literacy rates by districts of Kerala from 1901 – 2001 is given in Table 4.16. The literacy rate of Kerala was just 12.85 in 1901 and this increased to 90.92 per cent in 2001. Even in 1901, Kottayam and Alappuzha had a literacy rate of 19.03 per cent and 17.36 per cent respectively and this shows that these districts followed by Ernakulam, Thrissur and Thiruvananthapuram had an initial favourable position with respect to literacy. This initial start was sustained in the subsequent years also. In 1971, only two districts of Kerala, viz., Palakkad and Malappuram had a literacy rates which was below 50 per cent and this backwardness is visible even in the 2001 Census.

**Table 4.16**

**District wise Percentage of Literates in Kerala – 1901 to 2001**

| Sl. No. | State/District     | 1901  | 1911  | 1921  | 1931  | 1951  | 1961  | 1971  | 1981  | 1991  | 2001  |
|---------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|         | KERALA             | 12.85 | 15.45 | 21.95 | 25.58 | 47.37 | 55.08 | 60.42 | 70.42 | 89.81 | 90.92 |
| 1       | Kasargod           | -     | -     | -     | -     | -     | -     | -     | -     | 82.51 | 85.17 |
| 2       | Kannur             | 11.12 | 14.09 | 15.58 | 19.47 | 40.15 | -     | 54.84 | 65.74 | 91.48 | 92.80 |
| 3       | Wayanad            | -     | -     | -     | -     | -     | -     | -     | 58.33 | 82.73 | 85.52 |
| 4       | Kozhikode          | 11.25 | 12.53 | 14.20 | 16.09 | 33.65 | -     | 57.23 | 70.12 | 91.10 | 92.45 |
| 5       | Malappuram         | -     | -     | -     | -     | -     | -     | 47.90 | 60.5  | 87.94 | 88.61 |
| 6       | Palakkad           | 9.54  | 12.03 | 13.74 | 15.19 | 30.18 | 39.89 | 46.69 | 58.0  | 81.27 | 84.31 |
| 7       | Thrissur           | 13.76 | 17.74 | 21.32 | 32.85 | 48.24 | 57.15 | 61.61 | 75.59 | 90.18 | 92.56 |
| 8       | Ernakulam          | 14.21 | 15.56 | 24.06 | 29.98 | 54.12 | 59.53 | 65.37 | 76.82 | 92.30 | 93.42 |
| 9       | Idukki             | -     | -     | -     | -     | -     | -     | 56.42 | 67.44 | 86.97 | 88.58 |
| 10      | Kottayam           | 19.03 | 21.80 | 33.20 | 36.29 | 62.66 | 66.64 | 72.88 | 81.66 | 95.72 | 95.90 |
| 11      | Alappuzha          | 17.36 | 19.99 | 33.04 | 35.73 | 61.94 | 66.07 | 70.44 | 78.52 | 93.87 | 93.66 |
| 12      | Pathanamthitta     | -     | -     | -     | -     | -     | -     | -     | -     | 94.86 | 95.09 |
| 13      | Kollam             | 10.62 | 13.51 | 25.34 | 26.08 | 53.8  | 59.74 | 64.97 | 74.11 | 90.47 | 91.49 |
| 14      | Thiruvananthapuram | 13.21 | 16.70 | 27.03 | 26.05 | 49.90 | 53.43 | 62.54 | 70.5  | 89.22 | 89.36 |

Source: Compiled from Census of India, Various years.

Sex-wise Literacy rates of the districts of Kerala are shown in Table 4.17. In terms of the literary rate, Kottayam district ranks first, both in male (97.41) and female (94.45) literacy, while literacy rate is found to be the lowest in Palakkad district for both sexes (M-89.73; F – 79.31). Malappuram district is having a literacy rate of (88.61 per cent) which is below the state average of 90.92 per cent. In Malappuram, the female literacy is 91.46 per cent and the female literacy is 85.96 per cent. Besides Malappuram and Palakkad; Kasaragod, Wayanad, Idukki and Thiruvananthapuram are also having a literacy rate lower than the state average.

**Table 4.17**

**Sex -wise Literacy Rates by Districts of Kerala, 1981-2001**

| SI No. | State/District     | 1981    |       |         | 1991    |       |        | 2001    |       |        |
|--------|--------------------|---------|-------|---------|---------|-------|--------|---------|-------|--------|
|        |                    | Persons | Males | Females | Persons | Males | Female | Persons | Males | Female |
|        | <b>KERALA</b>      | 70.42   | 75.26 | 65.73   | 89.81   | 93.62 | 86.17  | 90.92   | 94.20 | 87.86  |
| 1      | Kasargod           | -       | 72.20 | -       | 82.51   | 88.97 | 76.29  | 85.17   | 90.84 | 79.80  |
| 2      | Kannur             | 65.74   | 64.81 | 59.48   | 91.48   | 95.94 | 87.65  | 92.80   | 96.38 | 89.57  |
| 3      | Wayanad            | 58.33   | 76.56 | 51.51   | 82.73   | 87.59 | 77.69  | 85.52   | 90.28 | 80.80  |
| 4      | Kozhikode          | 70.12   | 65.93 | 63.81   | 91.10   | 95.58 | 86.79  | 92.45   | 96.30 | 88.86  |
| 5      | Malappuram         | 60.50   | 64.81 | 55.34   | 87.94   | 92.08 | 84.09  | 88.61   | 91.46 | 85.96  |
| 6      | Palakkad           | 58.00   | 77.31 | 51.54   | 81.27   | 87.24 | 75.72  | 84.31   | 89.73 | 79.31  |
| 7      | Thrissur           | 73.59   | 80.74 | 70.21   | 90.18   | 93.77 | 86.94  | 92.56   | 95.47 | 89.94  |
| 8      | Ernakulam          | 76.82   | 72.15 | 72.88   | 92.30   | 95.40 | 89.22  | 93.42   | 95.95 | 90.96  |
| 9      | Idukki             | 63.44   | 83.96 | 62.55   | 86.97   | 90.89 | 82.97  | 88.58   | 92.11 | 85.04  |
| 10     | Kottayam           | 81.66   | 82.12 | 79.35   | 95.72   | 97.46 | 94.00  | 95.90   | 97.41 | 94.45  |
| 11     | Alappuzha          | 78.52   | -     | 75.10   | 93.87   | 96.79 | 91.12  | 93.66   | 96.42 | 91.14  |
| 12     | Pathanamthitta     | -       | -     | -       | 94.86   | 96.56 | 93.29  | 95.09   | 96.62 | 93.71  |
| 13     | Kollam             | 74.11   | 78.10 | 70.21   | 90.47   | 94.09 | 87.00  | 01.49   | 94.63 | 88.60  |
| 14     | Thiruvananthapuram | 70.5    | 75.28 | 65.85   | 89.22   | 92.84 | 85.79  | 89.36   | 92.68 | 86.26  |

Source: Compiled from Census Reports, various years.

#### 4.2.2 Accessibility of Educational Institutions

Educational attainment of any society depends on the access and availability of educational institutions. Table 4.18 gives the number of schools per lakh of school age population. Kerala is having 150 schools per lakh of school going population. Number of schools per lakh of school age population is highest in Pathanamthitta (281) followed by Kottayam (236). On the other hand, the number of schools per lakh of school going population is the lowest in Malappuram district (106) followed by Palakkad (120). Thus, the availability of educational institutions is highly inadequate in Malappuram district, in relation to the population of the district.

**Table 4.18**

**Number of Schools per lakh of School Age Population, 1981-2001**

| Sl. No. | State/District     | 1981 | 1991 | 2001 |
|---------|--------------------|------|------|------|
|         | <b>KERALA</b>      | 132  | 135  | 150  |
| 1       | Kasargod           | 110  | 134  | 140  |
| 2       | Kannur             | 121  | 169  | 180  |
| 3       | Wayanad            | 124  | 114  | 122  |
| 4       | Kozhikode          | 147  | 145  | 156  |
| 5       | Malappuram         | 91   | 115  | 106  |
| 6       | Palakkad           | 123  | 116  | 120  |
| 7       | Thrissur           | 111  | 124  | 151  |
| 8       | Ernakulam          | 111  | 127  | 158  |
| 9       | Idukki             | 129  | 142  | 168  |
| 10      | Kottayam           | 155  | 184  | 236  |
| 11      | Alappuzha          | 93   | 132  | 161  |
| 12      | Pathanamthitta     | 178  | 224  | 281  |
| 13      | Kollam             | 89   | 125  | 143  |
| 14      | Thiruvananthapuram | 106  | 113  | 129  |

Source: Economic Review, Various years.

Higher educational institutions have an important role in determining the educational attainment of a society. District wise number of Arts and Science colleges by Management in Kerala is given in Table 4.19. It is seen that in Kerala, the number of Arts and Science colleges in the private sector is always higher than that in the government sector. The number of arts and science colleges in both private and government sectors taken together is found to be the highest in the district of Ernakulam (25) followed by Kottayam (21), Thiruvananthapuram (20) and Thrissur (20) whereas it is the lowest in Kasargod (5) followed by Wayanad (6). Malappuram district is having 12 Arts and Science colleges but compared with its population, this is highly inadequate. Thus accessibility to higher educational institutions is relatively low in the district of Malappuram compared with other districts of Kerala.

**Table 4.19**  
**District wise Number of**  
**Arts and Science Colleges by Management, 1970-2000**

| State/Districts    | 1970  |      |       | 1980  |      |       | 1990  |      |       | 2000  |      |       | 2006  |      |       |
|--------------------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|
|                    | Govt. | Pvt. | Total | Govt. | Pvt. | Total | Govt. | Pvt. | Total | Govt. | Pvt. | Total | Govt. | Pvt. | Total |
| <b>KERALA</b>      | 13    | 107  | 120   | 29    | 104  | 133   | 40    | 132  | 172   | 38    | 148  | 186   | 39    | 150  | 189   |
| Kasargod           | -     | -    | -     | -     | -    | -     | 3     | 1    | 4     | 3     | 2    | 5     | 3     | 2    | 5     |
| Kannur             | 2     | 6    | 8     | 5     | 6    | 11    | 2     | 7    | 9     | 2     | 9    | 11    | 2     | 9    | 11    |
| Wayanad            | -     | -    | -     | -     | -    | -     | 2     | 2    | 4     | 2     | 4    | 6     | 2     | 4    | 6     |
| Kozhikode          | 2     | 8    | 10    | 6     | 7    | 13    | 7     | 7    | 14    | 6     | 8    | 14    | 6     | 8    | 14    |
| Malappuram         | -     | 4    | 4     | 3     | 4    | 7     | 3     | 7    | 10    | 3     | 9    | 12    | 3     | 8    | 11    |
| Palakkad           | 3     | 6    | 9     | 3     | 5    | 8     | 3     | 7    | 10    | 3     | 7    | 10    | 4     | 9    | 13    |
| Thrissur           | -     | 13   | 13    | 3     | 12   | 15    | 4     | 16   | 20    | 3     | 17   | 20    | 3     | 17   | 20    |
| Ernakulam          | 2     | 15   | 17    | 2     | 15   | 17    | 5     | 19   | 24    | 4     | 21   | 25    | 4     | 21   | 25    |
| Idukki             | -     | -    | -     | 1     | 1    | 2     | 1     | 4    | 5     | 2     | 6    | 8     | 2     | 6    | 8     |
| Kottayam           | -     | 19   | 19    | 1     | 16   | 17    | 1     | 20   | 21    | 1     | 20   | 21    | 1     | 21   | 22    |
| Alappuzha          | -     | 12   | 12    | -     | 14   | 14    | -     | 11   | 11    | -     | 12   | 12    | 0     | 12   | 12    |
| Pathanamthitta     | -     | -    | -     | -     | -    | -     | -     | 8    | 8     | -     | 9    | 9     | 0     | 9    | 9     |
| Kollam             | -     | 13   | 13    | -     | 13   | 13    | 1     | 12   | 13    | 1     | 12   | 13    | 1     | 12   | 13    |
| Thiruvananthapuram | 4     | 11   | 15    | 5     | 11   | 16    | 8     | 11   | 19    | 8     | 12   | 20    | 8     | 12   | 20    |

Source: Economic Review, Various years.

### 4.2.3 Sex Ratio

Contrary to the all India pattern, the sex ratio in Kerala indicates more female population compared to male population. The sex ratio, which was 1028 in 1951, had increased to 1058 by 2001 (Table 4.20). The districts, which recorded the highest sex ratio, are Pathanamthitta (1094) followed by Thrissur (1092) and Kannur (1090). In 2001, only in Idukki district, males outnumbered females and this district is having the lowest sex ratio (993). Malappuram district is having a sex ratio of 1063, which is little higher than the state average.

**Table 4.20**

**Sex ratio by Districts of Kerala – 1951-2001**

| Sl. No. | State/District     | 1951 | 1961 | 1971 | 1981 | 1991 | 2001 |
|---------|--------------------|------|------|------|------|------|------|
|         | <b>KERALA</b>      | 1028 | 1022 | 1016 | 1032 | 1036 | 1058 |
| 1       | Kasargod           | 1046 | 1026 | 998  | 1020 | 1026 | 1047 |
| 2       | Kannur             | 1074 | 1048 | 1033 | 1040 | 1049 | 1090 |
| 3       | Wayanad            | 838  | 903  | 922  | 949  | 966  | 1000 |
| 4       | Kozhikode          | 1019 | 1007 | 1004 | 1020 | 1027 | 1058 |
| 5       | Malappuram         | 1055 | 1057 | 1041 | 1052 | 1053 | 1063 |
| 6       | Palakkad           | 1085 | 1077 | 1056 | 1056 | 1061 | 1068 |
| 7       | Thrissur           | 1105 | 1093 | 1081 | 1100 | 1085 | 1092 |
| 8       | Ernakulam          | 1008 | 999  | 988  | 997  | 1000 | 1017 |
| 9       | Idukki             | 909  | 914  | 937  | 963  | 975  | 993  |
| 10      | Kottayam           | 987  | 988  | 991  | 1001 | 1003 | 1025 |
| 11      | Alappuzha          | 1022 | 1026 | 1025 | 1043 | 1051 | 1079 |
| 12      | Pathanamthitta     | 996  | 1011 | 1019 | 1056 | 1062 | 1094 |
| 13      | Kollam             | 997  | 996  | 1000 | 1022 | 1035 | 1070 |
| 14      | Thiruvananthapuram | 1010 | 1005 | 1008 | 1030 | 1036 | 1058 |

Source: Census Reports, Various years.

#### 4.2.4 Density of Population

Kerala is one of the most densely populated parts of the world having a density of 819 persons per square km. Kerala is second only to West Bengal in this regard. A trend in the density of population in Kerala shows a steady increase in all the districts between 1951 and 2001. A district-wise review (Table 4.21) shows wide variations in density in many districts of Kerala. As per the latest census reports density is highest in Alappuzha (1496) followed by Thiruvananthapuram (1476) and Kozhikode 1228). On the other hand density is lowest in the district of Idukki (252) followed by Wayanad (315). Malappuram district having a density of 1022, this is higher than the state average of 819 persons per square kilometer.

**Table 4.21**

**Density of Population in Kerala, District wise (1951-2000)**

| Sl. No. | State/District     | 1951 | 1961 | 1971 | 1981 | 1991 | 2001 |
|---------|--------------------|------|------|------|------|------|------|
|         | <b>KERALA</b>      | 349  | 435  | 549  | 655  | 747  | 819  |
| 1       | Kasargod           | 206  | 257  | 343  | 438  | 538  | 604  |
| 2       | Kannur             | 305  | 397  | 524  | 651  | 759  | 813  |
| 3       | Wayanad            | 79   | 129  | 195  | 260  | 315  | 369  |
| 4       | Kozhikode          | 476  | 599  | 787  | 958  | 1118 | 1228 |
| 5       | Malappuram         | 324  | 391  | 523  | 677  | 872  | 1022 |
| 6       | Palakkad           | 271  | 306  | 384  | 456  | 532  | 584  |
| 7       | Thrissur           | 463  | 557  | 702  | 803  | 903  | 981  |
| 8       | Ernakulam          | 579  | 706  | 899  | 1053 | 963  | 0150 |
| 9       | Idukki             | 66   | 115  | 151  | 193  | 236  | 252  |
| 10      | Kottayam           | 514  | 596  | 698  | 771  | 876  | 722  |
| 11      | Alappuzha          | 825  | 993  | 1182 | 1319 | 1422 | 1496 |
| 12      | Pathanamthitta     | 272  | 336  | 389  | 426  | 553  | 574  |
| 13      | Kollam             | 446  | 587  | 738  | 873  | 967  | 1038 |
| 14      | Thiruvananthapuram | 606  | 796  | 1003 | 1184 | 1344 | 1476 |

Source: Census Reports, Various years.

#### **4.2.5 Work Participation Rate**

The work participation rate gives us an idea about the participation of population in gainful employment activities. Work participation rates in Kerala shows that it slightly improved from 30.53 in 1981 to 32.3 in 2001 (Table 4.22). Sex-wise break-up of work participation rates shows an improvement in the case of males while it shows a declining trend in the case of females. With regard to male and female work participation rates, Idukki ranks first (M-58.4; F – 28.1) where as Malappuram lags behind all the districts (M-42.8; F-6.6) and is followed by Kozhikode. There are several factors, which directly or indirectly influence work participation. Some of them are low rates of female participation in economic activities, delayed entry into labour force; consequent on the spread of schooling and longer periods spent on education, changing job preference and long waiting periods for jobs, decline in agricultural and traditional activities, and the lack of generation of sufficient employment opportunities in non-agricultural sectors. With respect to work participation rate also, Malappuram is having the lowest value.

**Table 4.22**

**Sex-wise work Participation Rates-District-wise 1981-2001**

| Sl. No. | State/District     | 1981  |         |       | 1991  |         |       | 2001  |         |       |
|---------|--------------------|-------|---------|-------|-------|---------|-------|-------|---------|-------|
|         |                    | Males | Females | Total | Males | Females | Total | Males | Females | Total |
|         | <b>KERALA</b>      | 44.89 | 16.61   | 30.53 | 47.81 | 16.90   | 32.05 | 50.4  | 15.3    | 32.3  |
| 1       | Kasargod           | 45.64 | 21.36   | 33.38 | 45.93 | 20.91   | 33.25 | 49.3  | 20.8    | 34.7  |
| 2       | Kannur             | 43.14 | 14.16   | 28.27 | 44.25 | 13.81   | 28.62 | 50.0  | 15.2    | 31.8  |
| 3       | Wayanad            | 51.08 | 24.30   | 38.04 | 53.09 | 23.66   | 38.62 | 55.7  | 22.8    | 39.30 |
| 4       | Kozhikode          | 43.15 | 11.38   | 27.10 | 44.30 | 9.18    | 26.47 | 48.8  | 8.1     | 27.9  |
| 5       | Malappuram         | 40.37 | 10.73   | 25.17 | 41.10 | 9.52    | 24.29 | 42.8  | 6.6     | 24.1  |
| 6       | Palakkad           | 47.09 | 24.26   | 35.36 | 49.69 | 24.93   | 36.94 | 52.2  | 21.1    | 36.2  |
| 7       | Thrissur           | 47.81 | 18.55   | 29.63 | 48.41 | 20.01   | 33.61 | 50.8  | 15.1    | 32.2  |
| 8       | Ernakulam          | 46.95 | 16.37   | 31.68 | 51.28 | 17.76   | 34.51 | 55.4  | 17.1    | 36.1  |
| 9       | Idukki             | 51.51 | 23.51   | 37.38 | 56.56 | 26.23   | 41.57 | 58.4  | 28.1    | 43.3  |
| 10      | Kottayam           | 46.89 | 12.75   | 29.82 | 51.29 | 14.18   | 32.68 | 51.4  | 13.9    | 32.9  |
| 11      | Alappuzha          | 43.84 | 22.45   | 32.92 | 47.17 | 23.25   | 34.85 | 49.7  | 20.2    | 34.4  |
| 12      | Pathanamthitta     | 46.28 | 12.92   | 29.15 | 49.07 | 13.13   | 30.05 | 47.6  | 13.2    | 29.7  |
| 13      | Kollam             | 43.89 | 17.15   | 30.87 | 47.27 | 17.14   | 31.89 | 48.5  | 16.7    | 32.1  |
| 14      | Thiruvananthapuram | 46.39 | 14.49   | 30.21 | 49.93 | 16.00   | 32.63 | 51.5  | 14.4    | 32.04 |

Source: Census of India, 1991 and 2001.

#### 4.2.6 Urban Population

Kerala's urban population had been growing at a low rate. This is shown in Table 4.23. A district-wise review of the urban population shows that Ernakulam district has the highest percentage of urban population followed by Kozhikode and Thiruvananthapuram. The lowest urban population is recorded in the district of Wayanad (3.76 per cent) followed by Idukki (5.07 per cent) and Malappuram (9.81 per cent). Thus, Malappuram is having one of the lowest urban population among the districts of Kerala.

**Table 4.23**  
**Urban Population as a Percentage**  
**to the Total Population District wise, 1951-2001**

| Sl. No. | State/District     | 1951  | 1961  | 1971  | 1981  | 1991  | 2001  |
|---------|--------------------|-------|-------|-------|-------|-------|-------|
|         | <b>KERALA</b>      | 13.48 | 15.11 | 16.24 | 18.74 | 26.39 | 25.97 |
| 1       | Kasargod           | 10.22 | 17.36 | 16.38 | 14.94 | 16.45 | 19.42 |
| 2       | Kannur             | 9.12  | 17.93 | 13.59 | 23.39 | 50.87 | 50.46 |
| 3       | Wayanad            | -     | -     | -     | -     | 3.41  | 3.76  |
| 4       | Kozhikode          | 20.44 | 27.04 | 30.83 | 27.18 | 38.34 | 38.25 |
| 5       | Malappuram         | 5.44  | 5.48  | 6.73  | 7.40  | 9.12  | 9.81  |
| 6       | Palakkad           | 12.09 | 10.87 | 12.70 | 10.11 | 15.72 | 13.62 |
| 7       | Thrissur           | 11.70 | 11.00 | 11.74 | 21.10 | 26.31 | 28.21 |
| 8       | Ernakulam          | 18.79 | 23.27 | 29.40 | 39.56 | 48.74 | 47.65 |
| 9       | Idukki             | 3.22  | -     | 3.30  | 4.60  | 4.72  | 5.07  |
| 10      | Kottayam           | 13.54 | 12.59 | 13.56 | 9.37  | 17.55 | 15.35 |
| 11      | Alappuzha          | 16.61 | 19.67 | 19.21 | 18.46 | 30.46 | 29.36 |
| 12      | Pathanamthitta     | 7.42  | 3.85  | 3.75  | 5.53  | 13.03 | 10.03 |
| 13      | Kollam             | 10.66 | 9.87  | 10.32 | 15.50 | 18.53 | 18.03 |
| 14      | Thiruvananthapuram | 23.13 | 15.71 | 26.00 | 25.26 | 33.88 | 33.78 |

Source: Census Reports of India, Various years.

#### **4.2.7 Accessibility to Health Institutions and Hospital Beds**

Accessibility and availability of health institutions certainly influence demographic transition. District wise number of medical institutions and hospital beds in Kerala is shown in Table 4.24. The number of health institutions has increased from 534 to 1281 and the corresponding number of hospital beds increased from 21169 to 41462 during 1970 to 2000. Number of hospital beds per lakh of population is the lowest in Malappuram (81). Though the number of health institutions is relatively high in Malappuram, the number of hospital beds is only 2940 in 2006, which shows that it is very low in relation to the population of the district when compared with other districts of Kerala. The district having the highest number of hospital beds is Thiruvananthapuram (9424) followed by Kozhikode (5555) and Ernakulam (5054). Thus, in relation to the population; there is inadequate number of hospital beds in Malappuram in 2006. The number of medical institutions is found to be the lowest in Wayanad (87) followed by Kasargod (125) and the number of hospital beds is also the lowest in Wayanad (1108) followed by Kasargod (1269).

**Table 4.24**  
**Number of Medical Institutions**  
**and Hospital Beds in Kerala, District Wise 1970-2006**

| State/District     | Medical Institutions |      |      |      |      | Hospital Beds |       |       |       |       | Beds/ Lakh of Population |
|--------------------|----------------------|------|------|------|------|---------------|-------|-------|-------|-------|--------------------------|
|                    | 1970                 | 1980 | 1990 | 2000 | 2006 | 1970          | 1980  | 1990  | 2000  | 2006  | 2006                     |
| <b>KERALA</b>      | 534                  | 918  | 1199 | 1281 | 2711 | 21169         | 30220 | 38223 | 41462 | 50515 | 159                      |
| Kasargod           | -                    | -    | 59   | 60   | 125  | -             | -     | 648   | 739   | 1269  | 106                      |
| Kannur             | 56                   | 129  | 94   | 106  | 214  | 1415          | 2565  | 2435  | 2763  | 3109  | 129                      |
| Wayanad            | -                    | -    | 40   | 40   | 87   | -             | -     | 590   | 811   | 1108  | 140                      |
| Kozhikode          | 41                   | 77   | 85   | 96   | 204  | 2893          | 3631  | 4239  | 5745  | 5555  | 193                      |
| Malappuram         | 38                   | 70   | 113  | 123  | 247  | 607           | 1015  | 1831  | 2183  | 2940  | 81                       |
| Palakkad           | 52                   | 77   | 103  | 112  | 233  | 1029          | 1365  | 2081  | 2208  | 2659  | 101                      |
| Thrissur           | 56                   | 86   | 112  | 122  | 259  | 2881          | 3512  | 3941  | 4264  | 4997  | 168                      |
| Ernakulam          | 73                   | 94   | 113  | 117  | 244  | 2449          | 3263  | 3915  | 4160  | 5054  | 163                      |
| Idukki             | -                    | 43   | 58   | 63   | 132  | -             | 339   | 609   | 840   | 1445  | 128                      |
| Kottayam           | 53                   | 63   | 80   | 85   | 182  | 1775          | 2809  | 3756  | 3379  | 4135  | 212                      |
| Alappuzha          | 52                   | 87   | 86   | 90   | 198  | 2541          | 4011  | 4375  | 4033  | 4431  | 211                      |
| Pathanamthitta     | -                    | -    | 60   | 64   | 135  | -             | -     | 1179  | 1072  | 1930  | 157                      |
| Kollam             | 53                   | 93   | 85   | 88   | 191  | 1297          | 2132  | 2068  | 2078  | 2454  | 95                       |
| Thiruvananthapuram | 60                   | 99   | 111  | 115  | 254  | 4282          | 5578  | 6556  | 7187  | 9429  | 292                      |

Source: Economic Review, Various years.

Institutionalization of deliveries helps to reduce the risk at the time of birth and reduces maternal and infant deaths. Hence it is helpful in bringing fertility transition. District wise percentage of institutional deliveries is shown in Table 4.25. It is seen that Kozhikode, Thrissur and Ernakulam have achieved cent per cent institutionalization of deliveries. Thiruvananthapuram, Kollam and Kannur are also nearing cent per cent institutionalization with respect to deliveries. Institutionalization of deliveries is found to be the lowest in Wayanad (90.7%) followed by Idukki (91.7%) and Malappuram (92.4%).

**Table 4.25**

**Percentage of Institutional Deliveries – District Wise**

| <b>District</b>    | <b>Percent of Institutional Deliveries</b> |
|--------------------|--|
| Kasargod           | 97.1                                       |
| Kannur             | 99.7                                       |
| Wayanad            | 90.7                                       |
| Kozhikode          | 100  |
| Malappuram         | 92.4                                       |
| Palakkad           | 98.0                                       |
| Thrissur           | 100  |
| Ernakulam          | 100  |
| Idukki             | 91.7                                       |
| Kottayam           | 98.8                                       |
| Alappuzha          | 98.7                                       |
| Pathanamthitta     | 94.8                                       |
| Kollam             | 99.6                                       |
| Thiruvananthapuram | 99.7                                       |

Source: RCH, District Level Household Survey, 2002-2004.

Awareness of women on sexually transmitted diseases like AIDS is shown in Table 4.26. This awareness is found to be the highest in the districts of Kozhikode (99 per cent) and Kottayam (98.9 per cent). The awareness on AIDS

is the lowest in the district of Idukki (87.1 per cent) followed by Palakkad (87.4 per cent) and Malappuram (87.9 per cent).

**Table 4.26**

**Percentage of Women aware of HIV/AIDS – District Wise**

| <b>District</b>    | <b>Percent of Women aware of HIV/ AIDS</b> |
|--------------------|--|
| Kasargod           | 95.1                                       |
| Kannur             | 98.5                                       |
| Wayanad            | 94.9                                       |
| Kozhikode          | 99.0                                       |
| Malappuram         | 87.9                                       |
| Palakkad           | 87.4                                       |
| Thrissur           | 98.0                                       |
| Ernakulam          | 98.4                                       |
| Idukki             | 87.1                                       |
| Kottayam           | 98.9                                       |
| Alappuzha          | 97.7                                       |
| Pathanamthitta     | 96.9                                       |
| Kollam             | 98.2                                       |
| Thiruvananthapuram | 97.6                                       |

Source: RCH, District Level Household Survey, 2002-2004.

#### **4.2.8 Per capita Income**

The per capita income of the districts of Kerala is shown in Table 4.27. In the table, per capita income till 1998-1999 is at 1980-1981 constant prices whereas per capita income in 1999-2000 and 2005 and after is measured at 1999-2000 prices. In 1998-1999, Kerala is having a per capita income of Rs.2444 at 1980-81 prices. There is considerable variation in per capita income among the districts of Kerala in 1998-99. It is highest in the district of Ernakulam (Rs.3902) followed by Idukki (Rs. 2962) and Wayanad (Rs. 2884) whereas per capita income is found to the lowest in Malappuram (Rs. 1444). In 1999-2000 and 2005-2006 also, per capita income is highest in Ernakulam and the lowest in Malappuram at 1999-2000 prices.

**Table 4.27****Percapita Income in Kerala, District-wise (1980-81 – 1997-98)**

(in Rupees)

| Sl. No | State/District     | 1980-81 | 1990-91 | 1997-98 | 1999-2000 | 2005-06* |
|--------|--------------------|---------|---------|---------|-----------|----------|
|        | <b>KERALA</b>      | 1508    | 1815    | 2444    | 21674     | 30048    |
| 1      | Kasargod           | -       | 1559    | 2331    | 18576     | 24801    |
| 2      | Kannur             | 1571    | 1665    | 2283    | 20235     | 28384    |
| 3      | Wayanad            | 1768    | 1993    | 2884    | 21480     | 26065    |
| 4      | Kozhikode          | 1558    | 1670    | 2297    | 21115     | 29274    |
| 5      | Malappuram         | 1045    | 1094    | 1444    | 15563     | 20585    |
| 6      | Palakkad           | 1307    | 1623    | 2126    | 20030     | 27603    |
| 7      | Thrissur           | 1462    | 1895    | 2458    | 22394     | 31375    |
| 8      | Ernakulam          | 2017    | 2779    | 3902    | 30901     | 44054    |
| 9      | Idukki             | 1995    | 2095    | 2962    | 25712     | 31499    |
| 10     | Kottayam           | 1452    | 1824    | 2596    | 22529     | 33541    |
| 11     | Alappuzha          | 1311    | 1815    | 2114    | 21361     | 29305    |
| 12     | Pathanamthitta     | -       | 1981    | 2594    | 21698     | 31555    |
| 13     | Kollam             | 1536    | 1866    | 2320    | 19836     | 27817    |
| 14     | Thiruvananthapuram | 1484    | 1842    | 2523    | 22786     | 31949    |

Source: Economic Review, Various years.

\*Quick Estimates.

**4.2.9 Human Development**

Kerala continues to rank at the top among Indian states with respect to human development in the 1981, 1991 and 2001, with continuous improvement in its value. District-wise Human Development Indicators and Human Development Index is shown in Table 4.28. The Table shows almost uniform distribution of human development within Kerala. The district-wise human development indices of Kerala for 2001 lie above 0.740 for all the districts. In fact, Ernakulam comes out with a HDI which is as high as 0.80. Malappuram district is having the lowest HDI of 0.749, which itself lies far above the index compared with other regions in India. Idukki and Wayanad follow Malappuram with regard to HDI.

**Table 4.28**  
**District Wise Human Development**  
**Indicators and Human Development Index**

| Districts                     | Real Per Capita Income (pppp) 2001-02 | Life Expectancy at birth, 2000 | Literacy Rate (7+) 2001 | Cross Emolument Ratio 2001 | Income Index | Health Index | Edn Index | HDI   | Rank |
|-------------------------------|---------------------------------------|--------------------------------|-------------------------|----------------------------|--------------|--------------|-----------|-------|------|
| Thiruvananthapuram            | 3102                                  | 75.2                           | 84.4                    | 94.3                       | 0.573        | 0.837        | 0.910     | 0.773 | 9    |
| Kollam                        | 2885                                  | 77.1                           | 91.5                    | 96.1                       | 0.561        | 0.868        | 0.930     | 0.787 | 6    |
| Pathanamthitta                | 2969                                  | 76.7                           | 95.1                    | 97.0                       | 0.566        | 0.862        | 0.957     | 0.795 | 3    |
| Alappuzha                     | 2989                                  | 77.1                           | 93.7                    | 96.8                       | 0.567        | 0.868        | 0.947     | 0.794 | 4    |
| Kottayam                      | 3286                                  | 75.6                           | 95.9                    | 97.0                       | 0.583        | 0.843        | 0.963     | 0.796 | 2    |
| Idukki                        | 3484                                  | 72.4                           | 88.6                    | 86.1                       | 0.593        | 0.791        | 0.878     | 0.754 | 12   |
| Ernakulam                     | 3646                                  | 75.9                           | 93.4                    | 99.1                       | 0.600        | 0.849        | 0.953     | 0.801 | 1    |
| Thrissur                      | 3117                                  | 76.4                           | 92.6                    | 101.4                      | 0.574        | 0.857        | 0.950     | 0.794 | 5    |
| Palakkad                      | 2513                                  | 76.1                           | 84.3                    | 99.5                       | 0.538        | 0.851        | 0.894     | 0.761 | 10   |
| Malappuram                    | 1881                                  | 75.6                           | 88.6                    | 96.8                       | 0.490        | 0.843        | 0.913     | 0.749 | 14   |
| Kozhikode                     | 2858                                  | 75.4                           | 92.5                    | 98.7                       | 0.560        | 0.839        | 0.945     | 0.781 | 8    |
| Wayanad                       | 2909                                  | 73.5                           | 85.5                    | 94.9                       | 0.563        | 0.809        | 0.886     | 0.753 | 13   |
| Kannur                        | 2719                                  | 75.6                           | 92.8                    | 101                        | 0.551        | 0.844        | 0.955     | 0.783 | 7    |
| Kasaragod                     | 2777                                  | 75.7                           | 85.2                    | 94                         | 0.555        | 0.846        | 0.881     | 0.760 | 11   |
| Kerala                        | 2895                                  | 74.6                           | 90.9                    | 97.3                       | 0.562        | 0.827        | 0.930     | 0.773 | -    |
| Coefficient of variations (%) | 14.52                                 | 1.70                           | 4.14                    | 3.93                       | 4.70         | 0.510        | 3.370     | 2.380 | -    |

Source: Planning Commission, 2005.

#### 4.2.10 Gender Development

Kerala is also ranked at the top in the gender – related development index among the major states of India. District –wise GDI is shown in Table 4.29. Among the districts in Kerala, Alappuzha has been in the fourth position with respect to HDI. However, it ranked first with respect to GDI. Next to Alappuzha, Ernakulam district has the highest GDI. Malappuram district is ranked in the lowest position with respect to GDI, followed by Kozhikode and Kannur. In fact, Malappuram is the only district, which has a GDI value of less than 0.700. Thus, we find that Malappuram district is lagging behind the other districts of Kerala with respect to HDI and GDI.

**Table 4.29**

#### **District wise Gender Related Development Index (GDI), 2001**

| Districts                     | Equally distributed Index for |        |           | GDI   | GDI Rank |
|-------------------------------|-------------------------------|--------|-----------|-------|----------|
|                               | Income                        | Health | Education |       |          |
| Thiruvananthapuram            | 0.486                         | 0.835  | 0.910     | 0.743 | 9        |
| Kollam                        | 0.495                         | 0.867  | 0.930     | 0.764 | 6        |
| Pathanamthitta                | 0.487                         | 0.859  | 0.957     | 0.765 | 5        |
| Alappuzha                     | 0.518                         | 0.867  | 0.947     | 0.777 | 1        |
| Kottayam                      | 0.490                         | 0.842  | 0.963     | 0.765 | 4        |
| Idukki                        | 0.559                         | 0.790  | 0.877     | 0.742 | 11       |
| Ernakulam                     | 0.525                         | 0.848  | 0.953     | 0.775 | 2        |
| Thrissur                      | 0.493                         | 0.856  | 0.950     | 0.766 | 3        |
| Palakkad                      | 0.487                         | 0.850  | 0.892     | 0.743 | 10       |
| Malappuram                    | 0.313                         | 0.841  | 0.913     | 0.689 | 14       |
| Kozhikode                     | 0.406                         | 0.838  | 0.945     | 0.730 | 13       |
| Wayanad                       | 0.514                         | 0.810  | 0.886     | 0.736 | 12       |
| Kannur                        | 0.472                         | 0.843  | 0.951     | 0.755 | 7        |
| Kasaragod                     | 0.509                         | 0.844  | 0.879     | 0.744 | 8        |
| Kerala                        | 0.483                         | 0.825  | 0.930     | 0.746 | -        |
| Coefficient of variations (%) | 12.3                          | 2.5    | 3.4       | 3.0   | -        |

Source: Planning Commission, 2005.

Finally, the association between education and demographic variables in Kerala is analysed with the help of a correlation matrix. The data used for making the correlation matrix is presented in Table 4.30. Correlation matrix - 4.31 shows the relationship between female literacy rate and six demographic variables, viz., crude birth rate, total fertility rate, mean age at marriage, couple protection rates, crude death rate and infant mortality rate. We have considered female literacy and five of these demographic variables at three points of time and one demographic variable (mean age at marriage) at two points of time. The correlation matrix shows that there is high degree of negative association between female education and crude birth rate, total fertility rate, crude death rate and infant mortality rate where as mean at marriage and couple protection rate are positively related to female education. Moreover the lagged effect of female literacy on demographic variables can also be seen from the matrix. Thus we conclude that female literacy has a significant impact on demographic transition in the state.

**Table 4.30**  
**Female Literacy and Demographic Variables**

| Sl.No. | State/District     | FLR   |       |       | CBR  |      |      | TFR  |      |      | MAM   |       | CPR  |      |       | CDR  |      |      | IMR  |      |      |
|--------|--------------------|-------|-------|-------|------|------|------|------|------|------|-------|-------|------|------|-------|------|------|------|------|------|------|
|        |                    | 1981  | 1991  | 2001  | 1981 | 1991 | 2001 | 1981 | 1991 | 2001 | 1981  | 1991  | 1981 | 1990 | 1999  | 1981 | 1991 | 2001 | 1981 | 1991 | 2001 |
|        | <b>KERALA</b>      | 65.73 | 86.17 | 87.86 | 25   | 20.3 | 17.1 | 2.9  | 2    | 1.7  | 21.9  | 22.3  | 36.8 | 60.9 | 64    | 4    | 5.37 | 5.7  | 54   | 37   | 26   |
| 1      | Kasargod           | 76    | 76.29 | 79.8  | 26   | 24.4 | 18.9 | 3    | 2.5  | 1.9  | 22    | 21.68 | 30.6 | 45.4 | 64.8  | 5.2  | 4.9  | 4.43 | 45   | 33   | 24   |
| 2      | Kannur             | 59.48 | 87.65 | 89.57 | 28.8 | 20.5 | 16.6 | 3.5  | 2.1  | 1.7  | 21.03 | 22.43 | 29.6 | 58.6 | 54.3  | 4.91 | 5.07 | 5.23 | 45   | 36   | 29   |
| 3      | Wayanad            | 51.51 | 77.69 | 80.8  | 31.4 | 23.4 | 19.5 | 3.8  | 2.3  | 2    | 20.37 | 21.48 | 30.1 | 50.8 | 62.85 | 3.71 | 4.26 | 4.09 | 108  | 36   | 29   |
| 4      | Kozhikode          | 63.81 | 86.79 | 88.86 | 26.3 | 20.5 | 17.4 | 3    | 2    | 1.7  | 20.62 | 21.42 | 39.7 | 63.6 | 68.64 | 5.98 | 6.05 | 5.58 | 54   | 43   | 34   |
| 5      | Malappuram         | 55.34 | 86.79 | 88.86 | 33.6 | 29.5 | 22.4 | 4.3  | 3.4  | 2.4  | 14.34 | 20.49 | 20.8 | 43.3 | 70.76 | 4.59 | 4.96 | 4.08 | 49   | 36   | 26   |
| 6      | Palakkad           | 51.54 | 84.09 | 85.96 | 22.5 | 18.8 | 17.3 | 3.4  | 2.4  | 1.8  | 20.67 | 21.77 | 23.6 | 44   | 43.11 | 6.28 | 6.17 | 5.35 | 64   | 36   | 21   |
| 7      | Thrissur           | 70.21 | 86.94 | 89.94 | 22.2 | 18.7 | 16.1 | 2.5  | 1.9  | 1.6  | 21.14 | 22.7  | 43.8 | 67.7 | 55.92 | 4.85 | 6.02 | 7.34 | 52   | 38   | 28   |
| 8      | Ernakulam          | 72.88 | 89.22 | 90.96 | 21.4 | 16.9 | 15.7 | 2.4  | 1.6  | 1.5  | 21.14 | 22.7  | 45.6 | 68.4 | 66.89 | 4.48 | 5.72 | 6.53 | 50   | 36   | 27   |
| 9      | Idukki             | 62.55 | 82.97 | 85.04 | 26.7 | 19.8 | 17   | 2.9  | 1.8  | 1.6  | 21.87 | 22.8  | 31.2 | 51.2 | 56.56 | 3.3  | 4.06 | 4.22 | 103  | 43   | 30   |
| 10     | Kottayam           | 79.35 | 94    | 94.45 | 20.1 | 16.6 | 15.6 | 2.4  | 1.7  | 1.6  | 23.07 | 23.68 | 45.8 | 73.5 | 70.56 | 5.07 | 6.08 | 6.69 | 59   | 35   | 22   |
| 11     | Alappuzha          | 75.1  | 91.12 | 91.14 | 21   | 16.7 | 15.2 | 2.3  | 1.6  | 1.5  | 23.09 | 23.4  | 41.9 | 68.4 | 72.67 | 5.03 | 5.66 | 5.41 | 38   | 35   | 27   |
| 12     | Pathanamthitta     | 92    | 93.29 | 93.71 | 19   | 17.2 | 14.5 | 1.9  | 1.7  | 1.5  | 22    | 22.9  | 42.7 | 58.6 | 64.38 | 5    | 5.62 | 6.99 | 38   | 29   | 20   |
| 13     | Kollam             | 70.21 | 87    | 88.6  | 23.3 | 18.5 | 16.2 | 2.7  | 1.8  | 1.6  | 22.35 | 22.72 | 44.3 | 71.7 | 63.07 | 3.97 | 4.77 | 5.13 | 46   | 39   | 27   |
| 14     | Thiruvananthapuram | 65.85 | 85.79 | 86.26 | 22.8 | 19.6 | 16.8 | 2.3  | 1.8  | 1.6  | 22.59 | 22.76 | 52.8 | 75.4 | 81.08 | 4.67 | 5.55 | 6.9  | 52   | 25   | 16   |

Source: Census Reports of India and Vital Statistics Bulletins, Various years; Mohanachandran, 2004, Zachariah and Rajan 1997, Bhat (1996), Guilmoto and Rajan (2002) and Economic Review, 2006.

**Table 4.31**

**Correlation Matrix - Female Literacy and Demographic Variables**

| Variables | Year | Female Literacy |       |       | Crude Birth Rate |       |       | Total Fertility Rate |       |       | Mean Age at Marriage |       | Couple Protection Rate |       |       | Crude Death Rate |       |       | Infant Mortality Rate |      |      |
|-----------|------|-----------------|-------|-------|------------------|-------|-------|----------------------|-------|-------|----------------------|-------|------------------------|-------|-------|------------------|-------|-------|-----------------------|------|------|
|           |      | 1981            | 1991  | 2001  | 1981             | 1991  | 2001  | 1981                 | 1991  | 2001  | 1981                 | 1991  | 1981                   | 1991  | 1999  | 1981             | 1991  | 2001  | 1981                  | 1991 | 2001 |
| FLR       | 1981 | 1.00            |       |       |                  |       |       |                      |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
|           | 1991 | 0.54            | 1.00  |       |                  |       |       |                      |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
|           | 2001 | 0.53            | 0.99  | 1.00  |                  |       |       |                      |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
| CBR       | 1981 | -0.73           | -0.58 | -0.55 | 1.00             |       |       |                      |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
|           | 1991 | -0.52           | -0.58 | -0.55 | 0.88             | 1.00  |       |                      |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
|           | 2001 | -0.65           | -0.60 | -0.57 | 0.88             | 0.97  | 1.00  |                      |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
| TFR       | 1981 | -0.83           | -0.54 | -0.49 | 0.91             | 0.82  | 0.88  | 1.00                 |       |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
|           | 1991 | -0.56           | -0.46 | -0.42 | 0.77             | 0.93  | 0.93  | 0.86                 | 1.00  |       |                      |       |                        |       |       |                  |       |       |                       |      |      |
|           | 2001 | -0.60           | -0.49 | -0.45 | 0.84             | 0.95  | 0.97  | 0.89                 | 0.97  | 1.00  |                      |       |                        |       |       |                  |       |       |                       |      |      |
| MAM       | 1981 | 0.53            | 0.16  | 0.10  | -0.73            | -0.81 | -0.82 | -0.78                | -0.87 | -0.86 | 1.00                 |       |                        |       |       |                  |       |       |                       |      |      |
|           | 1991 | 0.63            | 0.58  | 0.53  | -0.79            | -0.87 | -0.88 | -0.83                | -0.88 | -0.87 | 0.82                 | 1.00  |                        |       |       |                  |       |       |                       |      |      |
| CPR       | 1981 | 0.63            | 0.50  | 0.46  | -0.71            | -0.69 | -0.71 | -0.86                | -0.80 | -0.76 | 0.65                 | 0.72  | 1.00                   |       |       |                  |       |       |                       |      |      |
|           | 1991 | 0.47            | 0.60  | 0.57  | -0.61            | -0.68 | -0.68 | -0.72                | -0.76 | -0.71 | 0.58                 | 0.72  | 0.93                   | 1.00  |       |                  |       |       |                       |      |      |
|           | 1999 | 0.35            | 0.25  | 0.18  | -0.06            | 0.07  | 0.04  | -0.30                | -0.13 | -0.02 | 0.05                 | 0.14  | 0.55                   | 0.50  | 1.00  |                  |       |       |                       |      |      |
| CDR       | 1981 | 0.07            | 0.21  | 0.22  | -0.30            | -0.13 | -0.12 | -0.06                | 0.11  | -0.02 | 0.01                 | -0.14 | -0.06                  | -0.06 | -0.15 | 1.00             |       |       |                       |      |      |
|           | 1991 | 0.30            | 0.58  | 0.59  | -0.63            | -0.48 | -0.44 | -0.43                | -0.25 | -0.35 | 0.17                 | 0.25  | 0.39                   | 0.40  | 0.05  | 0.81             | 1.00  |       |                       |      |      |
|           | 2001 | 0.58            | 0.65  | 0.65  | -0.78            | -0.68 | -0.71 | -0.77                | -0.61 | -0.66 | 0.43                 | 0.60  | 0.78                   | 0.71  | 0.19  | 0.31             | 0.74  | 1.00  |                       |      |      |
| IMR       | 1981 | -0.54           | -0.53 | -0.53 | 0.42             | 0.17  | 0.30  | 0.37                 | 0.07  | 0.20  | -0.05                | -0.17 | -0.32                  | -0.34 | -0.27 | -0.53            | -0.57 | -0.46 | 1.00                  |      |      |
|           | 1991 | -0.35           | -0.13 | -0.05 | 0.30             | 0.06  | 0.13  | 0.33                 | 0.05  | 0.07  | -0.18                | -0.19 | -0.33                  | -0.18 | -0.43 | -0.13            | -0.20 | -0.42 | 0.38                  | 1.00 |      |
|           | 2001 | -0.31           | -0.19 | -0.10 | 0.45             | 0.17  | 0.17  | 0.35                 | 0.05  | 0.10  | -0.21                | -0.27 | -0.27                  | -0.12 | -0.22 | -0.20            | -0.29 | -0.43 | 0.29                  | 0.87 | 1.00 |

To understand the relative position of different districts with respect to selected demographic variables, we construct three concentration tables. Concentration tables are extremely useful to locate the relative position of the districts/states with regard to two variables and help us to understand the trend over the years. Table 4.32 is a concentration table showing the place of different districts with respect to female literacy and total fertility rate. It is seen from the concentration table that the southern districts are concentrated on the corners of high literacy and low fertility while the northern districts lie on high fertility and low literacy corners. The position of Malappuram district clearly reveals that it had the lowest literacy rate and highest total fertility rate in 1981. Though fertility declined substantially and literacy increased, in 1991 and 2001, the initial rank of Malappuram continues.

**Table 4.32**  
**Concentration Table – Female Literacy and Total Fertility Rate**

| FEMALE LITERACY | TOTAL FERTILITY RATE, 1981 |           |           |           |              |             |      | TOTAL FERTILITY RATE, 1991 |           |           |           |               |                  |      | TOTAL FERTILITY RATE, 2001 |           |           |           |           |           |                              |     |               |
|-----------------|----------------------------|-----------|-----------|-----------|--------------|-------------|------|----------------------------|-----------|-----------|-----------|---------------|------------------|------|----------------------------|-----------|-----------|-----------|-----------|-----------|------------------------------|-----|---------------|
|                 | 4 & above                  | 3.90-3.50 | 3.40-3.00 | 2.90-2.50 | 2.40-2.00    | 1.90-1.60   | 1.50 | 4 and above                | 3.90-3.00 | 3.40-3.00 | 2.90-2.50 | 2.40-2.00     | 1.90-1.60        | 1.50 | 4 and above                | 3.90-3.00 | 3.40-3.00 | 2.90-2.50 | 2.40-2.00 | 1.90-1.60 | 1.50                         |     |               |
| 1981            | 50 & below                 |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 51 – 55                    | mpm       | wyd       | pkd       |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 56 – 60                    |           | kan       |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 61 – 65                    |           |           | kzd       | ikd          |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 66 – 70                    |           |           |           | tr,ke<br>klm | tvm         |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 71 – 75                    |           |           |           |              | ekm,<br>apa |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 76 – 80                    |           |           |           |              | ktm         |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 81 – 85                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 86 – 90                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
| 91 & above      |                            |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
| 1991            | 50 & below                 |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 51 – 55                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 56 – 60                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 61 – 65                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 66 – 70                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 71 – 75                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 76 – 80                    |           |           |           |              |             |      |                            |           |           | ksd       | pkd,<br>wyd   |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 81 – 85                    |           |           |           |              |             |      |                            |           |           |           | kzd           | ikd              |      |                            |           |           |           |           |           |                              |     |               |
|                 | 86 – 90                    |           |           |           |              |             |      |                            |           | mpm       |           | kan, ke       | klm, ekm, tr,tvm |      |                            |           |           |           |           |           |                              |     |               |
| 91 & above      |                            |           |           |           |              |             |      |                            |           |           |           | pta, apa, ktm |                  |      |                            |           |           |           |           |           |                              |     |               |
| 2001            | 50 & below                 |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 51 – 55                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 56 – 60                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 61 – 65                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 66 – 70                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 71 – 75                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 76 – 80                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           |                              |     |               |
|                 | 81 – 85                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           | ksd, pkd<br>ikd              |     |               |
|                 | 86 – 90                    |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           |           | wyd                          |     |               |
| 91 & above      |                            |           |           |           |              |             |      |                            |           |           |           |               |                  |      |                            |           |           |           |           | mpm       | ke, kan, tvn kzd,<br>tr, klm | ktm | ekm, apa, pta |

Note: mpm-Malapuram, wyd-Wayanad, kan-Kannur, pkd-Palakkad, kzd-Kozhikode, ikd-Idukky, tr-Thrissur, klm-Kollam, tvn-Thiruvananthapuram, ekm-Ernakulam, apa-Alappuzha, ktm-Kottayam, pta-Pathanamthitta, ksd-Kasargod and ke-Kerala.

Table 4.33 shows the concentration of districts with regard to crude birth rate and female literacy. With respect to female literacy and crude birth rate, Malappuram is located in the corner of high birth rate and low literacy rate in 1981. However, female literacy rate improved substantially and crude birth rate declined drastically from 30 and above in 1981 to a range of 24 – 20 in 2001.

Table 4.34 shows the concentration of districts with regard to couple protection rate and female literacy. This table also reveals that the northern districts especially Malappuram lags behind the other districts right from 1981 and its initial place continues with respect to couple protection rate. However, couple protection rates have increased considerably in this district, in 1991 and 2001. Thus the concentration tables help us to understand that Malappuram has the lowest literacy rates and were the late to initiate changes in demographic variables like crude birth rate, fertility rate and couple protection rate.

**Table 4.33**  
**Concentration Table – Female Literacy And Crude Birth Rate**

| FEMALE LITERACY |            | CRUDE BIRTH RATE |         |            |         |                  |              |         |         |            |  |         |         |
|-----------------|------------|------------------|---------|------------|---------|------------------|--------------|---------|---------|------------|--|---------|---------|
|                 |            | 1981             |         |            |         | 1991             |              |         |         | 2001       |  |         |         |
|                 |            | 30 & above       | 29 – 25 | 24 – 20    | 19 – 15 | 30 & above       | 29 – 25      | 24 – 20 | 19 – 15 | 30 & above | 29 – 25  | 24 – 20 | 19 – 15 |
| 1981            | 50 & below |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 51 – 55    | mpm,wyd          |         | pkd        |         |                  |              |         |         |            |  |         |         |
|                 | 56 – 60    |                  | kan     |            |         |                  |              |         |         |            |  |         |         |
|                 | 61 – 65    |                  | lkd,kzd |            |         |                  |              |         |         |            |  |         |         |
|                 | 66 – 70    |                  | ke      | klm,tr,tvm |         |                  |              |         |         |            |  |         |         |
|                 | 71 – 75    |                  |         | apa,ekm    |         |                  |              |         |         |            |  |         |         |
|                 | 76 – 80    |                  |         | ktm        |         |                  |              |         |         |            |  |         |         |
|                 | 81 – 85    |                  |         |            |         |                  |              |         |         |            |  |         |         |
| 86 – 90         |            |                  |         |            |         |                  |              |         |         |            |  |         |         |
| 91 & above      |            |                  |         |            |         |                  |              |         |         |            |  |         |         |
| 1991            | 50 & below |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 51 – 55    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 56 – 60    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 61 – 65    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 66 – 70    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 71 – 75    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 76 – 80    |                  |         |            |         |                  | wyd,ksd      | pkd     |         |            |  |         |         |
|                 | 81 – 85    |                  |         |            |         | Mpm              | ikd          | tr      |         |            |  |         |         |
| 86 – 90         |            |                  |         |            |         | kzd,ke, tvn, kan | klm, ekm     |         |         |            |  |         |         |
| 91 & above      |            |                  |         |            |         |                  | apa,ktm, pta |         |         |            |  |         |         |
| 2001            | 50 & below |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 51 – 55    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 56 – 60    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 61 – 65    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 66 – 70    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 71 – 75    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 76 – 80    |                  |         |            |         |                  |              |         |         |            |  |         |         |
|                 | 81 – 85    |                  |         |            |         |                  |              |         |         |            | wyd  | ksd,pdk |         |
| 86 – 90         |            |                  |         |            |         |                  |              |         |         | mpm        | ikd  |         |         |
| 91 & above      |            |                  |         |            |         |                  |              |         |         |            | kan, ke, klm kzd, tr,tvm<br>ekm, ktm, apa, pta |         |         |

Note: mpm-Malapuram, wyd-Wayanad, kan-Kannur, pkd-Palakkad, kzd-Kozhikode, ikd-Idukky, tr-Thrissur, klm-Kollam, tvn-Thiruvananthapuram, ekm-Ernakulam, apa-Alappuzha, ktm-Kottayam, pta-Pathanamthitta, ksd-Kasargod and ke-Kerala.

**Table 4.34**  
**Concentration Table – Female Literacy And Couple Protection Rate**

| FEMALE LITERACY | COUPLE PROTECTION RATE |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|-----------------|------------------------|-------------|---------|---------|---------|---------|------------|------------|---------|----------------|---------|---------|---------|------------|------------|---------|---------|---------|------------|---------|------------|--|--|
|                 | 1981                   |             |         |         |         |         |            | 1991       |         |                |         |         |         | 2001       |            |         |         |         |            |         |            |  |  |
|                 | 30 & below             | 31 – 40     | 41 – 50 | 51 – 60 | 61 – 70 | 71 – 80 | 80 & above | 30 & below | 31 – 40 | 41 – 50        | 51 – 60 | 61 – 70 | 71 – 80 | 80 & above | 30 & below | 31 – 40 | 41 – 50 | 51 – 60 | 61 – 70    | 71 – 80 | 80 & above |  |  |
| 1981            | 50 & below             |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 51 – 55                | pkd,wyd,mpm |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 56 – 60                | kan         |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 61 – 65                |             | kzd,ikd |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 66 – 70                |             | ke      | ter,klm | tvm     |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 71 – 75                |             |         | ekm,apa |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 76 – 80                |             |         | ktm     |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 81 – 85                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
| 86 – 90         |                        |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
| 91 & above      |                        |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
| 1991            | 50 & below             |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 51 – 55                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 56 – 60                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 61 – 65                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 66 – 70                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 71 – 75                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 76 – 80                |             |         |         |         |         |            |            |         | ksd,pkd        | wyd     |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 81 – 85                |             |         |         |         |         |            |            | mpm     | ikd            |         |         |         |            |            |         |         |         |            |         |            |  |  |
| 86 – 90         |                        |             |         |         |         |         |            | kan        | pta     | kzd,ke,ekm,ter | Klm,tvm |         |         |            |            |         |         |         |            |         |            |  |  |
| 91 & above      |                        |             |         |         |         |         |            |            |         | apa            | ktm     |         |         |            |            |         |         |         |            |         |            |  |  |
| 2001            | 50 & below             |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 51 – 55                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 56 – 60                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 61 – 65                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 66 – 70                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 71 – 75                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         |            |         |            |  |  |
|                 | 76 – 80                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         | ksd     | pkd        |         |            |  |  |
|                 | 81 – 85                |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         |         | wyd,ikd    |         |            |  |  |
| 86 – 90         |                        |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         | mpm     | kan,kzd | klm,ke,ter | tvm     |            |  |  |
| 91 & above      |                        |             |         |         |         |         |            |            |         |                |         |         |         |            |            |         |         | apa     | ktm,ekm    | pta     |            |  |  |

Note: mpm-Malapuram, wyd-Wayanad, kan-Kannur, pkd-Palakkad, kzd-Kozhikode, ikd-Idukky, ter-Thrissur, klm-Kollam, tvn-Thiruvananthapuram, ekm-Ernakulam, apa-Alappuzha, ktm-Kottayam, pta-Pathanamthitta, ksd-Kasargod, and ke-Kerala.

### 4.3 CONCLUSION

From the above analysis of various demographic and structural features of population, we can see wide variations at the district-level. The pace of transition is not the same for all districts of Kerala. This is especially true in the case of Malappuram. Malappuram is the district, which has the largest size of population and the highest growth rate of population. Statistical figures on the demographic features of Malappuram show that crude birth rate, total fertility rate, proportion of females married below the age of 20, child woman ratio, and dependency ratio, are highest in this district of Kerala. It is also the district having the lowest couple protection rate, crude death rate and mean age at marriage for both males and females. Malappuram it is also having the second highest child mortality ratio.

A look into the structural features of population show that Malappuram is having the lowest work participation rates (for both males and females) and per capita income. Literacy rate of this district lies below the state average while sex ratio and density of population is above the state average. Malappuram district is having the third lowest urban population among the districts of Kerala. Number of schools, arts and science colleges, and hospital beds in relation to population is lowest in this district. Thus, the structural factors conducive to demographic transition register an unfavorable trend in the district of Malappuram. Based on the above analysis of statistical data, we can conclude that Malappuram is the demographically vulnerable district of Kerala. Besides Malappuram, Kasargod is also lagging behind with regard to a number of demographic variables.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

**By  
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Thesis submitted to the University of Calicut  
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# **PROFILE OF THE SAMPLE AREA AND THE SAMPLE WITH EMPHASIS ON EDUCATION AND EMPLOYMENT**

- 5.1 Introduction*
- 5.2 Sample Selection*
- 5.3 General Details of the Samples*
- 5.4 Housing Conditions*
- 5.5 Socio-Political Involvement*
- 5.6 Education and Attitude towards Education*
- 5.7 Details on Employment*
- 5.8 Conclusion*

## CHAPTER - V

# **PROFILE OF THE SAMPLE AREA AND THE SAMPLE WITH EMPHASIS ON EDUCATION AND EMPLOYMENT**

### **5.1 INTRODUCTION**

Malappuram district came into existence on 15.6.1969 as a result of the reorganization of the districts of Palghat and Kozhikode. The district consists of 6 Taluks, 14 Blocks and 100 Panchayaths. The area of the district is 3550 sq. km. (Appendix II). The district headquarters is located at Malappuram. In early times, Malappuram was the headquarters of European and British troops and later it became the headquarters of Malabar Special Police. This place has still the ruins of an ancient fort built by Tippu Sultan. Malappuram was also the scene of the Malabar rebellion of 1921 which was suppressed by the Malabar Special Police. Malappuram is bounded by Kozhikode district on the north, by the Nilgiri district of Tamil Nadu on the east, by Palghat and Trichur district in the south and by Arabian Sea on the west.

Malappuram district is characterized by high rate of population growth and industrial, agricultural and educational backwardness. This district is industrially and agriculturally the most backward district in Kerala. With respect to the population growth, this district witnessed rapid increase during all the decades but recently the growth rate has shown a declining tendency and is now moderate. The religious composition of the district shows that the single largest religious community is Muslims. Facilities of education and medical and health care are relatively insufficient in this district. Due to all these factors, the

demographic trends exhibited by this district is different in various aspects when we compare with the state average and other districts of Kerala.

## 5.2 SAMPLE SELECTION

Our samples are exclusively females who are married. The sample area for the present study includes four Panchayaths and two towns of Malappuram district. The Panchayaths covered for the study are Cherukavu, Thannur, Thirunavaya and Vettathoor and the selected towns are Malappuram and Perinthalmanna. The profile of the sample area is given in Appendix III.

**Table 5.1**  
**Criteria for Selection of Samples**

| <b>Name of the Panchayath/ Municipality</b> | <b>Criteria for Selection of Sample</b> | <b>Number of Samples</b> | <b>Percentage</b> |
|---|---|--------------------------|-------------------|
| Cherukavu                                   | Most literate Panchayath                | 58                       | 18.89%            |
| Thannur                                     | Least Literate Panchayath               | 58                       | 18.89%            |
| Thirunavaya                                 | Highest Sex ratio                       | 58                       | 18.89%            |
| Vettathoor                                  | Lowest sex ratio                        | 58                       | 18.89%            |
| Perinthalmanna                              | Urban area                              | 38                       | 12.37%            |
| Malappuram                                  | Urban area                              | 37                       | 12.05%            |
| <b>Total</b>                                | --                                      | <b>307</b>               | <b>100%</b>       |

Sample selection and the criteria for selection of samples is presented in Table 5.1. The sample consisted of 307 households of Malappuram district. The samples are selected with utmost care so that it conforms with the rural-urban population ratio of 75:25. Four Panchayaths and two Municipalities are selected

for the purpose of the study. The criteria for the selection of Panchayaths are literacy rate and sex ratio of the population, based on 1991 census. Literacy rate and sex ratio are often considered as indicators of status of women in society. Accordingly, Cherukavu (most literate panchayath), Thanur (least literate Panchayath), Thirunavaya (highest sex ratio) and Vettathoor (lowest sex ratio) are selected and 58 samples are taken randomly from each panchayath. Data for urban areas are collected from Malappuram (37 samples) and Perintalmanna (38 samples), so that these together form 25 per cent of the total samples. Thus, out of the 307 samples, 232 belongs to rural area and 75 belongs to the urban area. Data collection was really time consuming because we interviewed females at their homes, and had to wait, as they were busy with their children and household activities. Besides this, some of our respondents were not willing to give information, especially on the incidence of abortions, contraceptive use and income and wealth. This necessitated the establishment of rapport with the samples.

### **5.3 GENERAL DETAILS OF THE SAMPLE POPULATION**

General aspects of population pertaining to socio-economic conditions of living also influence demographic transition of an area. Out of total households, 82.7 per cent are male headed and 17.3 per cent are female headed. Only 9.4 per cent of the head of the households are non-resident Indians.

Religion-wise break up of households shows that 73.9 per cent belongs to Muslim community and the respective share of Hindus and Christians are of the order 21.8 per cent and 4.2 per cent. Caste-wise break up of households reveals that 83 per cent belonged to the category Other Backward Castes, 6.2 per cent to Scheduled Castes, 0.7 per cent to Other Eligible Castes and 10.1 per cent to the

category Others (forward castes). Distribution of households by place of residence shows that 75.2 per cent resides in rural areas and 24.8 per cent resides in urban areas. Classification of the households by the nature of family shows that majority of the families are nuclear (62.5 per cent) and the percentage of joint families comes to 37.5 per cent. Present marital status of respondents shows that 92.5 per cent are currently married, 5.86 per cent are widows, 0.65 per cent are separated and 0.97 per cent are divorced.

Age composition of our sample households shows that 10.4 per cent are five years old and below, 15.5 per cent belongs to the category 6-14 years, 67.3 per cent lies in the category 15-59 years and the rest (6.8 per cent) are aged 60 and above. Thus the percentage of members who are 14 years old and below is 25.91 per cent and the percentage of dependents is 32.7 per cent. The sex composition of our households shows that 51.8 per cent of the members are females and 48.2 per cent are males. Mean number of members in our sample households shows that it is 7.08 for Muslims, 6.19 for Hindus and 5.9 for Christians. The mean number of members for all respondents is 6.83.

Level of education of the members of the sample households is presented in Table 5.2. Among the members of our sample households 12.5 per cent are 7 years old or below and hence haven't gained the ability to read and write, 6.1 per cent are illiterate, 12.0 per cent have only 1 to 4 years of schooling, 17.8 per cent have 5 to 7 years of schooling, 36.3 per cent have 8 to 10 years of schooling, 6.2 per cent have Pre-Degree, 4.1 per cent are degree holders, 0.7 per cent are post graduates, 2.8 per cent are professionals and 1.5 per cent have technical education. Thus, 36 per cent of the members of our sample households are either illiterate or having an educational attainment of less than 8 years of schooling.

Only 15.3 per cent of the members of the sample households have an educational attainment of ten years of schooling and above. A religious wise break up of respondent households shows that the percentage of respondent households who have 10 or below years of schooling is high among Muslims (75.9 per cent) while it is lowest among Christians (45.5 per cent).

**Table 5.2**

**Level of Education of Members of Sample Households**

| Level of Education     | Level of Education by Religion |                |               | Total          |
|------------------------|--------------------------------|----------------|---------------|----------------|
|                        | Muslim                         | Hindu          | Christian     |                |
| N.A<br>(below 7 years) | 207<br>(12.4%)                 | 51<br>(12.2%)  | 12<br>(15.6%) | 270<br>(12.5%) |
| Illiterate             | 103<br>(6.2%)                  | 28<br>(6.7%)   | 1<br>(1.3%)   | 132<br>(6.1%)  |
| 1 – 4                  | 222<br>(13.3%)                 | 35<br>(8.4%)   | 2<br>(2.6%)   | 259<br>(12.0%) |
| 5 – 7                  | 329<br>(19.7%)                 | 52<br>(12.5%)  | 4<br>(5.2%)   | 385<br>(17.8%) |
| 8 – 10                 | 611<br>(36.7%)                 | 144<br>(34.5%) | 28<br>(36.4%) | 783<br>(36.3%) |
| Pre-Degree             | 93<br>(5.6%)                   | 33<br>(7.9%)   | 7<br>(9.1%)   | 133<br>(6.2%)  |
| Degree                 | 49<br>(2.9%)                   | 33<br>(7.9%)   | 7<br>(9.1%)   | 89<br>(4.1%)   |
| Post Graduation        | 11<br>(0.7%)                   | 5<br>(1.2%)    | -             | 16<br>(0.7%)   |
| Professional           | 24<br>(1.4%)                   | 23<br>(5.5%)   | 13<br>(16.9%) | 60<br>(2.8%)   |
| Total                  | 1666<br>(100%)                 | 417<br>(100%)  | 77<br>(100%)  | 2160<br>(100%) |

Source : Primary Data.

Occupational status of the members of the sample households is shown in Table 5.3. Of the members of our sample households 32.7 per cent are dependents and 39.6 per cent are unemployed. Thus only 27.4 per cent of the

members go for one or the other type of employment or work or are retired having an age below 60. This 27.4 per cent comprises of coolies (10.1 per cent), Non Resident Indians (5.6 per cent), Self-employed (3.3 per cent), businessmen (2.7 per cent), Government employees (2.2 per cent), Other jobs (1.8 per cent), agriculturists (0.7 per cent) and the retired (1 per cent). Thus, we see that the role of agriculture and industry in generating employment and providing a source of livelihood is insignificant among our sample households.

**Table 5.3**  
**Occupational Status of the Members of Sample Households**

| Occupational Status | Religion       |                |               | Total          |
|---------------------|----------------|----------------|---------------|----------------|
|                     | Muslim         | Hindu          | Christian     |                |
| Coolie              | 144<br>(8.6%)  | 70<br>(16.8%)  | 4<br>(5.2%)   | 218<br>(10.1%) |
| Agriculturist       | 13<br>(0.8%)   | 3<br>(0.7%)    | -             | 16<br>(0.7%)   |
| Self employed       | 57<br>(3.4%)   | 14<br>(3.4%)   | 1<br>(1.3%)   | 72<br>(3.3%)   |
| Government Service  | 15<br>(0.9%)   | 23<br>(5.5%)   | 9<br>(11.7%)  | 47<br>(2.2%)   |
| Business            | 41<br>(2.5%)   | 11<br>(2.6%)   | 6<br>(7.8%)   | 58<br>(2.7%)   |
| Non Resident Indian | 115<br>(6.9%)  | 6<br>(1.4%)    | 1<br>(1.3%)   | 122<br>(5.6%)  |
| Other Occupation    | 15<br>(0.9%)   | 17<br>(4.1%)   | 6<br>(7.8%)   | 38<br>(1.8%)   |
| Retired             | 10<br>(0.6%)   | 8<br>(1.9%)    | 3<br>(3.9%)   | 21<br>(1.0%)   |
| Unemployed          | 638<br>(41.3%) | 145<br>(34.8%) | 23<br>(29.9%) | 856<br>(39.6%) |
| N.A (Dependents)    | 568<br>(34.1%) | 120<br>(28.8%) | 24<br>(31.2%) | 712<br>(33.0%) |
| Total               | 1666<br>(100%) | 417<br>(100%)  | 77<br>(100%)  | 2160<br>(100%) |

Source : Primary Data.

## 5.4 HOUSING CONDITIONS

Housing conditions influences the quality of life. Of our samples, 91.5 per cent have own houses while 7.2 per cent live in rented houses and 1.3 per cent live in shared houses. Majority of our sample households live in tiled houses (54.7 per cent). The percentage of households who have concrete houses is 44.3 and 1 per cent of our sample households live in thatched houses. Of the total sample households, 66.1 per cent live in single storied houses and 33.9 per cent live in double storied houses. Distribution of households by number of bedrooms shows that 0.7 per cent of our samples households doesn't have bedrooms at all. The percentage of households having one, two, three, four and five bedrooms is 5.2, 41.0, 26.1, 19.9 and 4.2 respectively. The percentage of households having six and more bedrooms comes to 2.9 per cent of the total households. Number of toilet-cum bathrooms among our sample households show that 1.3 per cent do not have toilet cum bathrooms while 57 per cent have one, 28 per cent have two, 3.1 per cent have three and 5.6 per cent have four and more bathrooms.

Availability of safe drinking water is an important indicator of health of an area. Distribution of households by source of water shows own well as the main source for 60.26 per cent of households. Public well/tap (17.5 per cent), neighbourhood (9.4 per cent), River (2.3 per cent) and Municipality water connection (5.5 per cent) are the other sources of water. Both own well and municipality water forms the source of water for 4.9 per cent of the households.

Classification of households by consumer durables shows that 62 per cent have mixi, 53 per cent have television, 40 per cent have refrigerator, 58 per cent have gas connection, 45 per cent have electric iron, and telephone, and 17 per

cent have washing machine. More than one of the luxurious consumer durables (like Air Conditioner, Computer, Oven etc.) is possessed by 31 per cent of the households. Ownership of vehicles shows that 17.6 per cent have two wheelers, 5.5 per cent have auto rickshaws, 6.5 per cent have cars, 2.3 per cent have jeeps and 2.3 per cent have lorries.

## **5.5 SOCIO-POLITICAL INVOLVEMENT**

Socio-political involvement show the participation of females in activities other than their usual household duties and is an indicator of their empowerment. It is important because it helps females to become aware of their roles and rights in society and also to contribute productively in terms of employment and income to the family and society.

Among our samples, 9.4 per cent did not use their right to vote. The respondents for not using their right to vote gave technical problems like the absence of voter's identity card. Only 6.2 per cent of our respondents are engaged in political activities and the percentage of political participation is found high among the religious groups of Christians. Among Christians, 15.4 per cent are engaged in political activities followed by Hindus (11.9 per cent). The percentage of Muslims who participate in political activities is very low (4 per cent). Interestingly, the percentage of females who participate in political activities is found high in rural areas (7.8 per cent) when compared with urban areas (1.3 per cent).

Among our respondents, 21.5 per cent used to participate in women's associations like Ayalkootam, Kundumbasree, etc. The participation of females in these associations is found high in rural areas (26 per cent) when compared

with urban areas (7.9 per cent). Majority of women who participated in women's associations participated in Kudumbasree's (31.85 per cent) followed by Ayalkootam and self help groups (27.2 per cent), Mahila Samajam (12.1 per cent) and other social clubs. Among those who participated in women's associations, 66.7 per cent opined that these associations have enhanced their life, especially by creating social awareness. To some, it is a source of employment and income (6.3 per cent). Besides this, 14.6 per cent said that they had moral support and encouragement from these institutions.

Accessibility to library also influences one's awareness and educational attainment. Of our samples, 52.1 per cent said that they have libraries within walkable distance. But unfortunately, females who go and use this facility is only 23.1 per cent among those who have libraries nearby. A religious wise break-up shows that the percentage who makes use of these libraries is the lowest among Muslims (21 per cent) followed by Hindus (27.3 per cent). It is the highest among Christians (37.5 per cent). Among our samples, 50 per cent said that they usually go to their religious institutions to worship their lord. Majority (95.8 per cent) of the respondents opined that they are interested in preserving their religious customs and traditions. Of all the respondents 61 per cent participated in religious festivals.

## **5.6 EDUCATION AND ATTITUDE TOWARDS EDUCATION**

Kerala model of development is characterized by spectacular improvements in social sectors and quality of life, inspite of poor performance in commodity producing sectors. As a consequence, Kerala has the highest literacy rates in India and even at the time of the formation of Kerala, nearly half of the Keralites were literate. The districts in Kerala, which have a literacy rate lower

than the state average, are Palakkad, Malappuram, Kasargod, Wayanad and Idukki. Attitude towards education and educational aspirations for children do influence the educational attainment of a society. As Malappuram is our sample area, having literacy rate lower than the state average, we attempt to understand the educational status and attitude of our samples towards education.

Mean years of schooling of our respondents, religion-wise are shown in Table 5.4. For all respondents, the mean years of schooling are 7.5407. Among the religious groups, mean years of schooling are found highest among Christians (12.0769), followed by Hindus (8.2985). It is the lowest among our Muslim respondents (7.0573). Thus, among our samples, the number of years of schooling of Muslims is lower than that of non-Muslims. A rural-urban wise break-up of our respondents shows that the mean years of schooling is relatively high in urban areas (8.0658) when compared with rural areas (7.368).

**Table 5.4**

**Mean Years of Schooling, Religion Wise**

| <b>Religion</b> | <b>Mean years of schooling</b> |
|-----------------|--------------------------------|
| Muslims         | 7.0573                         |
| Hindu           | 8.2985                         |
| Christian       | 12.0769                        |
| Total           | 7.5407                         |

Source: Primary Data.

Caste-wise mean years of schooling are shown in Table - 5.5. The mean number of years of schooling is the lowest among the category of Other Eligible Castes (OEC) and it is 5 years, followed by scheduled castes and tribes (6.4211) and other backward castes (7.2118). The category 'Others' which include the forward castes and Christians have the highest mean number of years of

schooling and it is 11.0968. Thus, the mean years of schooling among the socially deprived classes (SC/ST's, OBC's and OEC's) are found to be low. Mean years of schooling are also influenced by the family income. The mean years of schooling is 6.2868 for those respondents having an income below Rs. 3000, 7.4127 for those with an income of Rs. 3000-7000 and 8.0396 for those who have an income of more than 7000.

**Table 5.5**  
**Mean Years of Schooling, Caste Wise**

| Caste  | Mean years of schooling |
|--------|-------------------------|
| SC/ST  | 6.4211                  |
| OBC    | 7.2118                  |
| OEC    | 5.000                   |
| Others | 11.0968                 |
| Total  | 7.5407                  |

Source: Primary Data.

Respondent's interest in educating their children by religion is given in Table 5.6. The Table shows that the percentage of respondents who are not interested in educating their children is highest among Muslims (12.3 per cent) and it is 4.5 per cent for the Hindus. Hundred per cent of the respondents belonging to the Christian community expressed their willingness to educate their children.

**Table 5.6****Interest in Educating Children – Religion wise**

| <b>Opinion<br/>Religion</b> | <b>Not interested</b> | <b>Interested</b> | <b>Total</b>    |
|-----------------------------|-----------------------|-------------------|-----------------|
| Muslim                      | 28<br>(12.3%)         | 199<br>(87.7%)    | 227<br>(100.0%) |
| Hindu                       | 3<br>(4.5%)           | 64<br>(95.5%)     | 67<br>(100.0%)  |
| Christian                   | -                     | 13<br>(100.0%)    | 13<br>(100.0%)  |
| Total                       | 31<br>(10.1%)         | 276<br>(89.9%)    | 307<br>(100.0%) |

Source: Primary Data.

Economic problems of the household are the main reason cited for lack of interest in educating children. Of the total respondents who have no interest in educating their children, 61.3 per cent attributed it due to economic problems, 9.7 per cent responded that there is not much to gain out of education and 29 per cent gave some other reasons. Of the respondents who are interested in educating children, 42.7 per cent arranged tuition classes for their children. Among the respondents who arranged tuition classes for their children, 65 per cent arranged it for those subjects in which the child is weak while the rest (35 per cent) arranged tuition for all the subjects.

Attitude on educating girl child on a par with boy child shows that 21.2 per cent of our respondents are not willing to educate their children of both sexes equally. This is shown in Table 5.7. A religious wise break-up of samples shows that the percentage of respondents who are not willing to educate their children of both sexes equally is high among Muslims (23.8 per cent) followed by Hindus (16.4 per cent), while all the samples belonging to the Christian community

responded equal treatment for boys and girls with respect to education. Education-wise break-up of respondents show that the percentage of respondents who are not willing to give equal education for both sexes declines with an increase in the respondents educational attainment.

**Table 5.7**

**Attitude on Educating Girl Child on a par with Boy Child – Religion wise**

| <b>Religion</b> | <b>Not interested</b> | <b>Interested</b> | <b>Total</b>    |
|-----------------|-----------------------|-------------------|-----------------|
| Muslim          | 54<br>(23.8%)         | 173<br>(76.2%)    | 227<br>(100.0%) |
| Hindu           | 11<br>(16.4%)         | 56<br>(83.6%)     | 67<br>(100.0%)  |
| Christian       | --                    | 13<br>(100.0%)    | 13<br>(100.0%)  |
| Total           | 65<br>(21.2%)         | 242<br>(18.8%)    | 307<br>(100.0%) |

Source: Primary Data.

Classification of respondents on the basis of the reason for not treating children of both sexes equally with respect to education is given in Table 5.8. Of the total respondents, 21.5 per cent attributed it due to economic problems, 33.8 per cent gave religious reasons, 18.4 per cent expects additional burden at the time of marriage of the girl child, 12.3 per cent believes that there is nothing to gain out of female education and 13.8 per cent give some other reasons for not treating girl children equally with boys, in respect of education. Nearly 15 per cent of females among Muslims responded that there is nothing to gain out of female education while this attitude is not seen among other religious groups.

**Table 5.8****Reasons for not Treating Girls on a par with Boys in Education**

| <b>Reasons</b>                            | <b>Religion</b>              |                              |                              |
|---|------------------------------|------------------------------|------------------------------|
|   | <b>Muslim</b>                | <b>Hindu</b>                 | <b>Total</b>                 |
| Economic Problems                         | 9<br>(16.7%)                 | 5<br>(45.5%)                 | 14<br>(21.5%)                |
| Religious reasons                         | 20<br>(37.0%)                | 2<br>(18.2%)                 | 22<br>(33.8%)                |
| Nothing to gain from female education     | 8<br>(14.8%)                 | --                           | 8<br>(12.3%)                 |
| Additional burden at the time of marriage | 10<br>(18.5%)                | 2<br>(18.2%)                 | 12<br>(18.4%)                |
| Other                                     | 7<br>(13.0%)                 | 2<br>(18.2%)                 | 9<br>(13.8%)                 |
| <b>Total</b>                              | <b>54</b><br><b>(100.0%)</b> | <b>11</b><br><b>(100.0%)</b> | <b>65</b><br><b>(100.0%)</b> |

Source: Primary Data.

Religious-wise break-up of respondent's attitude on whether girl's education is more fruitful than boys or not is given in Table 5.9. Nearly half of the respondents belonging to Muslims argue that girls' education is not more fruitful than boys while majority of the respondents belonging to Hindu and Christian community opines that girls' education is more fruitful than boys. Respondents with high levels of education opined that girls' education is more fruitful than boys.

**Table 5.9****Attitude on whether Girls' Education is more Fruitful than Boys**

| <b>Response</b><br><b>Religion</b> | <b>No</b>       | <b>Yes</b>      | <b>Equal</b>  | <b>Total</b>  |
|------------------------------------|-----------------|-----------------|---------------|---------------|
| Muslim                             | 110<br>(48.45%) | 106<br>(46.69%) | 11<br>(4.84%) | 227<br>(100%) |
| Hindu                              | 27<br>(40.29%)  | 38<br>(56.71%)  | 2<br>(2.98%)  | 67<br>(100%)  |
| Christian                          | 5<br>(38%)      | 8<br>(61.53%)   | --            | 13<br>(100%)  |
| <b>Total</b>                       | 142<br>(46.25%) | 152<br>(49.51%) | 13<br>(4.23%) | 307<br>(100%) |

Source: Primary Data.

Respondents who argued that girls' education is more fruitful were asked the reasons for their argument. This is shown in Table 5.10. Of the total respondents who supported this argument, 40.8 per cent agreed that it is a source of income, 11.8 per cent opined that it enhances the social status of the family, 18.4 per cent argues that education will empower them, 12.5 per cent views that girls' education helps in the creation of better future generation. A combination of 2, 3 and 4 options are given by 16.4 per cent of respondents. In our society, the role of mothers is relatively higher than fathers in bringing up children and in helping the children to read and write. So certainly, mothers who are educated influence the educational aspirations and attainment of their children and can bring up a better future generation.

**Table 5.10****Reasons for more Fruitfulness of Girls' Education – Religion-wise**

| Sl. No. | Reason                               | Religion      |               |              | Total         |
|---------|--------------------------------------|---------------|---------------|--------------|---------------|
|         |                                      | Muslim        | Hindu         | Christian    |               |
| 1.      | A source of income                   | 44<br>(41.5%) | 14<br>(36.8%) | 4<br>(50%)   | 62<br>(40.8%) |
| 2.      | Enhances social status of the family | 14<br>(13.2%) | 2<br>(5.3%)   | 2<br>(25.0%) | 18<br>(11.8%) |
| 3.      | Empowers women                       | 20<br>(18.9%) | 7<br>(18.4%)  | 1<br>(12.5%) | 28<br>(18.4%) |
| 4.      | Creates better future generation     | 10<br>(9.4%)  | 8<br>(21.1%)  | 1<br>(12.5%) | 19<br>(12.5%) |
| 5.      | 2, 3 and 4                           | 18<br>(17.4%) | 7<br>(18.4%)  | --           | 25<br>(16.4%) |
| 6.      | Total                                | 106<br>(100%) | 38<br>(100%)  | 8<br>(100%)  | 152<br>(100%) |

Source: Primary Data.

Out of the total respondents 14 per cent are not ready to send their girl child for job even if she gets it. This was mainly because of the attitude that females need not go for job and this response form 49 per cent of the total response among those who are not ready to send their girls for job (Table 5.11). Respondents with higher levels of education are more willing to send their children for job when compared with respondents with lower education. It can also be seen that the percentage who argue that females need not go for job is the highest among Muslims.

**Table 5.11****Reasons for Not Allowing Girls to Go for Job – Religion wise**

| Reasons                     | Religion       |               |               |                |
|-----------------------------|----------------|---------------|---------------|----------------|
|                             | Muslim         | Hindu         | Christian     | Total          |
| Females need not go for job | 20<br>(54.1%)  | 1<br>(20.0%)  | --            | 21<br>(48.8%)  |
| Insecurity                  | 2<br>(5.4%)    | --            | 1<br>(100.0%) | 3<br>(7.0%)    |
| To look after the children  | 1<br>(2.7%)    | 1<br>(20.0%)  | --            | 2<br>(4.7%)    |
| Attitudinal problems        | 10<br>(27.0%)  | 3<br>(60.0%)  | --            | 13<br>(30.2%)  |
| Marriage                    | 4<br>(10.8%)   | --            | --            | 4<br>(9.3%)    |
| Total                       | 37<br>(100.0%) | 5<br>(100.0%) | 1<br>(100.0%) | 43<br>(100.0%) |

Source: Primary Data.

Response on whether higher education provides increased opportunity for employment was gathered. Of the total respondents, 25.45 per cent disagree with the notion that higher education provides increased opportunities of employment. Among those who does not believe that higher education provides increased opportunity for employment, 59 per cent points to the backlog of unemployed as the reason for their argument while the need of donation and political influence to get a job are cited as reasons by 23.1 per cent and 17.9 per cent respectively. This is shown in Table 5.12. Of our respondents, 77.5 per cent supports the view that education enhances economic benefits, 73.6 per cent supports that female education helps their liberation and 82 per cent opined that education would make females rational.

**Table 5.12**

**Reasons for Failure of Higher Education in Providing Increased Employment Opportunities**

| <b>Reasons</b>               | <b>Total</b>  |
|------------------------------|---------------|
| Backlog of Unemployed        | 46<br>(59%)   |
| Requires donation to get job | 18<br>(23.1%) |
| Requires political influence | 14<br>(17.9%) |
| Total                        | 78<br>(100%)  |

Source: Primary Data.

Majority of the respondents do not consider employment as the prime benefit from education. Only 36.2 per cent considers employment as the prime benefit of education. The rest (63.8 per cent) gives priority to some other benefits of education. This is shown in Table 5.13. Among the respondents who do not treat employment as the prime benefit from education, 35.2 per cent opined that education creates better socio-political awareness and 17.3 per cent viewed the role of education in creating better future generation. The role of education in the creation of better citizens and socio-political awareness was pointed by 24 per cent of the respondents who did not consider employment as the prime benefit from education. Besides these responses, 8.2 per cent responded that education would make people rational and 7.1 per cent pointed that education would enhance the social status of the individual and his/ her family.

**Table 5.13****Benefits Other than Employment from Education**

| <b>Sl. No.</b> | <b>Benefits from Education</b>           | <b>Total</b>  |
|----------------|--|---------------|
| 1              | Enhances Social Status                   | 14<br>(7.1%)  |
| 2              | Creates better socio-political awareness | 69<br>(35.2%) |
| 3              | Creates better citizens                  | 34<br>(17.3%) |
| 4              | Makes individuals rational               | 16<br>(8.2%)  |
| 5              | Any other                                | 16<br>(8.2%)  |
| 6              | Both 2 and 3                             | 47<br>(24.0%) |
|                | Total                                    | 196<br>(100%) |

Source: Primary Data.

Response on whether education is an important factor affecting marriage is given in Table 5.14. Of all the respondents, 55 per cent feels that education is not an important factor influencing marriage, while the rest (45 per cent) feels that education is an important factor affecting marriage. The percentage of respondents who feel that education is not an important factor affecting marriage is high among Muslims (57 per cent) while 76.92 per cent of respondents belonging to Christianity support the view that education is an important factor affecting marriage.

**Table 5.14**

**Attitude on Whether Education Affects Marriage – Religion wise**

| <b>Opinion</b><br><b>Religion</b> | <b>No</b>       | <b>Yes</b>     | <b>Total</b>  |
|-----------------------------------|-----------------|----------------|---------------|
| Muslim                            | 131<br>(57.70%) | 96<br>(42.29%) | 227<br>(100%) |
| Hindu                             | 35<br>(52.23%)  | 32<br>(41.76%) | 67<br>(100%)  |
| Christian                         | 3<br>(23.07%)   | 10<br>(76.92%) | 13<br>(100%)  |
| Total                             | 169<br>(55%)    | 138<br>(45%)   | 307<br>(100%) |

Source: Primary Data.

Respondents were asked whether they made use of the educational facilities available to them at their schooling age. Majority of our respondents (82.1 per cent) replied that they couldn't make use of educational facilities on account of a number of reasons. This is shown in Table 5.15. Among the reasons, early marriage is the most dominant factor (36.9 per cent) followed by economic problems (25 per cent) and a combination of both early marriage and economic problems (24.2 per cent) that prevented the use of educational facilities by the respondents. Among Muslims, 9.7 per cent opined that their parents didn't allow them to study and only respondents who belonged to the religious group of Muslims pointed out this reason.

**Table 5.15****Reasons for Not Making Use of Educational Facilities**

| Sl. No. | Reason                               | Religion      |                |              |               |
|---------|--------------------------------------|---------------|----------------|--------------|---------------|
|         |                                      | Muslim        | Hindu          | Christian    | Total         |
| 1.      | Economic problems                    | 45<br>(23.0%) | 18<br>(37.5%)  | --           | 63<br>(25%)   |
| 2.      | Early Marriage                       | 75<br>(38.3%) | 12<br>(25.01%) | 6<br>(75%)   | 93<br>(36%)   |
| 3.      | Both 1 and 2                         | 48<br>(24.5%) | 11<br>(22.9%)  | 2<br>(25.0%) | 61<br>(24.2%) |
| 4.      | Parents doesn't allow                | 19<br>(9.7%)  | --             | --           | 19<br>(7.5%)  |
| 5.      | Distance and Transportation Problem  | 1<br>(0.5%)   | 3<br>(6.3%)    | --           | 4<br>(1.6%)   |
| 6.      | None to help in household activities | 1<br>(0.5%)   | 2<br>(4.2%)    | --           | 3<br>(1.2%)   |
| 7.      | Any other                            | 7<br>(3.6%)   | 2<br>(4.2%)    | --           | 9<br>(3.6%)   |
|         | Total                                | 196<br>(100%) | 48<br>(100%)   | 8<br>(100%)  | 252<br>(100%) |

Source: Primary Data.

Although, 82 per cent of respondents replied that they couldn't make use of the educational facilities that were available to them at their schooling age, 75.9 per cent said that they are making use of the educational facilities available for their children. Thus our respondents are trying to educate their children, and there by ensuring that their child gets an opportunity to get educated, which once they lost in their schooling ages. Those respondents who are not making use of educational facilities for their children attributed it mainly due to economic problems (54.1 per cent), early marriage (18.9 per cent) and economic problems and early marriage together (10.8 per cent). Thus, it is early marriage, which is

the most important factor that prevented our respondent's education, while it is economic problems that prevented the best use of educational facilities for their children.

Respondents were asked whether Muslims are educationally backward when compared with other religious groups. Majority of the respondents (65.8 per cent) replied that there is educational backwardness among Muslims. The reasons given by respondents for educational backwardness among Muslims are shown in Table 5.16. They are religious orthodoxy (12.9 per cent) lack of social awareness (15.3 per cent), attitudinal problems (20.3 per cent), and early marriage (20.8 per cent). A combination of more than one factor is also pointed out as reason for educational backwardness among Muslims. From the Table, it is seen that early marriage and attitudinal problems are the most important individual factors cited by our respondents for educational backwardness among Muslims.

**Table 5.16****Reasons Cited for Educational Backwardness among Muslims**

| <b>Sl. No.</b> | <b>Reasons</b>           | <b>Total</b>                |
|----------------|--------------------------|-----------------------------|
| 1.             | Religious orthodoxy      | 26<br>(12.9%)               |
| 2.             | Lack of social awareness | 31<br>(15.3%)               |
| 3.             | Attitudinal problems     | 41<br>(20.3%)               |
| 4.             | Early Marriage           | 42<br>(20.8%)               |
| 5.             | Both 1 and 2             | 26<br>(12.9%)               |
| 6.             | Both 2 and 4             | 26<br>(12.9%)               |
|                | <b>Total</b>             | <b>202</b><br><b>(100%)</b> |

Source: Primary Data.

Suggestions for improving the educational and social status of Muslims given by our respondents are shown in Table 5.17. Among those who said that Muslims are educationally backward, majority (42.6 per cent) points to the need for giving proper awareness regarding the importance of education. The need for changing the attitude of the people towards education, together with giving proper awareness regarding the importance of education was suggested by 35.6 per cent of the respondents. Only 1.5 per cent pointed the need for reservation while improvement in the means of transportation and communication (8.4 per cent), increase in the number of educational institutions (5.9 per cent) and change in the attitude of the people towards education (5.9 per cent) were suggested as ways to reduce the educational backwardness among Muslims.

**Table 5.17****Suggestions to Improve Educational Backwardness Among Muslims**

| Sl. No. | Suggestions  | Total         |
|---------|--|---------------|
| 1       | Giving proper awareness regarding the importance of education. | 86<br>(42.6%) |
| 2       | Increase in the number of educational institutions             | 12<br>(5.9%)  |
| 3       | Reservation  | 3<br>(1.5%)   |
| 4       | Improve the means of transportation                            | 17<br>(8.4%)  |
| 5       | Change the attitude of the people towards education            | 12<br>(5.9%)  |
| 6       | Both 1 and 5   | 72<br>(35.6%) |
| 7       | Total  | 202<br>(100%) |

Source: Primary Data.

Response was gathered on whether women should be given higher education in all branches of knowledge on a par with men. Of all the respondents 50 per cent supported the argument that women must be given education on a par with men in all fields of knowledge. Reasons were asked to the respondents who didn't support this argument. Table 5.18 shows that majority of the respondents considers males and females as not equal (65 per cent). A religious wise break-up also confirms that this argument is strong among all religions. Insecurity (12.2 per cent), problem of household management (10.6 per cent), incompetence (9.8 per cent) and others (2.4 per cent) are pointed as reasons for their argument that women need not be given education on a par with men in all fields of knowledge.

**Table 5.18**

**Reasons for Not Favouring  
Higher Education for Women on a Par with Men**

| Sl. No. | Reason                          | Religion        |                |               |                 |
|---------|---------------------------------|-----------------|----------------|---------------|-----------------|
|         |                                 | Muslim          | Hindu          | Christian     | Total           |
| 1       | Incompetence                    | 11<br>(10.7%)   | 1<br>(5.9%)    | --            | 12<br>(9.8%)    |
| 2       | Problem of household management | 11<br>(10.7%)   | 2<br>(11.8%)   | --            | 13<br>(10.6%)   |
| 3       | Insecurity                      | 13<br>(12.6%)   | 2<br>(11.8%)   | --            | 15<br>(12.2%)   |
| 4       | Males and females are not equal | 66<br>(64.1%)   | 11<br>(64.7%)  | 3<br>(100.0%) | 80<br>(65.0%)   |
| 5       | Any other                       | 2<br>(1.9%)     | 1<br>(5.9%)    | --            | 3<br>(2.4%)     |
| 6       | Total                           | 103<br>(100.0%) | 17<br>(100.0%) | 3<br>(100.0%) | 123<br>(100.0%) |

Source: Primary Data.

The attitude of family members in providing education for the respondent's children, especially for female children are given in Table 5.19. Among the family members of the respondents 52.4 per cent strongly agrees, 34.2 per cent agrees, 2.6 per cent strongly disagrees, 2.9 per cent disagrees and 7.8 per cent are indifferent in providing education to the respondent's children, especially for girls. The percentage of respondents who say that their family members strongly disagree, disagree and are indifferent taken together comes to 13.4 per cent of the total. This attitude is shocking in this most literate state of India. This attitude will certainly influence the educational attainment of members of the family.

**Table 5.19**

**Attitude of Family Members in Educating Respondent's Children**

| <b>Opinion</b>    | <b>Frequency</b> | <b>Percent</b> |
|-------------------|------------------|----------------|
| Strongly agrees   | 161              | 52.4           |
| Agrees            | 105              | 34.2           |
| Strongly disagree | 8                | 2.6            |
| Disagree          | 9                | 2.9            |
| Indifferent       | 24               | 7.8            |
| Total             | 307              | 100.0          |

Source: Primary Data.

Respondents were asked about the desired level of education for both boys and girls. Table 5.20 shows the desired level of education for boys. Majority of the respondents expressed the view that they have the desire to educate their boys up to the desire of their child (69.4 per cent). This is true in the case of all religions. The percentage of respondents who have the desire to educate their boy's upto degree is a high among Christians while those who desire to educate till SSLC is the highest among Muslims. The educational aspiration of non-Muslims is higher than Muslims. Among Muslims, 1.8 per cent did not give any opinion regarding the desired level of education for their boys.

**Table 5.20****Desired Level of Education for Boys**

| Sl. No. | Desired level of Education   | Religion       |               |              |                |
|---------|------------------------------|----------------|---------------|--------------|----------------|
|         |                              | Muslim         | Hindu         | Christian    | Total          |
| 1       | 5 to 7 years of schooling    | 8<br>(3.5%)    | 3<br>(4.5%)   | 1<br>(7.7%)  | 12<br>(3.9%)   |
| 2       | Up to SSLC                   | 32<br>(14.1%)  | 6<br>(9.0%)   | --           | 38<br>(12.4%)  |
| 3       | Up to PDC                    | 11<br>(4.8%)   | 4<br>(6.0%)   | --           | 15<br>(4.9%)   |
| 4       | Upto Degree                  | 16<br>(7.0%)   | 6<br>(7.5%)   | 4<br>(30.8%) | 25<br>(8.1%)   |
| 5       | Upto the desire of the child | 156<br>(68.7%) | 49<br>(73.1%) | 8<br>(61.5%) | 213<br>(69.4%) |
| 6       | No opinion                   | 4<br>(1.8%)    | --            | --           | 4<br>(1.3%)    |
| 7       | Total                        | 227<br>(100%)  | 67<br>(100%)  | 13<br>(100%) | 307<br>(100%)  |

Source: Primary Data.

Table 5.21 gives the respondent's desired level of education for their girls. Majority of the respondents desires to educate their girl's upto the desire of their children (41.36 per cent) and this is true in the case of all religions. Thus, majority of the respondents prefer to educate their boys (Table 5.20) and girls upto the desire of their children. But the respondents who prefer to educate their boy's upto the desire of their children is certainly high (69.4 per cent) when compared with the respondents who prefer to educate their girl's upto the desire of their child (41.36 per cent). The percentage of respondents who have the desire to educate their girl's upto the desire of the child is found low among the religious group of Muslims (37 per cent). The respondents who desires to educate their girls till the commencement of marriage comes to about 23.12 per

cent. The percentage of respondents who are willing to educate their girl's upto the marriage is also the highest among Muslims (28.63 per cent). The percentage of respondents who are willing to educate their girls upto degree and post-graduation is highest among Christians while this per cent is lowest among Muslims. Thus, the educational aspirations for both boys and girls are found to be low among Muslims when compared with non-Muslims. This low educational aspiration especially for girls are often mixed with a number of socio-economic factors like low parental motivation, early marriage and dowry and, this necessitates and in-depth study of the problem.

**Table 5.21**  
**Desired Level of Education for Girls**

| Sl. No. | Desired level of Education   | Religion       |                |               |                 |
|---------|------------------------------|----------------|----------------|---------------|-----------------|
|         |                              | Muslim         | Hindu          | Christian     | Total           |
| 1       | No opinion                   | 7<br>(3.08%)   | 4<br>(5.97%)   | 1<br>(7.69%)  | 12<br>(3.9%)    |
| 2       | Up to SSLC                   | 38<br>(16.74%) | 7<br>(10.44%)  | --            | 45<br>(14.65%)  |
| 3       | Up to PDC                    | 17<br>(7.48%)  | 4<br>(5.97%)   | 1<br>(7.69%)  | 22<br>(7.16%)   |
| 4       | Upto Degree                  | 12<br>(5.28%)  | 5<br>(7.46%)   | 4<br>(30.76%) | 21<br>(6.84%)   |
| 5       | Upto Post-graduation         | 4<br>(1.76%)   | 4<br>(5.97%)   | 1<br>(7.69%)  | 9<br>(2.93%)    |
| 6       | Upto the desire of the child | 84<br>(37.0%)  | 37<br>(55.22%) | 6<br>(46.15)  | 127<br>(41.36%) |
| 7       | Upto the marriage            | 65<br>(28.63%) | 6<br>(8.95%)   | --            | 71<br>(23.12%)  |
| 8       | Total                        | 227<br>(100%)  | 67<br>(100%)   | 13<br>(100%)  | 307<br>(100%)   |

Source: Primary Data.

To understand the reading habit and general awareness, respondents were asked whether they read newspapers or magazines and listen to radio or television at least once a week. Of all the respondents 74.3 per cent use to read

newspapers or magazines and 73.3 per cent listened to radio or television at least once in a week. The percentage of respondents who go to cinema theatre to see movie at least once in a month is 19.5 per cent of the total samples.

## **5.7 DETAILS ON EMPLOYMENT**

The relationship between education and income is also variously conceived according to the assumptions about labour market process. Under wage competition, the relationship is linear and market adjustments instantaneous. Education and its expansion raise productivity and distribute them equitably (Lindbeck, 1971<sup>1</sup> and Ahluwalia, 1974<sup>2</sup>). The observed positive relationship between education and earnings, a derivative of the 'job-accessibility' paradigm is perhaps the most convincing explanation for the demand for education.

Women's work is widely seen as an important component of female agency, empowering women in society. Women's work plays a significant role in reducing gender inequality and is also seen to affect levels of fertility and child mortality. This transmission mechanism becomes easier when women are educated and when they are exposed to mass media. Labour force participation not only gives women an opportunity to earn income, but also exposes them to the outside world and to the authority structures and network other than kin-based ones.

In a developing country such as India, however, where women's work-force participation is often motivated by poverty, these benefits are likely to be mediated by the social context of women's work and their total work burden. In addition, the empowering effects of employment for women are likely to depend

on their occupation, the continuity of their work force participation and whether they earn income. It is generally expected that women who work at a regular job, who earn money and who perceive that their contribution is a substantial part of total family earnings, are more likely to be empowered than other employed and unemployed women.

The National Population Policy adopted by the Government of India in 2000, explicitly recognizes the importance of women's paid employment in achieving the goal of population stabilization in India and also specific measures to encourage paid employment and self-employment of women. As per NFHS-2 reports<sup>3</sup>, women's employment is much lower in Kerala (39 per cent) during the 12 months preceding the survey, when compared with the rest of the Indian states. Among the districts of Kerala, work participation for both sexes is lowest in the district of Malappuram (Males 42.8 per cent; Females 6.6 per cent) as per the 2001 census. As employment influences fertility, a look into the employment details of females is attempted here.

In our samples, only 7.16 per cent participates in one or other form of economic activities and this is almost same as the work participation rate for females (6.6 per cent) in Malappuram given in 2001 census report. A religious wise break up of the employed respondents shows that 40.9 per cent are Hindus, 36.4 per cent are Muslims and 22.7 per cent are Christians. A rural-urban breakup of the employed respondents by the place of their residence shows that it is 68.2 per cent in rural areas and 31.8 per cent in urban areas.

Among the religious groups, the percentage of respondents who go for job is high among Christians (38.46 per cent) followed by Hindus (13.43 per cent) and it is the lowest among Muslims (3.52 per cent). Type of employment by

religion is given in Table 5.22. The table shows that all the employed samples belonging to Christianity are teachers and the percentage of teachers among Hindus and Muslims are of the order 55.6 per cent and 37.5 per cent. The proportion of respondents who comes in the category coolie is seen only among Muslims.

**Table 5.22**  
**Type of Employment by Religion**

| Type of Employment | Religion      |               |               |                |
|--------------------|---------------|---------------|---------------|----------------|
|                    | Muslim        | Hindu         | Christia<br>n | Total          |
| Teacher            | 3<br>(37.5%)  | 5<br>(55.6%)  | 5<br>(100.0%) | 13<br>(59.1%)  |
| Last Grade         | 1<br>(12.5%)  | 1<br>(11.1%)  | --            | 2<br>(9.1%)    |
| Coolie             | 3<br>(37.5%)  | --            | --            | 3<br>(13.6%)   |
| Others             | 1<br>(12.5%)  | 3<br>(33.3%)  | --            | 4<br>(18.2%)   |
| Total              | 8<br>(100.0%) | 9<br>(100.0%) | 5<br>(100.0%) | 22<br>(100.0%) |

Source: Primary Data.

Sector in which the respondents work by religion is given in Table 5.23. The percentage of respondents working in the Government sector is highest among Christians (60.0 per cent) and lowest among Muslims (37.5 per cent). The percentage of respondents who work in private sector is the highest among Hindus (44.4 per cent) followed by Christians (40 per cent). The percentage of respondents who are self-employed is seen only among Muslims. Among Muslims who are employed or go for work, 37.5 per cent are self-employed. The percentage of respondents who work in government sector is high in urban areas

(71.4 per cent) and those employed in private sector is high in rural areas (46.7 per cent). The percentage of employed Muslims working in Government and Private sectors is comparatively low when compared with other religious groups.

**Table 5.23**  
**Sector of Work by Religion**

| Sector of Work | Religion      |               |               |                |
|----------------|---------------|---------------|---------------|----------------|
|                | Muslim        | Hindu         | Christian     | Total          |
| Government     | 3<br>(37.5%)  | 5<br>(55.6%)  | 3<br>(60.0%)  | 11<br>(50.0%)  |
| Private        | 2<br>(25.0%)  | 4<br>(44.4%)  | 2<br>(40.0%)  | 8<br>(36.4%)   |
| Self employed  | 3<br>(37.5%)  | --            | --            | 3<br>(13.6%)   |
| Total          | 8<br>(100.0%) | 9<br>(100.0%) | 5<br>(100.0%) | 22<br>(100.0%) |

Source: Primary Data.

Nature of the present job by religion is given in Table 5.24. It shows that 54.5 per cent of the employed females are permanently employed, 22.7 per cent are temporarily employed, and the rest are semi-permanent employees (22.7 per cent). The percentage of respondents who are permanently employed is high among Christians (80 per cent) followed by Hindus (66.7 per cent) and is the lowest among Muslims (25 per cent). The percentage of respondents who are employed on a temporary basis is also low among Muslims. Thus, permanent and temporary employment is low among Muslim women when compared with other religious groups. The percentage of respondents who are employed permanently and temporarily is found high in urban areas.

**Table 5.24****Nature of the Present Job by Religion**

| Nature of Job  | Religion      |               |               | Total          |
|----------------|---------------|---------------|---------------|----------------|
|                | Muslim        | Hindu         | Christian     |                |
| Permanent      | 2<br>(25.0%)  | 6<br>(66.7%)  | 4<br>(80.0%)  | 12<br>(54.5%)  |
| Temporary      | 1<br>(12.5%)  | 3<br>(33.3%)  | 1<br>(20.0%)  | 5<br>(22.7%)   |
| Semi-permanent | 5<br>(62.5%)  | --            | --            | 5<br>(22.7%)   |
| Total          | 8<br>(100.0%) | 9<br>(100.0%) | 5<br>(100.0%) | 22<br>(100.0%) |

Source: Primary Data.

Respondents were asked the motivation behind their working (Table 5.25). Majority of the respondents who are working are motivated by economic necessity (59.1 per cent) while 27.3 per cent wanted to supplement family income and the rest (13.6 per cent) wanted to attain economic independence. For 87.5 per cent of Muslims and 60 per cent of Christians, economic necessity is the important motivation for working. A rural-urban break-up of employed respondents shows that majority of the employed from rural areas are motivated by economic necessity (73.3 per cent) whereas majority of the respondents from urban areas said that they want to supplement the family income (57.1 per cent).

**Table 5.25****Motivation for Working by Religion and Place of Residence**

| <b>Motivation</b>               | <b>Religion</b> |               |                       | <b>Place of Residence</b> |               | <b>Total</b>   |
|---------------------------------|-----------------|---------------|-----------------------|---------------------------|---------------|----------------|
|                                 | <b>Muslim</b>   | <b>Hindu</b>  | <b>Christia<br/>n</b> | <b>Rural</b>              | <b>Urban</b>  |                |
| Economic necessity              | 7<br>(87.5%)    | 3<br>(33.3%)  | 3<br>(60.0%)          | 11<br>(73.3%)             | 2<br>(28.6%)  | 13<br>(59.1%)  |
| To supplement family income     | 1<br>(12.5%)    | 3<br>(33.3%)  | 2<br>(40.0%)          | 2<br>(13.3%)              | 4<br>(57.1%)  | 6<br>(27.3%)   |
| To attain economic independence | --              | 3<br>(33.3%)  | --                    | 2<br>(13.3%)              | 1<br>(14.3%)  | 3<br>(13.6%)   |
| <b>Total</b>                    | 8<br>(100.0%)   | 9<br>(100.0%) | 5<br>(100.0%)         | 15<br>(100.0%)            | 7<br>(100.0%) | 22<br>(100.0%) |

Source: Primary Data.

Average monthly salary of the respondents - religion wise is given in Table 5.26. The average monthly salary of our respondents is Rs.4746.82. The religious-wise break up shows that the average monthly salary is high for Hindus (Rs.5636.67) followed by Christians (Rs.5420.0) and it is lowest for Muslims (Rs.3325.0). The difference between average monthly salary of Muslims and that of all employed females in our sample comes to Rs. 1461.82. This may be due to low educational attainment among Muslims and also on account of the nature and type of work in which they are engaged.

**Table 5.26****Average Monthly Salary by Religion**

(in Rupees)

| <b>Religion</b> | <b>Monthly Salary</b> |
|-----------------|-----------------------|
| Muslim          | 3325.00               |
| Hindu           | 5636.67               |
| Christian       | 5420.00               |
| Total           | 4746.82               |

Source: Computed from Primary Data.

Average monthly salary by place of residence and nature of family is given in Table 5.27. It shows that monthly salary is high in urban areas (Rs.6071.43) when compared with rural areas (Rs.4128.67). The average monthly salary is low among females of joint families (Rs.3433.33) when compared with nuclear families (Rs.5239.38).

**Table 5.27****Average Monthly Salary by Place of Residence and Nature of Family**

| <b>Place of Residence/ Nature of the family</b> | <b>Monthly Salary</b> |
|---|-----------------------|
| Rural area                                      | 4128.67               |
| Urban area                                      | 6071.43               |
| Joint family                                    | 3433.33               |
| Nuclear family                                  | 5239.38               |
| Total   | 4746.82               |

Source: Computed from Primary Data.

Education wise monthly salary is given in Table 5.28. It is seen that an increase in educational qualification leads to an increase in income from employment. Illiterates on an average, earns Rs.400 per month while degree

holders and professionals earn Rs.7400 and Rs.6903.33 per month. Thus, education is an important variable that helps to improve the economic status of a family.

**Table 5.28**  
**Average Monthly Salary - Education-wise**

| Level of Education | Monthly Salary |
|--------------------|----------------|
| Illiterate         | 400.00         |
| 5-7                | 2366.67        |
| 8-10               | 2833.33        |
| PDC                | 550.00         |
| Degree             | 7400.00        |
| Professional       | 6903.33        |
| Technical          | 3000.00        |
| Total              | 4746.82        |

Source: Computed from Primary Data.

## 5.8 CONCLUSION

From the above analysis, we can conclude that the attitude towards education is not progressive among Muslims when compared with the other religious groups. The percentage of respondents who are not interested in educating their children is the highest among Muslims (12.3 per cent). Of all the respondents, 21.2 per cent are not willing to educate their girls on a par with boys and this percentage is the highest among Muslims (23.8 per cent). However, respondents with higher levels of education expressed their willingness to educate their children of both sexes equally, thus promoting gender equality in educational attainment.

Of all our respondents, 49.5 per cent agreed that girl's education is more fruitful than boys. A religion wise break-up shows that majority of Hindus (57

per cent), Christians (62 per cent) and Muslims (51 per cent) supported this argument and 49 per cent of Muslims argued that girl's education is not more fruitful than boys. The percentage of respondents who are not ready to send their girl children for job is high among Muslims (54.1 per cent) and this was mainly because of the attitude that females need not go for job.

Respondents were asked whether higher education provides increased opportunity for employment. Among the respondents, 25.4 per cent expressed their view that higher education does not lead to increased employment opportunities and they cited backlog of unemployment (59 per cent) as the main reason for their argument. Among our respondents 77.5 per cent supports the view that education enhances economic benefits, but majority of the respondent does not consider employment as the prime benefit of education (63.8 per cent). Among those who do not consider employment as the prime benefit of education, majority of them (35.2 per cent) considers the creation of better socio-political awareness as the prime benefit of education.

Among our respondents, the percentage who feels that education is not an important factor affecting marriage is the highest among Muslims (57 per cent) while majority of the respondents among Christians (76.92 per cent) feels that education is an important factor affecting marriage. The percentage of respondents who couldn't make use of educational facilities as they desired due to early marriage is the highest among Muslims (38.3 per cent). Another 9.7 per cent among Muslims opined that their parents didn't allow them to study while this reason is not seen in the samples of other religious communities like Hindus and Christians. However, 75.9 per cent of the respondents said that they are making use of educational facilities available for their children.

Of all our respondents, 65.8 per cent supported the view that there is educational backwardness among Muslims when compared with other religious groups. Early marriage, attitudinal problems, religious orthodoxy etc. are cited as the main reasons for this educational backwardness. Respondents were asked to give suggestions to solve this educational backwardness and majority (42.6 per cent) pointed the need for giving proper awareness regarding the importance of education. It is also found that only 60 per cent of the respondents supported the argument that women must be given education on a par with men in all branches of knowledge. The attitude that males and females are not equal was given as the important argument by those who were against higher education for women in all fields on par with men.

The attitude of family members in the education of the respondent's children shows that 13.4 per cent either disagrees, strongly disagrees or are indifferent in their approach towards education of respondent's children. Respondents were asked the desired level of education for their children of both sexes. It is clearly seen that the percentage of respondents who have the desire to educate their boys upto the desire of the child (69.4 per cent) is certainly higher than for girls (41.36 per cent). This is true among all the religious groups. The percentage of respondents who desire to educate their girls till the commencement of marriage is high among Muslims (28.63 per cent).

Details on employment show that Muslims are lagging behind with regard to participation in employment activities. The percentage of females among Muslims who work in government and private sectors and on a permanent basis is also the lowest. The percentage of Muslims who works as teachers is also the lowest whereas those working as coolies are found high among Muslims. The

difference in the average monthly salary earned by a Muslim respondent is very low when compared with females of other religious groups. Education wise break-up of the respondents confirms the fact that monthly salary increases with an increase in the educational attainment of females. Thus the educational backwardness seen among the Muslim community affects its employment and earnings.

Attitudes on education influence the educational attainment and employment of people and their fertility decisions, as fertility and education are inversely related. As Muslims form the single largest majority in Malappuram, and as their attitude on education is less progressive when compared with other religious groups, it certainly influence the fertility behaviour of the people.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

**By  
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Thesis submitted to the University of Calicut  
for the Award of the Degree of

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## **FERTILITY AND FAMILY PLANNING**

- 6.1 *Fertility*
  - 6.1.1 *General Details on Marriage*
  - 6.1.2 *Age at Marriage*
  - 6.1.3 *Details on Pregnancy*
  - 6.1.4 *Still Births, Spontaneous Abortions and Induced Abortions*
  - 6.1.5 *Number of Pregnancies*
  - 6.1.6 *Sex Determination of the Unborn Child*
  - 6.1.7 *Desired and Undesired Pregnancies*
  - 6.1.8 *Size of the Family – Actual and Desired*
  - 6.1.9 *Son Preference*
  - 6.1.10 *Spacing between Children and Breastfeeding*
  - 6.1.11 *Expectations from Children*
  - 6.1.12 *Awareness on AIDs*
  - 6.1.13 *Infertility*
- 6.2 *Details on Family Planning and Contraceptive Use*
- 6.3 *Conclusion*

## CHAPTER - VI

### FERTILITY AND FAMILY PLANNING

The place and role of a child in a family and in society are different. A number of social, economic and cultural factors influence fertility. Fertility differentials by migratory status of the household head, rural-urban residential status, caste, religion, ethnic groups, occupational structure, activity status, parental education, and so on, have been studied by various scholars. Besides this, the advent of modern contraceptive technology has brought fertility decisions to be within parental choice. As a lot of factors affect fertility, the task of identifying the relevant factors becomes extremely difficult.

The two cardinal variables influencing population dynamics are birth rate and death rate. While death rate is considerably affected by specific medical factors and, is, not presumably dependent on economic variables, birth rate is considerably influenced by economic and social factors such as, income, standard of living, occupation, climate and traditions and the like.<sup>1</sup> So in the first section of this chapter we proceed to examine fertility with the socio-economic variables like education, place of residence, religion, nature of family, employment and income, wherever relevant. In the second section we are concerned with the use of contraceptive methods and the difference in its use among respondents with different religions, education level and so on.

#### 6.1 FERTILITY

Fertility is closely related to birth. There can be several births to a couple. The couple can give birth to any number of children as long as it has potentiality to give birth. As more children are born in a family, less shall be the affection for

each child and less shall be the desire of the parents to have children. Desire for children increases when the couple finds it difficult to have children, though a number of socio-economic factors affect it. Moreover, the reproduction capacity of couples is biologically limited and childbirth, and hence fertility can take place only during a limited period. After that stage, there can be no childbirth, since there will be no fertility. As it is women who give birth and whose fertility is more certain (15 to 45 years of age) than men, studies on fertility concentrates on reproductive behaviour of females.

Our samples consist of 307 ever-married females, in the study of fertility behaviour of Malappuram district. For the purpose of analysing fertility behaviour among our samples, we concentrate on various aspects related to fertility like general details on marriage, pregnancy, size of family - desired and actual, son preference, sex composition of children, breast feeding, awareness on sexually transmitted diseases like AIDS etc. The relative influence of education, religion, place of residence, employment and income on these variables are also considered.

### **6.1.1 General Details on Marriage**

Marriage is the stage to which demographers pay their considerable attention. Marriage may be defined as the legal union of persons of opposite sex. The legality of such a union may be established by civil, religious or other means as recognized by law of each country, and irrespective of the type of marriage, each should be reported for vital statistics purpose. The rituals related with marriage differ among different religious groups and societies, and in some societies like India, marriage is considered as a religious institution, whereas in many European countries it is considered only a friendship of convenience. In

almost all societies, marriage among the near blood relatives like sisters and brothers is a taboo.

Marriages are of different types. In some societies when husband of woman dies, the widow is married to the brother of the deceased husband. It is called Lavirate marriage. Similarly when the wife dies the husband is married to the sister of the deceased. It is called sorarate marriage. When a wife is allowed to have more than one husband, it is called polyandry, where as when a man is allowed to have more than one wife, we call it polygamy. Among the types of marriages mentioned, polygamy is seen among different religious groups in India, most commonly among Muslims.

Marriage rate or nupitality is calculated in three different ways, namely the rate in which an attempt is made to find out and calculate about the marriage of the bachelors, then is calculated the rate of remarriage in which an account is kept about second, third and fourth marriage, etc. Then, the rate at which wife has the first, whereas the husband has the second, third or fourth marriage is calculated. Lastly, the marriage where the husband can have first whereas the wife can have second, third or fourth marriage and so on, is calculated.

#### **6.1.1.1 Marriage, Divorce, Current Staying Status and Polygamy**

Among our respondents 95.8 per cent are married only once and the percentage of respondents who are married more than once is the highest among Muslims (5.3 per cent) while none belonging to the Christian community married more than once. The percentage of respondent's whose first marriage dissolved is also high among Muslims (6.6 per cent) followed by Hindus (3.0 per cent). Harassment by in laws (31.6 per cent) was pointed as the main reason for

dissolving marriage by both Hindus and Muslims. Rural-urban break up of population shows that harassment by in-laws is the important reason in rural areas (37.5 per cent) for dissolving marriage while dowry, wife beating and physical and mental illness of either husband or wife are equally important reasons in urban areas. Among our respondents whose first marriage dissolved, only 78 per cent were interested in divorce. Parents of the respondents took initiative in divorce in those cases where respondent was not interested. The percentage of remarriage among our divorced samples is 100 per cent. That is, 4.2 per cent of samples that got divorced were married again.

Current staying status with the husband is shown in Table 6.1. The percentage of respondents who are currently living with their husband is 65.8 per cent for all the religions taken together. The husbands of the rest of the samples are working as migrants, gone for job within the country, dead, separated or have sought divorce from the respondent. The percentage of respondents who are currently living with their husband is highest among Hindus (89.6 per cent) followed by Christians (84.6 per cent) and it is lowest among Muslims (57.7 per cent). This is on account of the relatively high migration among Muslims. The percentage of husbands gone abroad is highest among Muslims (30.8 per cent). Respondents who are separated (0.4 per cent) and widowed (6.2 per cent) are also high among Muslims. Of our respondent's husband's, 23.5 per cent have gone abroad and 3.3 per cent have gone for job with in the country. Among those gone abroad, majority have gone to Middle East countries (86.6 per cent).

**Table 6.1****Current Staying Status with Husband - Religion-wise**

| Current Staying Status | Religion       |               |               | Total          |
|------------------------|----------------|---------------|---------------|----------------|
|                        | Muslim         | Hindu         | Christian     |                |
| Living Together        | 131<br>(57.7%) | 60<br>(89.6%) | 11<br>(84.6%) | 202<br>(65.8%) |
| Gone Abroad            | 70<br>(30.8%)  | 1<br>(1.5%)   | 1<br>(7.7%)   | 72<br>(23.5%)  |
| Gone for job           | 8<br>(3.5%)    | 1<br>(1.5%)   | 1<br>(7.7%)   | 10<br>(3.3%)   |
| Separated              | 1<br>(0.4%)    | 1<br>(1.5%)   | --            | 2<br>(0.7%)    |
| Divorced               | 3<br>(1.3%)    | --            | --            | 3<br>(1.0%)    |
| Widowed                | 14<br>(6.2%)   | 4<br>(6.0%)   | --            | 18<br>(5.9%)   |
| Total                  | 227<br>(100%)  | 67<br>(100%)  | 13<br>(100%)  | 307<br>(100%)  |

Source: Primary Data.

Among the respondents whose husbands are abroad, majority (83.3 per cent) of them agreed that their husband's migration has influenced their family favourably. Among our respondent's whose husbands are abroad 82 per cent agreed that their husband's migration has helped in increasing their family income and in improving their standard of living. Unfortunately, the percentage of respondents who doesn't go for job in their husband's absence is very high (82 per cent) and a rural-urban break up shows that this percentage is high among the urban areas (93.8 per cent) when compared with rural areas, 77 per cent. Among the respondents who did not go for job in their husband's absence attributed it mainly due to lack of interest and fear of social blame (40 per cent) while 27 per cent revealed that their husbands are not interested, another 20 per cent attributed it due to lack of financial difficulty and 13.3 per cent gave same other reasons for not working. In their husband's absence, 42 per cent carried on their household

activities themselves, 33 per cent sought the help of relatives and 25 per cent carried on household activities themselves and with the help of relatives. This is true in the case of rural-urban classification also. In joint families, the role of relatives is higher (52.9 per cent).

Among our respondent's husbands, 8 per cent on an average, have more than one wife. This is shown in Table 6.2. The percentage of respondent's husbands having more than one wife is highest among Muslims (10 per cent) followed by Hindus (3.2 per cent) and it is nil among Christians. A rural-urban break-up of respondent's husbands having more than one wives shows that it is high in rural areas (9.5 per cent) when compared with urban areas (2.9 per cent). This percentage is also high among nuclear families (9.2 per cent) when compared with joint families. The husbands of respondents who have more than two wives is seen only among the Muslims (1.32 per cent). It is also seen that the number of children in other wives for the respondent's husband ranges from one to five among Muslims. It is seen that an increase in the level of education is generally associated with one marriage and fewer number of children. From our study also, we can see that the practice of polygamy still exists and it is more common among Muslims when compared with the rest of the religious groups. Islam grants a conditional permission to marry upto four (Holy Qur'an; Surah IV, Verse No. 3), and this is often misunderstood and misinterpreted.

**Table 6.2****Number of Wives to the Respondent's Husband**

| Number of Wives | Religion       |               |              | Place of Residence |               | Nature of Family |                | Total         |
|-----------------|----------------|---------------|--------------|--------------------|---------------|------------------|----------------|---------------|
|                 | Muslim         | Hindu         | Christian    | Rural              | Urban         | Joint            | Nuclear        |               |
| More than one   | 21<br>(9.9%)   | 2<br>(3.2%)   | --           | 21<br>(9.5%)       | 2<br>(2.9%)   | 6<br>(5.8%)      | 17<br>(9.2%)   | 23<br>(8%)    |
| One             | 192<br>(90.1%) | 61<br>(96.8%) | 13<br>(100%) | 200<br>(90.5%)     | 66<br>(97.1%) | 98<br>(94.2%)    | 168<br>(90.8%) | 266<br>(92%)  |
| Total           | 123<br>(100%)  | 63<br>(100%)  | 13<br>(100%) | 221<br>(100%)      | 68<br>(100%)  | 104<br>(100%)    | 185<br>(100%)  | 289<br>(100%) |

Source: Primary Data.

**6.1.2 Age at Marriage**

The role of age at marriage in postponing population growth and in affecting the number of birth and thereby fertility is highly significant. Even Malthus (1960)<sup>2</sup>, recommended that delayed marriage is a preventive measure for controlling the growth of population. The age at which males and females marry is not uniform across different regions. It may vary even within societies of the same area. A number of socio-economic factors like education, religion, family income, employment and the percentage of population residing in urban areas influence age at marriage.

Table 6.3 gives the Mean Age at First Marriage of the respondent by religion and education. The table shows that the Mean Age at Marriage is highest among Christians (20.85 years) followed by Hindus (19.94 years) while it is lowest among Muslims (16.09 years). The average Mean Age of Marriage for all the respondents is 17.13 years. It can be seen that, with increase in educational attainment of the respondents, the Mean Age at Marriage is also

increasing, among all religious groups. Thus there is a direct positive relationship between educational attainment and Mean Age at Marriage. Mean Age at marriage among Muslims is lower than that prescribed by the Marriage Act (18 years).

**Table 6.3**

**Mean Age at First Marriage of Females by Religion and Education**

| Level of Education | Mean Age at First Marriage |       |           | Total |
|--------------------|----------------------------|-------|-----------|-------|
|                    | Muslim                     | Hindu | Christian |       |
| Illiterate         | 14.72                      | 18.67 | --        | 15.71 |
| 1-4                | 15.72                      | 16.67 | --        | 15.91 |
| 5-7                | 15.70                      | 18.67 | --        | 16.05 |
| 8-10               | 16.31                      | 20.11 | 19.00     | 17.28 |
| PDC                | 17.82                      | 21.60 | 21.33     | 19.37 |
| Degree             | 19.25                      | 21.50 | 20.00     | 20.00 |
| Professional       | 17.00                      | 24.00 | 22.20     | 22.55 |
| Technical          | --                         | 24.50 | --        | 24.50 |
| Total              | 16.09                      | 19.94 | 20.85     | 17.13 |

Source: Computed from Primary Data.

Age at which the first marriage dissolved is 18.47 years for our samples and it is the lowest among Muslim (17.5 years) when compared with Hindus (23.67 years). This is given in Table 6.4. It can be seen that the age at dissolving marriage is very low among the respondents with low levels of education when compared with those who have higher education. Among Muslims, Mean Age at the time of dissolving Marriage is 17 years for illiterates, 15.5 years for those with 1 to 4 years of schooling, 15.88 years for those with 5 to 7 years of schooling, 20.33 years for those with 8 to 10 years of schooling and 27 years for those who completed pre-degree. On an average the mean age at dissolving first

marriage is 17.50 years for Muslims and 23.67 years for Hindus, and the average for both religions it is 18.47 years. Among Muslims, the mean Age at dissolving first marriage (17.5 years) is lower than the statutory minimum fixed by the government for first marriage (18 years).

**Table 6.4**

**Mean Age of Females at the Time of Dissolving First Marriage**

| Level of Education | Mean Age of Females at the time of dissolving first Marriage |       |       |
|--------------------|--|-------|-------|
|                    | Muslim   | Hindu | Total |
| Illiterate         | 17.00  | -     | 17.00 |
| 1-4                | 15.50  | -     | 15.50 |
| 5-7                | 15.88  | 23.00 | 18.67 |
| 8-10               | 20.33  | 18.00 | 19.75 |
| PDC                | 27.00  | -     | 27.00 |
| Professional       | -  | 30.00 | 30.00 |
| Total              | 17.50  | 23.67 | 13.47 |

Source: Computed from Primary Data.

Mean age at the time of current marriage of the respondents is given in Table 6.5. For Muslims, Hindus and Christians, mean age at current marriage is 16.85, 20.13 and 21.23 years respectively. For all religions taken together, it is 17.75. Mean age at current marriage for all religious groups is also seen to increase with an increase in the level of education, though there are differences among different religions and educational categories.

**Table 6.5****Mean Age of Females at the Time of Current Marriage**

| Level of Education | Mean Age of Females at the Time of Current Marriage |       |           | Total |
|--------------------|---|-------|-----------|-------|
|                    | Muslim  | Hindu | Christian |       |
| Illiterate         | 17.39   | 18.50 | --        | 17.67 |
| 1-4                | 15.92   | 17.22 | --        | 16.18 |
| 5-7                | 16.99   | 18.00 | --        | 17.11 |
| 8-10               | 16.59   | 20.41 | 20.00     | 17.59 |
| PDC                | 18.45   | 21.60 | 21.33     | 19.74 |
| Degree             | 19.25   | 21.50 | 20.00     | 20.00 |
| Professional       | 17.00   | 25.40 | 22.40     | 23.27 |
| Technical          | --  | 24.50 | --        | 24.50 |
| Total              | 16.85   | 20.13 | 21.23     | 17.75 |

Source: Computed from Primary Data.

Break-up of samples on the basis of the year of their marriage and religion shows that mean age at marriage is increasing over the years, among all religious groups is shown in Table 6.6. The mean age at marriage of females who are married before 1970 is 15.25 years whereas it is 20 years for samples who are married after the year 2000. Mean age at marriage is 18.4 years for females married between 1990-2000. For Muslims, it increased from 14.08 years among the samples who are married before 1970 to 17 years among those married between 1990-2000 and to 19 years among those married in 2000 and after. Mean age at marriage of females is declining among Hindus and Christians. Thus, as time passes, age at marriage of females increases and this is mainly facilitated by increases in female education.

**Table 6.6****Mean age at Marriage by Year of Marriage**

| Year of Marriage | Mean Age at Marriage |       |           |       |
|------------------|----------------------|-------|-----------|-------|
|                  | Muslim               | Hindu | Christian | Total |
| Before 1970      | 14.08                | 17.06 | 18.33     | 15.25 |
| 1970 - 1980      | 15.80                | 19.71 | 20.50     | 16.77 |
| 1980 - 1990      | 16.31                | 20.71 | 20.67     | 17.17 |
| 1990 - 2000      | 17.00                | 20.68 | 23.25     | 18.40 |
| 2000 and after   | 19.00                | 25.50 | 20.00     | 20.00 |
| Total            | 16.09                | 19.94 | 20.85     | 17.13 |

Source: Computed from Primary Data.

Table 6.7 gives the mean age at the time of current of marriage of the respondent's husband. The mean age at the time of current marriage for husbands is the lowest among Muslims (24.82 years), while it is highest for Christians (28.62 years) followed by Hindus (28.31 years). The mean age at current marriage for all religious groups is 25.75 years. An increase in the educational levels of husbands is also associated with an increase in their mean age at marriage. Thus, education is an important factor influencing age at marriage of both males and females. Mean age at the time of first marriage of husband is 24.12 years for Muslims, 27.12 years for Hindus and 28.08 for Christians. For all religions taken together, it is 24.96 years.

**Table 6.7****Mean Age of Husband at the Time of Current Marriage**

| Level of Education | Mean Age of Husband at current Marriage |       |           | Total |
|--------------------|---|-------|-----------|-------|
|                    | Muslim                                  | Hindu | Christian |       |
| Illiterate         | 23.61                                   | 27.33 | --        | 24.54 |
| 1-4                | 24.42                                   | 28.00 | --        | 25.13 |
| 5-7                | 25.09                                   | 24.22 | --        | 24.99 |
| 8-10               | 24.56                                   | 29.07 | 27.75     | 25.71 |
| PDC                | 27.18                                   | 30.60 | 27.00     | 28.05 |
| Degree             | 26.75                                   | 29.50 | 27.00     | 27.62 |
| Professional       | 25.00                                   | 30.20 | 30.60     | 29.91 |
| Technical          | --                                      | 28.00 | --        | 28.00 |
| Total              | 24.82                                   | 28.31 | 28.62     | 25.75 |

Source: Computed from Primary Data.

**6.1.3 General Details on Pregnancy**

Only women can conceive and give birth to children and that too within a limited period and within certain limits. Reproductive span indicates the childbearing period of a woman. A woman becomes biologically capable of bearing a child with the onset of menstruation and her childbearing capacity comes to an end with the onset of menopause. This is her reproductive span. Fertility continues till she reaches menopause. Fertility is different from fecundity. Fecundity is that stage in the life of girl by which she becomes capable of becoming a mother, no matter whether she actually becomes or not. Fecundity goes with the monthly course of the girl, while fertility is generally used to indicate the actual reproductive performance of a woman or group of women. Fertility is the standard of measuring the capacity of the women to

produce children. To study fertility behaviour, we are focusing on the number of pregnancies, and the number of surviving children.

Among our respondents, the percentage of respondents who have ever become pregnant is 94.8 per cent. There is not much difference in this regard among religious groups and in place of residence. Table 6.8 gives the mean age at first pregnancy by religion and education. On an average, the mean age at first pregnancy is 18.17 years for all religious groups. The mean age at first pregnancy is the highest among Christians (22.54 years) followed by Hindus (19.88 years) and Muslims (17.41 years). Among Hindus, the mean age at first pregnancy shows an increase with an increase in the level of education, but this trend is not visible among the respondents belonging to Muslim community. Thus we see that the age at marriage and pregnancy is the lowest among Muslims in Malappuram. However, it is common to see Muslim girls going to educational institutions after marriage, during pregnancy and after becoming a mother. This shows that things are changing. Though they are married off at an earlier age, many of the girls are not ready to quit their educational aspiration. This results in continuation of education even after marriage. However, this tendency may affect their educational attainment.

**Table 6.8****Mean Age at First Pregnancy by Religion and Education**

| Level of Education | Mean Age at First Pregnancy |       |           | Total |
|--------------------|-----------------------------|-------|-----------|-------|
|                    | Muslim                      | Hindu | Christian |       |
| Illiterate         | 18.50                       | 17.00 | --        | 18.13 |
| 1-4                | 17.39                       | 18.33 | --        | 17.58 |
| 5-7                | 17.64                       | 20.78 | --        | 18.01 |
| 8-10               | 17.13                       | 19.19 | 22.50     | 17.79 |
| PDC                | 16.27                       | 22.40 | 22.33     | 18.84 |
| Degree             | 17.75                       | 24.50 | 21.00     | 20.08 |
| Professional       | 18.00                       | 25.40 | 23.00     | 23.64 |
| Technical          | --                          | 21.50 | --        | 21.50 |
| Total              | 17.41                       | 19.88 | 22.54     | 18.17 |

Source: Computed from Primary Data.

Females need not get a surviving child from all of their pregnancies an account of the occurrence of stillbirths, spontaneous abortions and induced abortions. The percentage of respondents who have and doesn't have a surviving child from their first pregnancy is shown in Table 6.9. Among our respondents, only 67.1 per cent got a surviving child from their first pregnancy. The percentage of respondents who didn't get a surviving child is the highest among Christians (46.2 per cent) followed by Hindus (37.3 per cent) and Muslims (30.8 per cent). A rural-urban break up of population doesn't show much difference and the percentage of females who didn't get a surviving child from their first pregnancy in rural areas is 32.5 per cent while it is 34.2 per cent for the urban areas. The respondents who didn't get a surviving child from first pregnancy are high among respondents of joint families (40 per cent) when compared with that of nuclear families (28.6 per cent).

**Table 6.9****Distribution of Respondents on the Basis of whether they Got a Surviving Child from First Pregnancy**

| Response | Religion       |               |              | Place of Residence |               | Nature of Family |                | Total          |
|----------|----------------|---------------|--------------|--------------------|---------------|------------------|----------------|----------------|
|          | Muslim         | Hindu         | Christian    | Rural              | Urban         | Joint            | Nuclear        |                |
| No       | 70<br>(30.8%)  | 25<br>(37.3%) | 6<br>(46.2%) | 75<br>(32.5%)      | 26<br>(34.2%) | 46<br>(40%%)     | 55<br>(28.6%)  | 101<br>(32.9%) |
| Yes      | 157<br>(69.2%) | 42<br>(62.7%) | 7<br>(53.8%) | 156<br>(67.5%)     | 50<br>(65.8%) | 69<br>(60%)      | 137<br>(71.4%) | 206<br>(67.1%) |
| Total    | 227<br>(100%)  | 67<br>(100%)  | 13<br>(100%) | 231<br>(100%)      | 76<br>(100%)  | 115<br>(100%)    | 192<br>(100%)  | 307<br>(100%)  |

Source: Primary Data.

Among our respondents, 15.3 per cent lost atleast one of their children on account of various diseases. Among all religions, pre-mature birth (8.5%) cholera (8.5 per cent), jaundice (6.4 per cent), epilepsy (8.5 per cent), heart and kidney problems (8.5 per cent), improper development of internal organs (10.6 per cent), diarrhea (12.8 per cent), typhoid (4.3 per cent), measles (2.1 per cent), and other problems (29.8 per cent) are cited as causes of death of their children. Among Muslims, cholera, diarrhea and epilepsy are equally important causes for death of their children. Among Hindus, diarrhea was the major cause that resulted in the death of their children while among Christians, jaundice and measles are the diseases that caused the death of their children.

Table 6.10 shows the reasons for the death of the respondent's children. The table shows that the incidence of epidemic diseases like cholera, typhoid, diarrhea and jaundice as causes of death of children is seen only among those respondents with less than ten years of schooling. Improper development of

internal organs, pre-mature birth, epilepsy, heart and kidney problems and other problems are also cited by our respondents as causes of death of their children.

**Table 6.10**  
**Reasons for the Death of the Respondents' Children - Education-wise**

| Reasons                                 | Level of Education |                |                |               |                  | Total          |
|---|--------------------|----------------|----------------|---------------|------------------|----------------|
|   | Illiterate         | 1-4            | 5-7            | 8-10          | Degree and Above |                |
| Premature birth                         | --                 | 1<br>(9.1%)    | 1<br>(5.6%)    | 2<br>(25.0%)  | --               | 4<br>(8.5%)    |
| Cholera                                 | 1<br>(12.5%)       | 1<br>(9.1%)    | 1<br>(5.6%)    | 1<br>(12.5%)  | --               | 4<br>(8.5%)    |
| Typhoid                                 | --                 | 2<br>(18.2%)   | --             | --            | --               | 2<br>(4.3%)    |
| Diarrhea                                | 4<br>(50.0%)       | 1<br>(9.1%)    | 1<br>(5.6%)    | --            | --               | 6<br>(12.8%)   |
| Jaundice                                | --                 | 1<br>(9.1%)    | 1<br>(5.6%)    | 1<br>(12.5%)  | --               | 3<br>(6.4%)    |
| Measles                                 | --                 | --             | --             | --            | 1<br>(50.0%)     | 1<br>(2.1%)    |
| Improper development of internal organs | 1<br>(12.5%)       | 2<br>(18.2%)   | 2<br>(11.1%)   | --            | --               | 5<br>(10.6%)   |
| Epilepsy                                | 1<br>(12.5)        | --             | 3<br>(16.7%)   | --            | --               | 4<br>(8.5%)    |
| Heart/Kidney problem                    | --                 | --             | 3<br>(16.7%)   | 1<br>(12.5%)  | --               | 4<br>(8.5%)    |
| Any Other problem                       | 1<br>(12.5%)       | 3<br>(27.3%)   | 6<br>(33.3%)   | 3<br>(37.5%)  | 1<br>(50.0%)     | 14<br>(29.8%)  |
| Total                                   | 8<br>(100.0%)      | 11<br>(100.0%) | 18<br>(100.0%) | 8<br>(100.0%) | 2<br>(100.0%)    | 47<br>(100.0%) |

Source: Primary Data.

Among our respondents only 0.9 per cent were unaware of the treatment of disease, which caused the death of their children. It is seen that the respondent who are unaware of the treatment of the disease that caused the death of their children had only 1 to 4 years of schooling. Allopathic medicine was used by 80.9 per cent of the respondents, 2.5 per cent depended on homeopathy and 3.8 per cent depended on ayurvedic system of medicine. Another 12.7 per cent of

our respondents used a combination of atleast two system of medicines together at a time. It is the respondents from urban areas who make use of allopathic system of medicine more when compared with those residing in rural areas.

#### **6.1.4 Still Births, Spontaneous Abortions and Induced Abortions**

When one thinks of birth in demography, one includes in it both live birth and still birth. Live birth is somewhat simple in counting because in it, are counted all babies who take birth. But problem arises in the case of stillbirths. In it are included all those children who did not come out of the womb of the mother alive but the women remained pregnant for 28 weeks. Statistics on stillbirths are seldom available, because in most of the countries there is no system under which the compulsory registration of pregnancy is made. In underdeveloped or developing countries where either medical facilities are not available or living standard of the people is so poor that they cannot avail these facilities, the women even do not go to the hospital for abortions, which they manage at home. The difficulty much more arises in the case of unmarried girls, who some how become mothers. Though it is difficult to get data on stillbirths, it is essential in the study of demography, as birth includes stillbirths as well.

A girl may get pregnant before or after marriage but she may not give birth to a child due to abortion (induced or uninduced) with or without the consent of the parents. Such a death, which takes place before the child is born, is called foetal death. When it is voluntary, it is mostly in the form of abortion. If it is involuntary, it is called spontaneous abortion. Again there is problem about such types of death because in many countries there is no social or legal system under which premature birth should also be got registered with the competent authorities.

### 6.1.4.1 Incidence of Stillbirths, Spontaneous and Induced Abortions

Of all of our respondents 27.4 per cent experienced either still birth (SB); spontaneous abortion (SA) or induced abortion (IA). A religious wise break-up of our respondent's shows that the percentage of respondents who experienced SB, SA or IA is the highest among Christians (38.5 per cent) followed by Hindus (32.8 per cent) and it is the lowest among Muslims (25.1 per cent). The percentage of respondents who experienced, SB, SA or IA is slightly higher in urban areas (28.9 per cent) when compared with rural areas (26.8 per cent). It is also seen that the percentage of respondents who had SA, SB or IA is higher among the respondents of nuclear families (32.8 per cent) when compared with the respondents of joint families (18.3 per cent).

There is not much difference between the employed and unemployed respondents regarding the occurrence of SB, SA or IA. Among our respondents, an increase in the level of education is associated with a decline in the incidence of SA, SB and IA, with the exception of the category professionals. This is given in Table 6.11.

**Table 6.11**  
**Occurrence of Stillbirths,**  
**Spontaneous and Induced Abortions – Education-wise**

| Occurrence of SB/SA/ IA | Illiterate     | 1-4            | 5-7            | 8-10            | PDC            | Degree         | Professional   | Technical     | Total           |
|-------------------------|----------------|----------------|----------------|-----------------|----------------|----------------|----------------|---------------|-----------------|
| None                    | 17<br>(70.8%)  | 32<br>(71.1%)  | 56<br>(73.7%)  | 84<br>(71.8%)   | 16<br>(84.6%)  | 11<br>(84.6%)  | 5<br>(45.5%)   | 2<br>(100.0%) | 223<br>(72.6%)  |
| SB/SA/ IA               | 7<br>(29.2%)   | 13<br>(28.9%)  | 20<br>(26.3%)  | 33<br>(28.2%)   | 3<br>(15.8%)   | 2<br>(15.4%)   | 6<br>(54.5%)   | --            | 84<br>(27.4%)   |
| Total                   | 24<br>(100.0%) | 45<br>(100.0%) | 76<br>(100.0%) | 117<br>(100.0%) | 19<br>(100.0%) | 13<br>(100.0%) | 11<br>(100.0%) | 2<br>(100.0%) | 307<br>(100.0%) |

Source: Primary Data.

Of all our respondents, only 5 per cent experienced stillbirths. Among our respondents who had stillbirths, 92.9 per cent experienced stillbirth once and 7.1 per cent experienced it twice. Two stillbirths were seen only among Muslims. Break-up of our respondents on the basis of nature of family show that the incidence of two stillbirth is seen only among joint families. Hard and tough living conditions (28.6 per cent) and high blood pressure (28.6 per cent) are cited as the most important reasons for stillbirths. Accidental slip was given as the reason for stillbirth by 14.3 per cent of the respondents who experienced stillbirths. Diabetics, delivery at home, premature delivery, and other reasons (7.1 per cent each) are pointed by the respondents as the reason for the occurrence of stillbirths. It is also seen that the incidence of stillbirth is lower among the respondents with higher levels of education. Among the females of joint families who had stillbirths, 50 per cent attributed it due to hard and tough living conditions, 25 per cent pointed it due to delivery at home and the rest gave some other reasons. Among the respondents of nuclear families, high blood pressure (40 per cent) is the most important reason for stillbirths.

The incidence of spontaneous abortions shows that 14 per cent of our respondents had spontaneous abortions. Among those who had spontaneous abortions, the percentage of respondents who had one, two and four spontaneous abortions comes to about 86 per cent, 11.6 per cent and 2.3 per cent respectively (Tale 6.12). A rural-urban break up of respondents who had spontaneous abortions shows that the incidence of two spontaneous abortions is high among our respondents in urban areas (27.3 per cent), whereas the incidence of one spontaneous abortion is high in rural areas (90.6 per cent). The percentage of respondents who had spontaneous abortion is high in nuclear families (77 per cent) when compared with joint families (23 per cent). Among our respondents

who had spontaneous abortions, 34.9 per cent attributed it to hard and tough living conditions 20.9 per cent gave frequent deliveries as reasons for spontaneous abortions and the rest pointed to some other reasons including health problems and the problem of household management.

**Table 6.12**  
**Number of Spontaneous**  
**Abortions by Place of Residence and Nature of Family**

| Number of Spontaneous Abortions | Place of Residence |                | Nature of the family |                | Total          |
|---------------------------------|--------------------|----------------|----------------------|----------------|----------------|
|                                 | Rural              | Urban          | Joint                | Nuclear        |                |
| 1                               | 29<br>(90.6%)      | 8<br>(72.7%)   | 7<br>(70.0%)         | 30<br>(90.9%)  | 37<br>(86.0%)  |
| 2                               | 2<br>(6.3%)        | 3<br>(27.3%)   | 3<br>(30.0%)         | 2<br>(6.1%)    | 5<br>(11.6%)   |
| 4                               | 1<br>(3.1%)        | --             | --                   | 1<br>(3.0%)    | 1<br>(2.3%)    |
| Total                           | 32<br>(100%)       | 11<br>(100.0%) | 10<br>(100.0%)       | 33<br>(100.0%) | 43<br>(100.0%) |

Source: Primary Data.

Among our respondents 10.75 per cent had induced abortions (Table 6.13). Among those respondents who had induced abortions, 97 per cent had it once and 3 per cent had it twice. A religious wise break-up of respondents shows that the percentage of respondents who had induced abortions is 9.69 per cent among Muslims, 13.43 per cent among Hindus and 15.38 per cent among Christians. Induced abortions are seen among all educational categories. Majority of the respondents who had induced abortions responded that they do not want child now (60.6 per cent) as the reason for induced abortions. The second important reason pointed by the respondents was the desire for spacing (12.1 per cent) between children.

**Table 6.13****Incidence of Induced Abortions – Religion Wise**

| <b>Incidence of Induced abortions</b> | <b>Muslims</b>  | <b>Hindu</b>   | <b>Christian</b> | <b>Total</b>   |
|---------------------------------------|-----------------|----------------|------------------|----------------|
| None                                  | 205<br>(90.30%) | 58<br>(85.56%) | 11<br>(84.61%)   | 274<br>989.25% |
| Induced abortion                      | 22<br>(9.69%)   | 9<br>(13.43%)  | 2<br>(15.38%)    | 33<br>(10.75%) |
| Total                                 | 227<br>(100%)   | 67<br>(100%)   | 13<br>(100%)     | 307<br>(100%)  |

Source: Primary Data.

**6.1.5 Number of Pregnancies**

Total number of pregnancies experienced by our respondents by religion is given in Table 6.14. Among our respondents, 6.8 per cent have not become pregnant and the respondents who have never become pregnant is high among Hindus (11.9%) while all respondents belonging to Christianity have become at least once pregnant. Among the samples that have not yet become pregnant, 66 per cent have completed five and more years after marriage. The percentage of respondents who have one (15.4 per cent) and two (38.5 per cent) pregnancies is highest among Christians, establishing the fact that the number of pregnancies and hence, the size of family is small among Christians when compared with other religions. The percentage of respondents who have three (25.6 per cent) four (21.6 per cent) five (11.9 per cent) and six (7.0 per cent) pregnancies is the highest among Muslims.

**Table 6.14**  
**Number of Pregnancies by Religion**

| Number of Pregnancies | Number of Pregnancies |                |                | Total           |
|-----------------------|-----------------------|----------------|----------------|-----------------|
|                       | Muslim                | Hindu          | Christian      |                 |
| 0                     | 13<br>(5.7%)          | 8<br>(11.9%)   | --             | 21<br>(6.8%)    |
| 1                     | 17<br>(7.5%)          | 7<br>(10.4%)   | 2<br>(15.4%)   | 26<br>(8.5%)    |
| 2                     | 29<br>(12.8%)         | 12<br>(17.9%)  | 5<br>(38.5%)   | 46<br>(15.0%)   |
| 3                     | 58<br>(25.6%)         | 17<br>(25.4%)  | 1<br>(7.7%)    | 76<br>(24.8%)   |
| 4                     | 49<br>(21.6%)         | 13<br>(19.4%)  | 2<br>(15.4%)   | 64<br>(20.8%)   |
| 5                     | 27<br>(11.9%)         | 3<br>(4.5%)    | 1<br>(7.7%)    | 31<br>(10.1%)   |
| 6                     | 16<br>(7.0%)          | 4<br>(6.0%)    | --             | 20<br>(6.5%)    |
| 7                     | 9<br>(4.0%)           | 2<br>(3.0%)    | 1<br>(7.7%)    | 12<br>(3.9%)    |
| 8 and above           | 9<br>(3.9%)           | 1<br>(1.5%)    | 1<br>(7.7%)    | 11<br>(3.6%)    |
| Total                 | 227<br>(100.0%)       | 67<br>(100.0%) | 13<br>(100.0%) | 307<br>(100.0%) |

Source: Primary Data.

A rural-urban break-up shows that the percentage of respondents who have not yet become pregnant is lowest in urban areas (2.6 per cent) when compared with rural areas (8.2 per cent). In the case of number of pregnancies, not much difference is seen among the respondents in rural and urban areas.

An education-wise break up of the respondents shows that the number of pregnancies is declining with an increase in the educational attainment. This is shown in Table 6.15. The table shows that the percentage of respondents who have become once pregnant is highest among degree holders (30.8 per cent) and

twice pregnant is highest among degree holders and professionals (36.4 per cent). The percentage of respondents who became pregnant three times is high among respondents who have 8-10 years of schooling, while 4 pregnancies is highest among respondents with 5-7 years of schooling. Respondents who had seven pregnancies is the highest among illiterates and the percentage of respondents who have eight and above number of pregnancies is the highest among respondents with 1-4 years of schooling (11 per cent) followed by illiterates (4.2 per cent). Respondents who have six and more number of pregnancies had low levels of education. Thus it is seen the number of pregnancies decline with an increase in education.

**Table 6.15**  
**Number of Pregnancies by Education**

| No. of Pregnancies | Illiterate   | 1-4           | 5-7           | 8-10          | PDC          | Degree       | Professional and Technical | Total         |
|--------------------|--------------|---------------|---------------|---------------|--------------|--------------|----------------------------|---------------|
| 0                  | --           | 3<br>(6.7%)   | 2<br>(2.6%)   | 1<br>(9.4%)   | 2<br>(10.5%) | 1<br>(7.7%)  | 2<br>(15.38%)              | 21<br>(6.8%)  |
| 1                  | 1<br>(4.2%)  | 3<br>(6.7%)   | 4<br>(5.3%)   | 8<br>(6.8%)   | 4<br>(21.1%) | 4<br>(30.8%) | 2<br>(15.38%)              | 20<br>(8.5%)  |
| 2                  | 2<br>(8.3%)  | 1<br>(2.2%)   | 7<br>(9.2%)   | 23<br>(19.7%) | 5<br>(26.3%) | 4<br>(30.8%) | 4<br>(30.76%)              | 46<br>(15.0%) |
| 3                  | 4<br>(16.7%) | 10<br>(22.2%) | 15<br>(19.7%) | 40<br>(34.2%) | 4<br>(21.1%) | 2<br>(15.4%) | 1<br>(7.6%)                | 76<br>(24.8%) |
| 4                  | 5<br>(20.8%) | 7<br>(15.6%)  | 21<br>(27.6%) | 23<br>(19.7)  | 4<br>(21.1%) | 1<br>(7.7%)  | 3<br>(23.07%)              | 64<br>(20.8%) |
| 5                  | 3<br>(12.5%) | 5<br>(11.1%)  | 12<br>(15.8%) | 11<br>(9.4%)  | --           | --           | --                         | 31<br>(10.1%) |
| 6                  | 5<br>(20.8)  | 7<br>(15.6%)  | 7<br>(9.2%)   | --            | --           | 1<br>(7.7%)  | --                         | 20<br>(6.5%)  |
| 7                  | 3<br>(12.5%) | 4<br>(8.9%)   | 4<br>(5.3%)   | --            | --           | --           | 1<br>(7.6%)                | 12<br>(3.9%)  |
| 8 and above        | 1<br>(4.2%)  | 5<br>(11.0%)  | 4<br>(5.3%)   | 1<br>(0.9%)   | --           | --           | --                         | 11<br>(3.6%)  |
| Total              | 24<br>(100%) | 45<br>(100%)  | 76<br>(100%)  | 117<br>(100%) | 19<br>(100%) | 13<br>(100%) | 13<br>(100%)               | 307<br>(100%) |

Source: Primary Data.

Mean number of pregnancies by religion, caste education, activity status and by place of residence is given in Tables 6.16, 6.17, 6.18 & 6.19 respectively. Table 6.16 gives religion-wise mean number of pregnancies and shows that it is the highest among Muslims (3.6) followed by Christians (3.31) and Hindus (2.94). A caste-wise breakup of respondents and their mean number of pregnancies is shown in Table 6.17. It shows that mean number of pregnancies is the highest among Other Backward Castes (3.53) and lowest among Other Eligible Castes (2.5) followed by Schedule Castes (2.89). Mean number of pregnancies is seen to decline with an increase in the respondent's educational attainment. This is shown in Table 6.18. For illiterates it is 4.63 where as for degree holders, it is 2.15. Mean number of pregnancies by activity status is shown in Table 6.19. For employed respondents it is 2.96 whereas for unemployed it is 3.49, showing that the average number of pregnancies and hence children for employed respondents is low when compared with unemployed females because there is an opportunity cost involved in rearing and bearing children in the case of employed ones. A rural-urban break-up of respondents and their mean number of pregnancies shows that it is high in urban areas (3.79) than in rural areas (3.33). This is also shown in Table 6.19.

**Table 6.16**

**Mean Number of Pregnancies by Religion**

| <b>Religion</b> | <b>Mean Number of Pregnancy</b> |
|-----------------|---------------------------------|
| Muslim          | 3.60                            |
| Hindu           | 2.94                            |
| Christian       | 3.31                            |
| Total           | 3.45                            |

Source: Computed from Primary Data

**Table 6.17****Mean number of Pregnancies -Caste wise**

| <b>Category</b> | <b>Mean number of Pregnancy</b> |
|-----------------|---------------------------------|
| SC              | 2.89                            |
| OBC             | 3.53                            |
| OEC             | 2.50                            |
| Others          | 3.16                            |
| Total           | 3.45                            |

Source: Computed from Primary Data

**Table 6.18****Mean number of Pregnancies – Education-wise**

| <b>Level of Education</b> | <b>Mean number of Pregnancy</b> |
|---------------------------|---------------------------------|
| Illiterate                | 4.63                            |
| 1-4                       | 4.53                            |
| 5-7                       | 4.11                            |
| 8-10                      | 2.81                            |
| PDC                       | 2.21                            |
| Degree                    | 2.15                            |
| Professional              | 2.91                            |
| Total                     | 3.45                            |

Source: Computed from Primary Data

**Table 6.19****Mean number of Pregnancies -  
by Activity Status and Place of Residence**

| <b>Activity Status/ Place of Residence</b> | <b>Mean number of Pregnancy</b> |
|--|---------------------------------|
| Employed                                   | 2.96                            |
| Unemployed                                 | 3.49                            |
| Rural                                      | 3.33                            |
| Urban                                      | 3.79                            |
| Total                                      | 3.45                            |

Source: Computed from Primary Data

There has been a decline in the number of pregnancies over the years. Mean number of pregnancies by year of marriage and religion is presented in Table 6.20. It shows that mean number of pregnancies which was 5.13 for those females who are married before 1970 declined to 2.53 among the samples married between 1990-2000 for all the respondents. Among Muslims, it declined substantially from 5.32 before 1970 to 2.78 between 1990-2000. Mean number of pregnancies among Hindus and Christians also declined over the period under consideration, showing that mean number of pregnancies is declining over the years, among all religious groups. Thus as times passes, age at marriage increase due to increase in female education and the risk of child death declines due to better education and awareness of mothers and on account of increased accessibility and availability of medical facilities. This ultimately reduces the incidence of pregnancies and hence the children ever born.

**Table 6.20**

**Mean Number of Pregnancies by Year of Marriage and Religion**

| Year of Marriage | Mean Number of Pregnancies |       |           |       |
|------------------|----------------------------|-------|-----------|-------|
|                  | Muslim                     | Hindu | Christian | Total |
| Before 1970      | 5.32                       | 4.67  | 5.00      | 5.13  |
| 1970 - 1980      | 4.34                       | 3.57  | 4.50      | 4.18  |
| 1980 - 1990      | 3.35                       | 2.76  | 2.67      | 3.23  |
| 1990 - 2000      | 2.78                       | 1.95  | 2.50      | 2.53  |
| 2000 and after   | 0.45                       | 0.00  | 1.00      | 0.43  |
| Total            | 3.64                       | 3.04  | 3.31      | 3.50  |

Source: Computed from Primary Data.

Among our respondents, 2 per cent are currently pregnant. Our respondents who are currently pregnant are 2.2 per cent of Muslims and 1.5 per cent among Hindus. Among the pregnant respondents, 16.7 per cent revealed

that they are currently pregnant because of the desire for boy child while desire for more children (50 per cent) and the strong belief that birth control is sin (33.3 per cent) are given as reasons for their current pregnancy. Break-up of respondents on the basis of nature of family shows that the percentage of respondents who are currently pregnant is high among joint families (3.5 per cent) when compared with nuclear families (1.0 per cent).

#### **6.1.6 Sex Determination of Unborn Child**

Response on sex-determination of the unborn child with the help of modern techniques like scanning shows that 7.2 per cent of our respondents determined the sex of atleast one of their child before its birth. The percentage of respondents who determine the sex of unborn child is relatively high among Christians (7.7 per cent) followed by Muslims (7.5 per cent). A rural-urban break-up of respondents shows that sex determination of children before birth is seen only among respondents in rural areas.

#### **6.1.7 Desired and Undesired Pregnancies**

Among our respondents 26.1 per cent said that none of their pregnancies were at the time they wished for. Among the rest of the respondents, some of their pregnancies were at the time they wished for and the rest, not at the time that they desired. A rural-urban break-up shows that only 6 per cent became pregnant at the time they didn't wish for in urban areas while it is 32 per cent in the case of rural areas. It is also seen that the number of pregnancies not at the time of the respondents desire is low among respondents with higher levels of education.

The percentage of respondents who terminated the pregnancies that they didn't wish for is found high among Christians (15.4 per cent) and Hindus (15.3 per cent) and it is lowest among Muslims (10.0 per cent). Also, the percentage who terminated their undesired pregnancies is high in rural areas (13.2 per cent) when compared with urban areas (6.8 per cent). This finding is in contrast to the notion that abortions are high in urban areas. The percentage of respondents who terminated their undesired pregnancies is found high in nuclear families (13.1 per cent) when compared with joint families (8.7 per cent). Few members in nuclear families make it difficult to rear more children and there is also the problem of pre-natal and postnatal care for mothers. But in joint families there will be elder members to assist couples in rearing children and in providing maternal care.

Respondents who didn't terminate their undesired pregnancies were asked the reasons for not doing it. Majority attributed it due to their religious beliefs (44.3 per cent), 35.2 per cent considered it as sin, and 17.4 per cent responded that they are afraid of abortion. Religious wise break-up of the reasons for not terminating undesired pregnancies is given in Table 6.21. A religious wise break up of respondents who didn't terminate their undesired pregnancies shows that majority of Muslims cited religious beliefs (46.4 per cent) whereas Hindus (40 per cent) and Christians (54.5 per cent) pointed that it is a sin to terminate their undesired pregnancies, as reasons for not terminating undesired pregnancies.

**Table 6.21****Reasons for Not Terminating Undesired Pregnancies - Religion-wise**

| Reason             | Religion        |                |                | Total           |
|--------------------|-----------------|----------------|----------------|-----------------|
|                    | Muslim          | Hindu          | Christian      |                 |
| Fear of abortion   | 35<br>(18.2%)   | 8<br>(16.0%)   | 1<br>(9.1%)    | 44<br>(17.4%)   |
| Religious belief   | 89<br>(46.4%)   | 19<br>(38.0%)  | 4<br>(36.4%)   | 112<br>(44.3%)  |
| Considers it a sin | 63<br>(32.8%)   | 20<br>(40.0%)  | 6<br>(54.5%)   | 89<br>(35.2%)   |
| Any other          | 5<br>(2.6%)     | 3<br>(6.0%)    | --             | 8<br>(6.8%)     |
| Total              | 192<br>(100.0%) | 50<br>(100.0%) | 11<br>(100.0%) | 253<br>(100.0%) |

Source: Primary Data.

Of the respondents who terminated unwanted pregnancies, were asked, who took initiative for the termination of pregnancies. The decision maker in the termination of pregnancies is given in Table 6.22. Among all religious groups, husbands of the respondents were decision makers in case of 21.2 per cent, 24.2 per cent of the respondents themselves decided and mother-in-law was the decision maker in the case of 33.3 per cent of the respondents, in termination of undesired pregnancies. Both husband and wife together decided to terminate their undesired pregnancies in 21.2 per cent of the cases. Among Muslims, Mother-in-law is the most important decision maker (40.9 per cent) while among Hindus; it is husband (33.3 per cent). Among Christians, own decision (50 per cent) and decision of both husband and wife (50 per cent each), resulted in termination of pregnancies.

**Table 6.22****Decision Maker in Termination of Undesired Pregnancies, Religion-wise**

| Sl. No. | Decision maker | Decision Maker in Termination of Undesired Pregnancies |               |               | Total          |
|---------|----------------|--|---------------|---------------|----------------|
|         |                | Muslim   | Hindu         | Christian     |                |
| 1       | Husband        | 4<br>(18.2%)   | 3<br>(33.3%)  | --            | 7<br>(21.2%)   |
| 2       | Own decision   | 5<br>(22.7%)   | 2<br>(22.2%)  | 1<br>(50.0%)  | 8<br>(24.2%)   |
| 3       | Mother in law  | 9<br>(40.9%)   | 2<br>(22.2%)  | --            | 11<br>(33.3%)  |
| 4       | Both 1 and 2   | 4<br>18.2%   | 2<br>(22.2%)  | 1<br>(50.0%)  | 7<br>(21.2%)   |
|         | Total          | 22<br>(100.0%)   | 9<br>(100.0%) | 2<br>(100.0%) | 33<br>(100.0%) |

Source: Primary Data.

**6.1.8 Size of the Family – Actual and Desired**

Though commonly from family size, we mean total number of persons of a family, yet in demography, it does not mean so. In demography it means total number of children, a woman or a couple has borne at a point of time. The completed family size indicates the total number of children borne by a woman up to the end of her reproductive span. Parental education, preference towards children, religious beliefs and attitudes, the need for old age security etc. are some factors which influences the size of the family.

**Table 6.23****Mean number of Children Ever Born, by Religion**

| <b>Religion</b> | <b>Total Boys</b> | <b>Total Girls</b> | <b>Total Children</b> | <b>Alive Boys</b> | <b>Alive Girls</b> | <b>Alive Children</b> | <b>Dead Boys</b> | <b>Dead Girls</b> | <b>Dead Children</b> |
|-----------------|-------------------|--------------------|-----------------------|-------------------|--------------------|-----------------------|------------------|-------------------|----------------------|
| Muslim          | 1.70              | 1.63               | 3.33                  | 1.60              | 1.52               | 3.12                  | 0.10             | 0.10              | 0.20                 |
| Hindu           | 1.37              | 1.27               | 2.64                  | 1.31              | 1.13               | 2.45                  | 0.06             | 0.13              | 0.19                 |
| Christian       | 1.15              | 1.38               | 2.54                  | 1.08              | 1.23               | 2.31                  | 0.08             | 0.15              | 0.23                 |
| Total           | 1.61              | 1.54               | 3.15                  | 1.52              | 1.42               | 2.94                  | 0.09             | 0.11              | 0.20                 |

Source: Computed from Primary Data.

Mean number of children ever born by religion is shown in Table 6.23. Among our respondents, who have ever given birth, the mean number of total children is 3.15 for all religions taken together and it is highest for Muslims (3.33) followed by Hindus (2.64) and it is the lowest among Christians (2.54). Mean number of total boys and total girls religion wise shows that it is higher for boys among Muslims (1.7) and Hindus (1.37) while the corresponding figure for girls for these religions is 1.63 and 1.27 respectively. In the same way, the mean number of alive boys is relatively high among Muslims (1.6) followed by Hindus (1.31). Among Christians, the mean number of girls is higher than that of boys. The mean number of dead children among all religions is 0.20. Mean number of dead girls is found to be higher than mean number of dead boys among the religious group of Hindus and Christians.

A rural urban break up of mean number of total children (Table 6.24) shows that it is high for both boys (1.66) and girls (1.75) in urban areas when compared with rural areas. On an average for both sexes, the mean number of children is 3.06 in rural areas and 3.41 in urban areas, and 3.15 for both the areas taken together. The mean number of alive children is also high in urban areas for

boys (1.58) and girls (1.59) when compared with rural areas. The mean number of dead children is also higher in urban areas (0.24) and it is 0.19 in rural areas. Thus we find that the mean number of children is high in urban areas of Malappuram district. Our study confirms the findings of the study conducted by Rajan and Aliyar (2003).<sup>3</sup> In their spatial study on fertility based on 2001 census, they found high fertility in the low lands around Malappuram City. From Table 6.19, we have already seen that the mean number of pregnancies is highest urban area among our samples.

**Table 6.24**

**Mean number of Children Ever Born, by Place of Residence**

| Place of Residence | Total Boys | Total Girls | Total Children | Alive Boys | Alive Girls | Alive Children | Dead Boys | Dead Girls | Dead Children |
|--------------------|------------|-------------|----------------|------------|-------------|----------------|-----------|------------|---------------|
| Rural              | 1.59       | 1.47        | 3.06           | 1.50       | 1.37        | 2.87           | 0.10      | 0.10       | 0.19          |
| Urban              | 1.66       | 1.75        | 3.41           | 1.58       | 1.59        | 3.17           | 0.08      | 0.16       | 0.24          |
| Total              | 1.61       | 1.54        | 3.15           | 1.52       | 1.42        | 2.94           | 0.09      | 0.11       | 0.20          |

Source: Computed from Primary Data.

Mean number of children to our respondents on the basis of respondent's education is given in Table 6.25. The table shows that the mean number of total boys and girls is very low among respondents having an educational attainment of degree and above. It can be seen from the table that the mean number of total children is declining as the level of education of the respondent increases. This re-establishes the fact that the number of children couples have declines with an increase in their education and hence, especially female education is considered as one of the best and effective methods of birth control. Again, the mean number of dead children is also very low among the respondents with higher levels of education. It is 0.08 for those respondents with an educational qualification of degree and above where as for illiterates it is 0.46. Increase in

education is accompanied by a fall in the mean number of dead children. This strongly re-establishes the fact that female education increases child survival, as educated mothers are increasingly aware of prevention and treatment of diseases, especially epidemics like diarrhea, cholera etc.

**Table 6.25**

**Mean Number of Children Ever Born by Education**

| <b>Level of Education</b> | <b>Total Boys</b> | <b>Total Girls</b> | <b>Total Children</b> | <b>Alive Boys</b> | <b>Alive Girls</b> | <b>Alive Children</b> | <b>Dead Boys</b> | <b>Dead Girls</b> | <b>Dead Children</b> |
|---------------------------|-------------------|--------------------|-----------------------|-------------------|--------------------|-----------------------|------------------|-------------------|----------------------|
| Illiterate                | 2.00              | 2.29               | 4.29                  | 1.83              | 2.00               | 3.83                  | 0.17             | 0.29              | 0.46                 |
| 1-4                       | 2.18              | 2.18               | 4.36                  | 2.02              | 1.91               | 3.93                  | 0.16             | 0.22              | 0.38                 |
| 5-7                       | 2.01              | 1.80               | 3.82                  | 1.87              | 1.66               | 3.53                  | 0.14             | 0.14              | 0.29                 |
| 8-10                      | 1.32              | 1.15               | 2.48                  | 1.29              | 1.11               | 2.40                  | 0.03             | 0.04              | 0.08                 |
| PDC                       | 0.79              | 1.26               | 2.05                  | 0.79              | 1.26               | 2.05                  | 0.00             | 0.00              | 0.00                 |
| Degree and above          | 0.97              | 0.81               | 1.78                  | 0.92              | 0.78               | 1.7                   | 0.05             | 0.03              | 0.08                 |
| Total                     | 1.61              | 1.54               | 3.15                  | 1.52              | 1.42               | 2.94                  | 0.09             | 0.11              | 0.20                 |

Source: Computed from Primary Data.

Activity status of respondents and their mean number of children (Table 6.26) shows that it is low among employed respondents when compared with their counterparts who are unemployed. The mean total number of children for both groups is 3.15 where as for employed it is 2.61 and for unemployed is 3.2. The mean number of alive boys and girls is high in case of unemployed respondents when compared with employed respondents. Unfortunately the number of dead children is high among the employed respondents. But the total number of children is low to the employed samples. Empowerment of women through education and employment is a co-operative route through which fertility transition and socio-economic development of a society can be achieved.

**Table 6.26****Mean Number of Children Ever Born by Activity Status**

| Activity Status | Total Boys | Total Girls | Total Children | Alive Boys | Alive Girls | Alive Children | Dead Boys | Dead Girls | Dead Children |
|-----------------|------------|-------------|----------------|------------|-------------|----------------|-----------|------------|---------------|
| Employed        | 1.29       | 1.32        | 2.61           | 1.21       | 1.11        | 2.32           | 0.07      | 0.21       | 0.29          |
| Unemployed      | 1.64       | 1.56        | 3.20           | 1.55       | 1.46        | 3.00           | 0.09      | 0.10       | 0.19          |
| Total           | 1.61       | 1.54        | 3.15           | 1.52       | 1.42        | 2.94           | 0.09      | 0.11       | 0.20          |

Source: Computed from Primary Data.

Mean number of children by year of marriage and religion is shown in Table 6.27. The table shows that the mean number of children is declining over the years and this is true among all religious groups. The mean number of children was 4.73 among samples married before 1970 and this declined to 2.21 among the samples who are married between 1990-2000. Muslims, it declined from 5.03 for samples married before 1970 to 2.47 for samples who are married between 1990 to 2000. In the case of other religious groups also, mean number of children has declined substantially over the years. As years pass, child survival and life expectancy on account of better nutrients and medical facilities and hence, couples try to reduce the number of children they have. This mean number of children is seen to decline over the years.

**Table 6.27****Mean Number of Children by Year of Marriage and Religion**

| Year of Marriage | Mean Number of Children |       |           |       |
|------------------|-------------------------|-------|-----------|-------|
|                  | Muslim                  | Hindu | Christian | Total |
| Before 1970      | 5.03                    | 4.00  | 4.67      | 4.73  |
| 1970 - 1980      | 3.82                    | 2.79  | 2.50      | 3.56  |
| 1980 - 1990      | 3.04                    | 2.29  | 2.33      | 2.89  |
| 1990 - 2000      | 2.47                    | 1.68  | 1.75      | 2.21  |
| 2000 and after   | 0.27                    | 0.00  | 0.00      | 0.21  |
| Total            | 3.30                    | 2.54  | 2.54      | 3.10  |

Source: Computed from Primary Data.

Age group and the number of children born is shown in Table 6.28. The Table shows that the number of children is increasing with an increase in the age of the samples showing that the samples that are aged have more children. Seven and above number of children is seen only among females aged 40 and above. It also shows that the importance attached to children changes over the years and is showing a declining tendency among our samples.

**Table 6.28**  
**Age Group and Number of Children Born**

| Age Group    | Number of Children Born to Age Groups (%) |       |       |       |       |             | Total |
|--------------|---|-------|-------|-------|-------|-------------|-------|
|              | 0   | 1 – 2 | 3 – 4 | 5 – 6 | 7 – 8 | 9 and Above |       |
| Below 20     | 80.0                                      | 20.0  |       |       |       |             | 100   |
| 20 – 25      | 23.1                                      | 61.5  | 15.4  |       |       |             | 100   |
| 25 – 30      | 7.5                                       | 50.9  | 41.5  |       |       |             | 100   |
| 30 – 35      | 2.5                                       | 35.0  | 55.0  | 7.5   |       |             | 100   |
| 35 – 40      | 1.9                                       | 24.5  | 58.5  | 15.1  |       |             | 100   |
| 40 – 45      | 2.7                                       | 24.3  | 56.8  | 13.5  | 2.7   |             | 100   |
| 45 – 50      | 5.4                                       | 18.9  | 35.1  | 37.8  | 2.7   |             | 100   |
| 50 and Above |   | 14.3  | 42.9  | 21.4  | 12.5  | 8.9         | 100   |
| Total        | 6.2                                       | 30.9  | 44.6  | 13.7  | 2.9   | 1.6         | 100   |

Source: Computed from Primary Data.

Respondents were asked whether they are satisfied with the number of children they have (Table 6.29). Of our respondents 34.2 per cent said 'no' to this question, and the percentage of respondents who are not satisfied with the number of children they have is high among Muslims (37.4 per cent) and is lowest among Hindus (23.9 per cent). The percentage of respondents who are not satisfied with the number of children they have is slightly high in rural areas

(27.2 per cent) when compared with those in urban areas (25 per cent). Those respondents who are not satisfied with the number of children they have, were asked, how many children they would like to have. The percentage of respondents who are not satisfied with the number of children they have and who desires to have more than three children is seen only among Muslims. This is as high as 38 per cent among those who desire to have more children.

**Table 6.29**  
**Response on Whether**  
**Satisfied with the Number of Children, Religion-wise**

| <b>Response</b> | <b>Muslim</b>   | <b>Hindu</b>   | <b>Christian</b> | <b>Total</b>    |
|-----------------|-----------------|----------------|------------------|-----------------|
| No              | 85<br>(37.4%)   | 16<br>(23.9%)  | 4<br>(30.8%)     | 105<br>(34.2%)  |
| Yes             | 142<br>(62.6%)  | 51<br>(76%)    | 9<br>(69.2%)     | 202<br>(65.8%)  |
| Total           | 227<br>(100.0%) | 67<br>(110.0%) | 13<br>(100.0%)   | 307<br>(100.0%) |

Source: Primary Data.

Respondents were also asked whether they are satisfied with the sex composition of children they have. This is shown in Table 6.30. Among our respondents 37.1 per cent are not satisfied with the sex composition of their children. Thus the percentage of females who are not satisfied with the sex composition of children (37.1 per cent) is relatively higher than the percentage of respondents who are not satisfied with the number of children they have (34.2 per cent). The percentage of respondents who are not satisfied with their children's sex composition is high among Christians (46.2 per cent) while it is the lowest among Hindus (32.8 per cent).

**Table 6.30****Response on Whether Satisfied  
with the Sex Composition of Children –Religion Wise**

| <b>Response</b> | <b>Muslim</b>   | <b>Hindu</b>   | <b>Christian</b> | <b>Total</b>    |
|-----------------|-----------------|----------------|------------------|-----------------|
| No              | 86<br>(37.9%)   | 22<br>(32.8%)  | 6<br>(46.2%)     | 114<br>(37.1%)  |
| Yes             | 141<br>(62.1%)  | 45<br>(67.2%)  | 7<br>(53.8%)     | 193<br>(62.9%)  |
| Total           | 227<br>(100.0%) | 67<br>(100.0%) | 13<br>(100.0%)   | 307<br>(100.0%) |

Source: Primary Data.

Those respondents who are not satisfied with the sex composition of their children were asked how many male and female children they would like to have. This is given in Tables 6.31 and 6.32. Table 6.31 shows the number of boys respondents like to have, to attain their desired sex composition. Respondents who do not like to have more sons to attain their desired sex composition is high among Christians (16.7 per cent) while it is lowest among Muslims (4.7 per cent). The percentage of respondents who would like to have one son to attain their desired sex composition is high among Hindus (68.2 per cent) followed by Christians (66.7 per cent). The percentage of respondents who desire to have two and more sons to attain the sex composition that satisfies them is highest among Muslims (61.6 per cent). This indicates that Muslims prefer to have more children and son preference is also strong among them when compared with the other religious groups.

**Table 6.31****Number of Boys Respondents Like to Have**

| <b>Number of Boys</b> | <b>Muslim</b>  | <b>Hindu</b>   | <b>Christian</b> | <b>Total</b>    |
|-----------------------|----------------|----------------|------------------|-----------------|
| 0                     | 4<br>(4.7%)    | 2<br>(9.1%)    | 1<br>(16.7%)     | 7<br>(6.1%)     |
| 1                     | 29<br>(33.7%)  | 15<br>(68.2%)  | 4<br>(66.7%)     | 48<br>(42.1%)   |
| 2                     | 33<br>(38.4%)  | 5<br>(22.7%)   | 1<br>(16.7%)     | 39<br>(34.2%)   |
| 3                     | 13<br>(15.1%)  | --             | --               | 13<br>(11.4%)   |
| 4                     | 6<br>(7.0%)    | --             | --               | 6<br>(5.3%)     |
| 5                     | 1<br>(1.2%)    | --             | --               | 1<br>(9%)       |
| <b>Total</b>          | 86<br>(100.0%) | 22<br>(100.0%) | 6<br>(100.0%)    | 114<br>(100.0%) |

Source: Primary Data.

On the other hand, the percentage of respondents who would not like to have any more girls to attain the desired sex composition is as high as 31.4 per cent among Muslims while it is nil among Christians. This is shown in Table 6.32. The Christian respondents who desire to have girls desires one more girl to attain the sex composition of their desire while it is 59.1 per cent for Hindus and 33.7 per cent for Muslims. Among Muslims who are not satisfied with the existing sex composition of their children, 34.9 per cent would like to have two and more girls to attain their desired sex composition. Thus it is the Muslims who would like to have more of both boys and girls to attain their desired sex composition.

**Table 6.32****Number of Girls Respondents Like to Have**

| <b>Number of boys</b> | <b>Muslim</b>  | <b>Hindu</b>   | <b>Christian</b> | <b>Total</b>    |
|-----------------------|----------------|----------------|------------------|-----------------|
| 0                     | 27<br>(31.4%)  | 6<br>(27.3%)   | --               | 33<br>(28.9%)   |
| 1                     | 29<br>(33.7%)  | 13<br>(59.1%)  | 6<br>(100.0%)    | 48<br>(42.1%)   |
| 2                     | 27<br>(31.4%)  | 3<br>(13.6%)   | --               | 30<br>(26.3%)   |
| 3                     | 3<br>(3.5%)    | --             | --               | 3<br>(2.6%)     |
| <b>Total</b>          | 86<br>(100.0%) | 22<br>(100.0%) | 6<br>(100.0%)    | 114<br>(100.0%) |

Source: Primary Data.

Religion wise preference towards the size of family is given in Table-6.33. Among our respondents 27.7 per cent would like to have 1 to 2 children, 51.8 per cent would like to have 3 to 4 children, 11.9 per cent prefers 5 to 6 children and the rest (9.4 per cent) didn't specify their preferred size of family and responded that they prefer as many children as given by God. A religious wise breakup shows that majority who desire to have 1 to 2 children is seen among Christians (53.8 per cent) followed by Hindus (49.3 per cent). The percentage of respondents who desire to have 3 to 4 children (59 per cent) and 5 to 6 children is found highest among Muslims (12.8 per cent). Majority of Muslims (59 per cent) prefers to have 3 to 4 children while majority who belong to other religious groups prefers to have 1 to 2 children. Thus actual and preferred size of family is relatively high among the religious group of Muslims.

**Table 6.33****Preferred Size of Family by Religion**

| Number of Children      | Preferred size of Family |               |              | Total          |
|-------------------------|--------------------------|---------------|--------------|----------------|
|                         | Muslim                   | Hindu         | Christian    |                |
| 1 – 2                   | 45<br>(19.8%)            | 33<br>(49.3%) | 7<br>(53.8%) | 85<br>(27.7%)  |
| 3 – 4                   | 134<br>(59.0%)           | 22<br>(32.8%) | 3<br>(21.3%) | 159<br>(51.8%) |
| 5 – 6                   | 29<br>(12.8%)            | 3<br>(4.5%)   | 2<br>(15.4%) | 34<br>(11.1%)  |
| As many as given by god | 19<br>(8.4%)             | 9<br>(13.4%)  | 1<br>(7.7%)  | 29<br>(9.4%)   |
| Total                   | 227<br>(100%)            | 67<br>(100%)  | 13<br>(100%) | 307<br>(100%)  |

Source: Primary Data.

Rural-Urban break-up of samples on the basis of their preference towards the size of family is shown in Table 6.34. It is interesting to note that even in the urban areas of Malappuram, 50 per cent prefers 3 to 4 children. The percentage of respondents who prefers 1 to 2 children is just 10.5 per cent in urban areas whereas it is 33.3 per cent in rural areas. We are more shocked to say that 32.9 per cent of the respondents living in urban areas did not specify their desired number of children and preferred as many children as given by God as their preference towards size of family. The percentage that opined that they would like to have as many children as given by god is just 1.7 per cent in rural areas.

**Table 6.34****Preferred Size of the Family - Rural/Urban wise**

| Number of Children               | Preferred size of Family |                | Total           |
|----------------------------------|--------------------------|----------------|-----------------|
|                                  | Rural                    | Urban          |                 |
| 1 - 2 Children                   | 77<br>(33.3%)            | 8<br>(10.5%)   | 85<br>(27.7%)   |
| 3 - 4 Children                   | 121<br>(52.4%)           | 38<br>(50.0%)  | 159<br>(51.8%)  |
| 5-6 Children                     | 29<br>(12.6%)            | 5<br>(6.6%)    | 34<br>(11.1%)   |
| As many children as given by God | 4<br>(1.7%)              | 25<br>(32.9%)  | 29<br>(9.4%)    |
| Total                            | 231<br>(100.0%)          | 76<br>(100.0%) | 307<br>(100.0%) |

Source: Primary Data.

**6.1.9 Son Preference**

A religious wise break up of our respondents and their son preference is given in Table 6.35. Among our samples, 25.4 per cent revealed that they prefer sons to daughters. The percentage of respondents who prefer sons to daughters is the highest among Muslims (26.9 per cent) followed by Hindus (25.4 per cent), while it is nil among Christians. Here also the respondents belonging to Christianity is very much forward than other religious groups, which treats boys as assets and girls as liabilities. Son preference is found to be stronger in rural (28.6 per cent) areas when compared with urban areas (15.8 per cent). Son preference is also low among those respondents with an educational attainment of degree and above (8.4 per cent) whereas among illiterates it is 33.3 per cent.

**Table 6.35****Son Preference - Religion wise**

| <b>Son Preference</b> | <b>Muslim</b>   | <b>Hindu</b>   | <b>Christian</b> | <b>Total</b>    |
|-----------------------|-----------------|----------------|------------------|-----------------|
| No                    | 166<br>(73.1%)  | 50<br>(74.5%)  | 13<br>(100.0%)   | 229<br>(74.6%)  |
| Yes                   | 61<br>(26.9%)   | 17<br>(25.4%)  | --               | 78<br>(25.4%)   |
| Total                 | 227<br>(100.0%) | 67<br>(100.0%) | 13<br>(100.0%)   | 307<br>(100.0%) |

Source: Primary Data.

Respondents were asked their opinion on how important is it to have at least one son. This response is shown in Table 6.36. A little more than half of our respondents (50.5 per cent) said that it is very important, 19.9 per cent opined it as somewhat important while the rest (29.6 per cent) considered it as unimportant. A religious wise break up shows that the respondents who feel having at least one son as very important is the highest among Hindus (52.2 per cent) followed by Muslims (50.7 per cent). The percentage of respondents who feel that it is unimportant to have at least one son is highest among Christians (38.5 per cent). A rural-urban break-up shows that it is the respondents from urban areas who feel to have atleast one son as very important (71.1 per cent) compared to rural areas (43.7 per cent). Among the respondents from rural areas 38.1 per cent feels it unimportant to have at least one son while the corresponding figure for urban area is 3.9 per cent.

**Table 6.36****Opinion on the Importance of Having atleast one Son -Religion wise**

| Opinion            | Importance of Having atleast one Son |                |                | Total           |
|--------------------|--------------------------------------|----------------|----------------|-----------------|
|                    | Muslim                               | Hindu          | Christian      |                 |
| Very important     | 115<br>(50.7%)                       | 35<br>(52.2%)  | 5<br>(38.5%)   | 155<br>(50.5%)  |
| Somewhat important | 46<br>(20.3%)                        | 12<br>(17.9%)  | 3<br>(23.1%)   | 61<br>(19.9%)   |
| Unimportant        | 66<br>(29.1%)                        | 20<br>(29.9%)  | 5<br>(38.5%)   | 91<br>(29.6%)   |
| Total              | 227<br>(100.0%)                      | 67<br>(100.0%) | 13<br>(100.0%) | 307<br>(100.0%) |

Source: Primary Data.

Response was gathered on how the respondent's fertility behaviour will be if they don't have sons. This is shown in Table 6.37. Of our respondents 19.5 per cent said that they would continue child bearing until a boy comes, 63.8 per cent said that they will stop giving birth after having 3 to 5 girls, and the rest said (16.6 per cent) they are uncertain about what they will do, if they don't have sons. It is alarming to note that the percentage of respondents who said that they will continue giving birth until a boy comes is very high among Muslims (23.3 per cent) compared to Christians (7.7 per cent) and Hindus (9.0 per cent). The percentage of respondents, who are uncertain about their fertility behaviour if they don't have sons, is also the highest among Muslims (19.8 per cent). From this table also we can see the strong son preference that exists among Muslims. A rural-urban break-up shows that the percentage who said that they will continue giving birth until a boy comes is the highest in rural areas (21.6 per cent) when compared with urban areas (13.2 per cent).

**Table 6.37****Opinion on Fertility Behaviour in the Absence of Sons, Religion wise**

| <b>Opinion</b>                           | <b>Muslim</b>                 | <b>Hindu</b>                 | <b>Christian</b>             | <b>Total</b>                  |
|--|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Continue child bearing until a boy comes | 53<br>(23.3%)                 | 6<br>(9.0%)                  | 1<br>(7.7%)                  | 60<br>(19.5%)                 |
| Stop after 3 to 5 girls                  | 129<br>(56.8%)                | 56<br>(83.6%)                | 11<br>(84.6%)                | 196<br>(63.8%)                |
| Uncertain                                | 45<br>(19.8%)                 | 5<br>(7.5%)                  | 1<br>(7.7%)                  | 51<br>(16.6%)                 |
| <b>Total</b>                             | <b>227</b><br><b>(100.0%)</b> | <b>67</b><br><b>(100.0%)</b> | <b>13</b><br><b>(100.0%)</b> | <b>307</b><br><b>(100.0%)</b> |

Source: Primary Data.

Respondents were asked whether family members and relatives ill-treats women who have given birth only to girls. Majority (72.6 per cent) said that family members and relatives do not ill-treat women who have given birth only to girl children. Break-up of families into joint and nuclear shows that 32.2 per cent of the respondents of joint families agreed that family members and relatives ill-treats women who have given birth only to girls. Among these respondents who said that family members and relatives ill-treats females who have given birth only to girls, 79.8 per cent said there exists verbal harassment, both verbal and physical harassment (15.5 per cent) and physical harassment (4.6 per cent).

#### **6.1.10 Spacing between Children and Breast-Feeding**

Spacing between children and the period of breast-feeding also influences fertility. Among our respondents, 20.8 per cent opined that there is no need for spacing between children where as majority (79.2 per cent) agreed that spacing between children is needed. The percentage of respondents who prefer spacing is a little high in urban areas (80.3 per cent) when compared with rural areas (79

per cent). Respondents who prefer spacing is seen to increase with an increase in educational attainment. Respondents who do not prefer spacing is high among illiterates (29.2 per cent) and it is lowest among the category professionals (9.1 per cent).

**Table 6.38**  
**Desired Number of Years of Spacing between Children - Religion-wise**

| Number of years | Desired Number of Years of Spacing |                |                | Total           |
|-----------------|------------------------------------|----------------|----------------|-----------------|
|                 | Muslim                             | Hindu          | Christian      |                 |
| 2-3             | 66<br>(36.9%)                      | 25<br>(47.2%)  | 2<br>(18.2%)   | 93<br>(38.3%)   |
| 3-4             | 74<br>(41.3%)                      | 23<br>(43.4%)  | 6<br>(54.5%)   | 103<br>(42.4%)  |
| 4and above      | 39<br>(21.8%)                      | 5<br>(9.4%)    | 3<br>(27.3%)   | 47<br>(19.3%)   |
| Total           | 179<br>(100.0%)                    | 53<br>(100.0%) | 11<br>(100.0%) | 243<br>(100.0%) |

Source: Primary Data.

Table 6.38 shows desired number of years of spacing between children, religion wise. Majority of our respondents, who prefer spacing, prefers to have 3 to 4 years between two-child births. It is Christians who prefer more years of spacing between children when compared with other religious groups. Breast-feeding behaviour of our respondent's shows that majority feeds their children for two and a half years (37.1 per cent), followed by one and a half to two years (23.5 per cent). The percentage of respondents who breastfeed their children above two and a half years (29.9 per cent) is the highest among Hindus.

### **6.1.11 Expectations from Children**

In many societies it is believed that children are real possession of family and society. They are the source of strength and power and can stand with parents at the time of difficulty. Old age security is cited by many demographers as an important reason for having children. Similarly it is with the help of male children alone that family can pull on and parental love can be given and the family perpetuated. In such societies, every effort is made to have male children and when there are girls only, the couples continue to go on giving birth to children till a boy comes. When attitude towards children is thus positive, family size goes on increasing and then, there is no check on fertility.

Besides old age security, economic security and physical support are also important motives for having children. Generally, it is found that the couples who have economic security and good house to live have few number of children and their unemployment does not lead to an increase in the number of children they have when compared with their counterparts who are always in the danger of economic insecurity and becoming unemployed.

Among our respondents 20.8 per cent said that they do not expect any kind of help from their children. A religious-wise break up of respondents show that the percentage of respondents who expect help from their children is the highest among Muslims (82.8 per cent) followed by Christians (69.2 per cent) and Hindus (68.7 per cent). On an average 79.2 per cent of our respondents expects help from their children. A religious wise break up of our respondents by the type of help they expects from their children shows that majority (52.7 per cent) expected old age security and this is true in case of all the religions. The rest pointed to a combination of old age security, physical and economic support.

Respondents were also asked the disadvantages, if any, in having children. Of our respondents 54 per cent said that they don't feel any disadvantage in having children where as the rest pointed to increased responsibility and economic burden as the problems associated with having children.

#### **6.1.12 Awareness on AIDS**

Acquired Immuno Deficiency Syndrome (AIDS) is a sexually transmitted killer disease and awareness regarding the spread of the disease is highly important to prevent it from spreading. Among our respondents, 11.1 per cent have not at all heard about AIDS. The percentage of respondents who have not heard about AIDS is very high among Hindus (22.4 per cent) followed by Muslims (8.4 per cent) while there is no respondent among Christians who have not heard about AIDS. The respondent who have not heard about AIDS is nil among the respondents who have higher levels of education (more than ten years of schooling) and is low in urban areas (3.9 per cent) when compared with rural areas (13.4 per cent).

Respondents who have heard about AIDS were also asked whether they know how it spreads. Of our respondents who have heard about AIDs, 12.8 per cent doesn't know about the spread of AIDS. The percentage of respondents who do not know how AIDS spreads is high among Muslims (15.0 per cent) when compared with Hindus (5.8 per cent). The percentage of respondents who are unaware of the spread of AIDS is high in rural areas (15.0 per cent) when compared with urban areas (6.8 per cent). The respondents who are unaware about the spread of AIDS is nil among the respondents who have an educational qualification of ten years of schooling and above.

### **6.1.13 Infertility**

Among our samples, the percentage of respondents/their husbands who have problems related to fertility is as high as 13.4 per cent. The problem of infertility is seen more among Muslims (14.5 per cent) while it is nil among Christians. The problem is relatively high in rural areas (16.9 per cent) when compared with urban (2.6 per cent) areas. Among the samples that have infertility problems, 68.3 per cent said that they themselves have the problem and 31.7 per cent said that their husbands are having problems related to infertility. Majority of these samples (90.2 per cent) that have fertility related problems said that they are still under treatment and are following the recommendations of doctors.

## **6.2 DETAILS ON FAMILY PLANNING AND CONTRACEPTIVE USE**

The most important direct factor, which affects fertility, is family planning. Every society tries to check its population, otherwise many socio-economic and political problems arise. Hence, every attempt is made to educate as well as convince the people about checking fertility. There are different methods of achieving this objective and in many countries, the supply of contraceptives are highly subsidized. Population education is now being given at the school level, so that from young age, they become aware of the need and necessity of small family size. In this section we focus on the contraceptive behaviour of our samples of Malappuram district.

Our respondents were asked whether a health or family planning worker visited them at home in the last twelve months. Majority of our respondents (82.1 per cent) replied that a health or family planning worker visited them in the

last twelve months. The percentage of respondents who said that no health or family planning worker visited them is found high in rural areas (19.5 per cent) when compared with urban areas (13.2 per cent).

The percentage of respondents who are visited by public sector workers is as high as 98 per cent, where as those visited by workers of non-governmental organizations is just 2 per cent, which signifies that the government or public sector is the main agency associated with the provision of help and advice on health and family planning in Kerala. The percentage of workers of non-governmental organizations who visited our respondents is comparatively higher in urban areas (6.1 per cent) when compared with rural areas (0.5 per cent). Among the public sector workers, Anganwadi workers (43.3 per cent), public health nurse, (16.3 per cent) and both (37.7 per cent) forms the type of persons who visited our respondents. The frequency of visit of the health or family planning worker to their household in the last twelve months differed between households and it is once for 20.2 per cent, twice for 22.6 per cent, thrice for 20.2 per cent and 12 times for 11.5 per cent of the respondents.

When the health or family planning worker visited the households, different matters like breast-feeding, family planning, immunization, disease prevention, treatment of health problem etc. were discussed. The single important matter discussed was immunization (56 per cent) while a combination of immunization, family planning and breast-feeding as matters of discussion by the health worker was pointed by 19 per cent of the respondents. Disease prevention (5.2 per cent) and family planning (3.6 per cent) was also discussed separately by some of our respondents. Of our samples 15 per cent said that more than three of the above said matters were discussed with the health worker.

Majority of respondents received some services like immunization, family planning advice and family planning devices. when health workers visited them. Of all the respondents, 38.5 per cent responded that they didn't receive any service while 32.5 per cent responded that they received immunization services, 7.2 per cent said they got family planning advice and devices and the rest replied that they received more than one of the above-mentioned services.

Of our respondents 38.4 per cent visited hospitals recently and majority (96.6 per cent) of them opined that the staff spend enough time with them and 80 per cent of them said that the staff behaved nicely. Among the respondents who went to hospitals recently, 90.7 per cent opined that the staff respected their need for privacy and majority of them rate the health facility as very clean (75.4 per cent) while 22.9 per cent says it as some what clean and 1.7 per cent opined it as not clean.

Of the respondents who visited hospitals recently were asked whether they discussed any method of delaying or avoiding pregnancy with the staff. Female sterilization was the most important matter discussed to avoid pregnancy (16 per cent) followed by temporary methods of delaying pregnancy like IUD loop (2.9 per cent) and pills and condoms (2.9 per cent). The percentage of respondents who discussed more than one method of avoiding or delaying pregnancy comes to 21.2 per cent. Respondents who discussed male sterilization comes to only 0.3 per cent, re-establishing the fact that it is not popular in our society. Those who discussed natural methods of birth control come to 2.6 per cent. Among the respondents who went to hospital and didn't discuss any method of avoiding or delaying pregnancy comes to 54.1 per cent of the total respondents.

Response on whether the respondents tried in any way to delay or avoid getting pregnant was gathered. This is shown in Table 6.39. Among our samples, 26.4 per cent have never tried any method of delaying or avoiding pregnancy while 73.6 per cent of the females have used some method of birth control. A religious-wise break up of our respondents shows that the percentage who hasn't tried any method is the highest among Muslims (29.1 per cent) whereas it is 19.4 per cent for Hindus and 15.4 per cent among Christians. The percentage of respondents who have tried to delay or avoid getting pregnant is high in urban areas (85.5 per cent) when compared with rural areas (67.9 per cent).

**Table 6.39**

**Percentage who Tried to Delay Pregnancy by Religion**

| Delayed pregnancy | Percentage who tried to Delay Pregnancy |               |               | Total          |
|-------------------|---|---------------|---------------|----------------|
|                   | Muslim                                  | Hindu         | Christian     |                |
| No                | 66<br>(29.1%)                           | 13<br>(19.4%) | 2<br>(15.4%)  | 81<br>(26.4%)  |
| Yes               | 161<br>(70.9%)                          | 54<br>(80.6%) | 11<br>(84.6%) | 226<br>(73.6%) |
| Total             | 227<br>(100%)                           | 67<br>(100%)  | 13<br>(100%)  | 307<br>(200%)  |

Source: Primary Data.

Of our respondents 73.61 per cent have used either natural or artificial/scientific methods of birth control. Table 6.40 gives the percentage of respondents who use different methods of delaying pregnancy, religion wise. The table shows that among all religious, female sterilization is the most important method adopted (40.7 per cent) and the percentage of male sterilization is 2.7 per

cent. Among the temporary methods of birth control, pills is found to be the most important one (18.1 per cent) followed by condoms (10.6 per cent) natural methods (7.1 per cent) and IUD loop (6.6 per cent). A religious wise break up of the sterilized respondents shows that female's sterilization is the highest among Muslims (42.2 per cent) followed by Hindus (40.7 per cent) and it is lowest among Christians (18.2 per cent). The percentage of respondents whose husbands adopted male sterilization is the highest among Christians (9.1 per cent). The respondents who depend on natural methods of birth control is also highest among Christians (18.2 per cent) while it is 5.6 per cent for Hindus and 6.8 per cent for Muslims. Among our respondents, 14.2 per cent used more than one method of birth control and have adopted female sterilization later.

**Table 6.40**  
**Methods of Birth Control Used, Religion-wise**

| Sl. No. | Birth Control Methods                         | Methods of Birth Control Used |                |                | Total           |
|---------|---|-------------------------------|----------------|----------------|-----------------|
|         |   | Muslim                        | Hindu          | Christian      |                 |
| 1       | Pill  | 29<br>(18.0%)                 | 8<br>(14.8%)   | 4<br>(36.4%)   | 41<br>(18.1%)   |
| 2       | Condoms                                       | 18<br>(11.2%)                 | 5<br>(9.3%)    | 1<br>(9.1%)    | 24<br>(10.6%)   |
| 3       | IUD loop                                      | 11<br>(6.8%)                  | 4<br>(7.4%)    | --             | 15<br>(6.6%)    |
| 4       | Female sterilization                          | 68<br>(42.2%)                 | 22<br>(40.7%)  | 2<br>(18.2%)   | 92<br>(40.7%)   |
| 5       | Male sterilization                            | 4<br>(2.5%)                   | 1<br>(1.9%)    | 1<br>(9.1%)    | 6<br>(2.7%)     |
| 6       | Natural methods                               | 11<br>(6.8%)                  | 3<br>(5.6%)    | 2<br>(18.2%)   | 16<br>(7.1%)    |
| 7       | More than One Method and Female sterilization | 20<br>(12.4%)                 | 11<br>(20.4%)  | 1<br>(9.1%)    | 32<br>(14.2%)   |
| 8       | Total   | 161<br>(100.0%)               | 54<br>(100.0%) | 11<br>(100.0%) | 226<br>(100.0%) |

Source: Primary Data.

A rural urban wise break up of respondents on the basis of the method of birth control used is given in Table 6.41. The table shows that female sterilization is almost equally important in rural (41 per cent) and urban (40 per cent) areas and the use of temporary methods like pills (23.1 per cent), condoms (13.8 per cent), and IUD loop (10.8 per cent) is found high in urban areas when compared with rural areas. The percentage that uses natural methods of birth control is also high in urban areas (7.7 per cent) when compared to rural areas. The respondents who made use of more than one method of birth control is found high among rural areas and is not seen in urban areas.

**Table 6.41**

**Methods of Birth Control used, by Place of Residence**

| Sl. No. | Methods of Birth Control                      | Place of Residence |                | Total           |
|---------|---|--------------------|----------------|-----------------|
|         |   | Rural              | Urban          |                 |
| 1       | Pill  | 26<br>(16.1%)      | 15<br>(23.1%)  | 41<br>(18.1%)   |
| 2       | Condoms                                       | 15<br>(9.3%)       | 9<br>(13.8%)   | 24<br>(10.6%)   |
| 3       | IUD loop                                      | 8<br>(5.0%)        | 7<br>(10.8%)   | 15<br>(6.6%)    |
| 4       | Female sterilization                          | 66<br>(41.0%)      | 26<br>(40.0%)  | 92<br>(40.7%)   |
| 5       | Male sterilization                            | 3<br>(1.9%)        | 3<br>(4.6%)    | 6<br>(2.7%)     |
| 6       | Natural method of birth controls              | 11<br>(6.8%)       | 5<br>(7.7%)    | 16<br>(7.1%)    |
| 7       | More than one method and female sterilization | 32<br>(19.9%)      | -              | 32<br>(14.2%)   |
| 8       | Total   | 161<br>(100.0%)    | 65<br>(100.0%) | 226<br>(100.0%) |

Source: Primary Data.

An education-wise break up of respondents shows that the percentage of respondents who use temporary methods of birth control like pills and condoms

is high among respondents with higher levels of education. This is given in Table 6.42. Female sterilization is found highest among illiterates (52.4%) when compared with degree holders (20%) and professionals (33.3%). Female sterilization is found to be the most favoured method among all educational categories except those who have an educational attainment of degree. Also, female sterilization is found to be the most favoured method of birth control among all income groups. But the use of IUD loop is not seen among those who have an income less than Rs.3000 – 5000. Male sterilization is seen only among those who have an income of more than Rs. 5000.

**Table 6.42**

**Methods of Birth Control Used by Education**

| Sl. No. | Method of Birth Control                       | Illiterate     | 1-4            | 5-7            | 8-10           | PDC            | Degree         | Professional & Technical | Total           |
|---------|---|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|-----------------|
| 1       | Pill  | 3<br>(14.3%)   | 3<br>(10.0%)   | 5<br>(9.3%)    | 18<br>(21.7%)  | 5<br>(31.3%)   | 6<br>(60.0%)   | 1<br>(8.33)              | 41<br>(18.1%)   |
| 2       | Condoms                                       | 2<br>(9.5%)    | 3<br>(10.0%)   | 4<br>(7.4%)    | 9<br>(10.8%)   | 4<br>(25.0%)   | 1<br>(10.0%)   | 1<br>(8.33)              | 24<br>(10.6%)   |
| 3       | IUD loop                                      | 1<br>(4.8%)    | 1<br>(3.3%)    | 7<br>(13.0%)   | 3<br>(3.6%)    | 1<br>(6.3%)    | 1<br>(10.0%)   | 1<br>(8.33)              | 15<br>(6.6%)    |
| 4       | Female sterilization                          | 11<br>(52.4%)  | 12<br>(40.0%)  | 23<br>(42.6%)  | 35<br>(42.2%)  | 5<br>(31.3%)   | 2<br>(20.0%)   | 4<br>(33.3)              | 92<br>(40.7%)   |
| 5       | Male sterilization                            | 1<br>(4.8%)    | 2<br>(6.7%)    | --             | 2<br>(2.4%)    | --             | --             | 8.33                     | 6<br>(2.7%)     |
| 6       | Natural method of birth controls              | 2<br>(9.5%)    | 3<br>(10.0%)   | 3<br>(5.6%)    | 6<br>(7.2%)    | --             | --             | 2<br>(16.67)             | 16<br>(7.1%)    |
| 7       | More than one method and female sterilization | 1<br>(4.8%)    | 6<br>(20.0%)   | 12<br>(22.3%)  | 10<br>(11%)    | 1<br>(6.3%)    | --             | 2<br>(16%)               | 32<br>(14.2%)   |
| 8       | Total   | 21<br>(100.0%) | 30<br>(100.0%) | 54<br>(100.0%) | 83<br>(100.0%) | 16<br>(100.0%) | 10<br>(100.0%) | 12<br>(100.0%)           | 226<br>(100.0%) |

Source: Primary Data.

The number of living children the respondents had at the time when they first tried to delay or avoid getting pregnant is given in Table 6.43. The percentage of respondents who have used methods of delaying pregnancy even before having one child and after having only one child is high among Christians (25 per cent for each). Among Hindus, majority started using birth delaying/controlling methods after having two (30.4 per cent) and three (30.4 per cent) children. Among Muslims, majority (25.2 per cent) started to use methods of delaying/avoiding pregnancy after having three children. It is also seen that the percentage of respondents who started to use birth delaying/controlling methods after the third child is nil among Christians where as it is very high among Muslims. Among Muslims, the percentage of respondent who use birth delaying/controlling methods after fourth, fifth and six and above children is of the order 14.5 per cent, 7.6 per cent, 0.8 per cent and 3.2 per cent respectively.

**Table 6.43**

**Number of Living Children at the Time  
when Birth Control Methods was First used by Religion**

| Number of Children | Number of living children at the time when birth control methods was first used |                |               | Total           |
|--------------------|---|----------------|---------------|-----------------|
|                    | Muslim  | Hindu          | Christian     |                 |
| 0                  | 22<br>(16.8%)   | 7<br>(15.2%)   | 2<br>(25.0%)  | 31<br>(16.8%)   |
| 1                  | 24<br>(18.3%)   | 5<br>(10.9%)   | 2<br>(25.0%)  | 31<br>(16.8%)   |
| 2                  | 24<br>(18.3%)   | 14<br>(30.4%)  | 2<br>(25.0%)  | 40<br>(21.6%)   |
| 3                  | 28<br>(21.4%)   | 14<br>(30.4%)  | 2<br>(25.0%)  | 44<br>(23.8%)   |
| 4                  | 19<br>(14.5%)   | 4<br>(8.7%)    | --            | 23<br>(12.4%)   |
| 5                  | 10<br>(7.6%)  | --             | --            | 10<br>(5.4%)    |
| 6 and above        | 4<br>(3.1%)   | 2<br>(4.4%)    | --            | 6<br>(3.2%)     |
| Total              | 131<br>(100.0%)   | 46<br>(100.0%) | 8<br>(100.0%) | 185<br>(100.0%) |

Source: Primary Data.

Education wise break-up of respondents on the basis of the number of children they have at the time when they first started to delay or avoid pregnancy is given in Table 6.44. The table clearly reveals that the percentage of respondents, who use birth control/delaying methods even before having one child, is very high among respondents with an educational attainment of pre-degree and more. It is found highest among degree holders (33.3 per cent).

**Table 6.44**

**Number of Living Children when Birth Control Methods was used for the First Time - Education-wise**

| <b>Number of Children</b> | <b>Illiterate</b>     | <b>1-4</b>            | <b>5-7</b>            | <b>8-10</b>           | <b>PDC</b>            | <b>Degree</b>        | <b>Professional</b>   | <b>Total</b>           |
|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|------------------------|
| 0                         | 2<br>(14.3%)          | 2<br>(8.7%)           | 7<br>(15.6%)          | 11<br>(15.7%)         | 5<br>(31.3%)          | 2<br>(33.3%)         | 2<br>(18.18%)         | 31<br>(16.8%)          |
| 1                         | 3<br>(21.4%)          | 3<br>(13.0%)          | 3<br>(6.7%)           | 13<br>(18.6%)         | 4<br>(25.0%)          | 1<br>(16.7%)         | 4<br>(36.36%)         | 31<br>(16.6%)          |
| 2                         | 2<br>(14.3%)          | 3<br>(13.0%)          | 10<br>(22.%)          | 19<br>(27.1%)         | 4<br>(25.0%)          |                      | 2<br>(18.18%)         | 40<br>(21.6%)          |
| 3                         | 1<br>(7.1%)           | 6<br>(26.1%)          | 4<br>(8.9%)           | 8<br>(11.4%)          | 1<br>(6.3%)           | 1<br>(16.7%)         | 3<br>(27.27%)         | 44<br>(23.8%)          |
| 4                         | 3<br>(21.4%)          | 6<br>(26.1%)          | 4<br>(8.9%)           | 8<br>(11.4%)          | 1<br>(6.3%)           | 1<br>(16.7%)         | --                    | 23<br>(12.4%)          |
| 5                         | 2<br>(14.3%)          | 1<br>(4.3%)           | 6<br>(13.3%)          | 1<br>(1.4%)           | --                    | --                   | --                    | 10<br>(5.4%)           |
| 6 and above               | 1<br>(7.1%)           | 2<br>(8.6%)           | 3<br>(6.6%)           | --                    | --                    | --                   | --                    | 6<br>(3.2%)            |
| <b>Total</b>              | <b>14</b><br>(100.0%) | <b>23</b><br>(100.0%) | <b>45</b><br>(100.0%) | <b>70</b><br>(100.0%) | <b>16</b><br>(100.0%) | <b>6</b><br>(100.0%) | <b>11</b><br>(100.0%) | <b>185</b><br>(100.0%) |

Source: Primary Data.

The most important source, which our respondents depended for obtaining contraceptive methods, is hospitals (63.7 per cent) followed by medical shop (11.1 per cent) and primary health centres (4 per cent). The rest (21.3 per cent) do not know the source and it is their husband who provides them.

Religious-wise break-up of respondents on the basis of decision making in contraceptive use is given in Table 6.45. In the case of respondents belonging to Christianity, 63.6 per cent said that both husband and wife took the decision, while husbands alone took decision in the case of rest of the (36.4 per cent) respondents. Among Hindus, 61.1 per cent of respondents and their husbands together decided on contraception, and husbands alone took decision in case of 29.6 per cent of the respondents. Among Muslims, the most important decision maker is husband (43.5 per cent), and then comes both husband and wife (42.9 per cent) followed by wife alone (12.4 per cent). The percentage of respondents who took decision alone is high among Muslims. In the case of 1.3 per cent of respondents, doctors took decision regarding the method of contraception. When all respondents are taken together, both husband and wife forms the important decision makers (48.2 per cent) followed by husband alone (39.8 per cent), wife alone (10.6 per cent) and doctor (1.3 per cent).

**Table 6.45****Decision-maker in Contraceptive use by Religion**

| <b>Decision Maker</b> | <b>Decision Maker in Contraceptive Use</b> |                |                  | <b>Total</b>    |
|-----------------------|--|----------------|------------------|-----------------|
|                       | <b>Muslim</b>                              | <b>Hindu</b>   | <b>Christian</b> |                 |
| Husband               | 70<br>(43.5%)                              | 18<br>(29.6%)  | 4<br>(36.4%)     | 90<br>(39.8%)   |
| Wife                  | 20<br>(12.4%)                              | 4<br>(7.4%)    | --               | 24<br>(10.6%)   |
| Doctor                | 2<br>(1.2%)                                | 1<br>(1.9%)    | --               | 3<br>(1.3%)     |
| Husband & Wife        | 69<br>(42.9%)                              | 33<br>(61.1%)  | 7<br>(63.6%)     | 109<br>(48.2%)  |
| Total                 | 161<br>(100.0%)                            | 54<br>(100.0%) | 11<br>(100.0%)   | 225<br>(100.0%) |

Source: Primary Data.

The motivation behind the use of methods of birth control is shown in Table 6.46. The reasons cited are better standard of living (38.1 per cent), the desire to have spacing between children (22.6 per cent), economic burden of the house hold (17.3 per cent), health problems (10.6 per cent), desires no more children (7.5 per cent), the problem of household management and other reasons. Among Muslims and Hindus, the most important factor that motivated the use of contraception is to have better standard of living while the need for spacing between children is the most important motivation cited by Christians. A rural urban break-up of respondents regarding the motivation behind contraceptive use shows little difference. In both areas, attainment of better standard of living is the important motive while the desire to have spacing between children is comparatively high in urban areas (29.2 per cent) when compared with in rural areas (19.9 per cent).

**Table 6.46****Factors that Motivated the Use of Birth Control - Religion-wise**

| Factors that Motivated birth Control | Religion        |                |                | Total           |
|--------------------------------------|-----------------|----------------|----------------|-----------------|
|                                      | Muslim          | Hindu          | Christian      |                 |
| Economic burden                      | 25<br>(15.5%)   | 11<br>(20.4%)  | 3<br>(27.3%)   | 39<br>(17.3%)   |
| Spacing between children             | 39<br>(24.2%)   | 8<br>(14.8%)   | 4<br>(36.4%)   | 51<br>(22.6%)   |
| Own health problems                  | 19<br>(11.8%)   | 3<br>(5.6%)    | 2<br>(18.2%)   | 24<br>(10.6%)   |
| To have better standard of living    | 59<br>(36.6%)   | 25<br>(46.3%)  | 2<br>(18.2%)   | 86<br>(38.1%)   |
| Problem of household management      | 5<br>(3.1%)     | --             | --             | 5<br>(2.2%)     |
| Wants no more children               | 11<br>(6.8%)    | 6<br>(11.1%)   | --             | 17<br>(7.5%)    |
| Any other                            | 3<br>(1.9%)     | 1<br>(1.9%)    | --             | 4<br>(1.8%)     |
| Total                                | 161<br>(100.0%) | 54<br>(100.0%) | 11<br>(100.0%) | 226<br>(100.0%) |

Source: Primary Data.

The percentage of respondent who used some method of birth control were asked whether they are informed about the side effects, if any, associated with it. Only 43.8 per cent of our respondents replied 'yes' while majority (56.2 per cent) said they are not informed about the side effects. The percentage of respondents who are informed about the side effects of the methods of birth control they use is high in urban areas (61.5 per cent) when compared with rural areas (36.6 per cent). It is also seen that the percentage of respondents who are informed about the side effects of the methods of birth control they use is high among respondents with higher levels of education.

Among our respondents who used methods of birth control, 33.6 per cent were informed what to do in case, if they experience any difficulty with the use

of the method. A rural-urban break up shows that the percentage who are informed what to do in case, if they experience any difficulty is very high among urban respondents (72.3 per cent) whereas it is very low among respondents from rural areas (18 per cent). Among different educational groups, the percentage who are informed what to do, if they feel any difficulty is very high among degree holders (60 per cent) when compared with those having low levels of education.

The reasons of preferring the current method of contraception shows that 52.7 per cent feel it safe with the method they are using, 21.2 per cent believes that it has less side effects, and 15 per cent felt that it is both safe and has less side effects. Other reasons for preferring the current method of contraception shows that it is either more economic (4.9 per cent) or free of cost and the rest (2.2 per cent) gave some other reasons. The percentage of respondents who feel that the method of birth control they currently use has fewer side effects is higher in urban areas (27.7 per cent) when compared with rural areas. The respondents who are degree holders preferred the current method of birth control mainly because 60 per cent of them felt it safe and the rest felt it as having less side effects.

Among the respondents who used methods of birth control, only 11.1 per cent experienced health problems related to its use. Back pain, allergy, bleeding and other health problems are cited by those respondents who complained that they have problems with the use of birth control methods and majority of these respondents (76 per cent) went for further consultancy. Among those who went for further consultancy 57.9 per cent went to private while 42 per cent went to government hospitals.

Female sterilization is the most important and common method of birth control among our respondents and it is in line with what is observed at the state level. Our respondents who were sterilized were asked the age at the time of sterilization. Age at the time of female sterilization by religion is given in Table 6.47. It is alarming to note that 6.7 per cent of our respondents, who are sterilized, got it done before the age of twenty and 28.9 per cent got sterilized between the ages of twenty and twenty-five. Majority of our respondents who got sterilized did it between the age of twenty-five and thirty. The percentage that got sterilized between the age group of 40-45 years is 2.2 per cent. The percentage of respondents who are sterilized between the age group of 20 to 25 is highest among Muslims (33.33 per cent). The percentage of respondents who are sterilized below the age of 25 comes too high as 40 per cent of the total respondents who are sterilized among Muslims. Thus, the percentage that is sterilized at an early age is high among Muslims.

**Table 6.47****Age at the Time of Female Sterilization - Religion-wise**

| Age Group    | Religion       |               |               | Total          |
|--------------|----------------|---------------|---------------|----------------|
|              | Muslim         | Hindu         | Christian     |                |
| Less than 20 | 4<br>(6.06%)   | 2<br>(9.52%)  | --            | 6<br>(6.66%)   |
| 20 to 25     | 22<br>(33.33%) | 4<br>(19.04%) | --            | 26<br>(28.9%)  |
| 25 to 30     | 22<br>(33.33%) | 6<br>(28.57%) | 2<br>(66.67%) | 30<br>(33.33%) |
| 30 to 35     | 11<br>(16.66%) | 5<br>(23.81%) | 1<br>(33.33%) | 17<br>(18.9%)  |
| 35 to 40     | 6<br>(9%)      | 3<br>(14.29%) | --            | 9<br>(10%)     |
| 40 to 45     | 1<br>(1.5%)    | 1<br>(4.76%)  | --            | 2<br>(2.2%)    |
| Total        | 66<br>(100%)   | 21<br>(100%)  | 3<br>(100%)   | 90<br>(100%)   |

Source: Primary Data.

Respondents were asked whether they received necessary follow up after the IUD loop insertion and sterilization. Majority of them (57.6 per cent) said that they received the necessary services after loop insertion and sterilization. Among our respondents 42.4 per cent rates the services that they received during sterilization and loop insertion as good, 40 per cent as very good and the rest, rates it as not so good (17.6 per cent). Respondents suggested shorter waiting (44 per cent), more cleanliness (40.8 per cent) better care by staff and doctor (13.6 per cent) and more privacy (1.6 per cent) as ways to improve the quality of the services provided at the time of sterilization and loop insertion.

Respondents who are not using any method of birth control were asked whether they plan to use any method in the next twelve months. Majority of

them (98.8 per cent) responded 'no', to this query. They were also asked whether they plan to use any method of birth control, any time in future. Here also majority (92.6 per cent) said 'no', which reveals that they are not favouring the use of birth control methods. Among those who said 'Yes' (7.4 per cent) to our query on their future plans on contraception, majority preferred to use female sterilization.

Among our respondents, only 65 per cent have heard or seen messages about family planning, in the past twelve months. The percentage of respondents who have not seen or heard any message on family planning is the lowest among Christians (15.4 per cent) and in urban areas (28.9 per cent). The percentage of respondents who have not seen or heard any message on family planning is low among respondents with higher levels of education. Among the respondents who have seen or heard messages on family planning, majority said that both television and messages seen in hospitals (41.5 per cent) are the sources from which they came to know about family planning. Television (28 per cent), messages seen in hospitals (21 per cent) and newspapers are the media through which our respondents came to know about messages on family planning.

### **6.3 CONCLUSION**

The above analysis of fertility behaviour of our samples of Malappuram district reveals a number of facts, confirming that Malappuram is backward with respect to demographic transition. The mean age at the time of first marriage for females, males and the age at the time of dissolving marriage is the lowest among the religious group of Muslims. Mean age at first pregnancy is also the lowest among Muslims. Mean age at first marriage and mean age at first pregnancy is found to increase with an increase in the educational attainment of

our samples. Mean age at marriage and pregnancy is seen to decline over the years when samples were categorized on the basis of their year of marriage. Females, who had eight and more number of pregnancies, were either illiterate or had only 1-4 years of schooling. The incidence of epidemic diseases like cholera, typhoid and diarrhea as causes of death of children is seen only among those respondents with less than 10 years of schooling. Mothers who responded that they were unaware of the treatment of the disease that caused the death of their children had only 1 to 4 years of schooling.

The incidence of induced abortions is seen to be the lowest among Muslims and highest among Christians. Increase in education is also associated with a decline in the incidence of stillbirths and foetal deaths with the exception to the category of professionals. The females who terminated their undesired pregnancies are lowest among Muslims. The termination of undesired pregnancies is relatively high in rural areas than in nuclear families. Mean number of children ever born is highest among Muslims and mean number of boys and mean number of girls is also highest among Muslims. Mean number of children is seen to decline with an increase in the educational attainment of females. Mean number of dead children is also low among the females with higher levels of education. Mean number of children is seen to increase with an increase in the age of females, showing that it is the aged samples that have more children. Besides this, the break-up of samples on the basis of their year of marriage shows a decline in the number of children born. Thus as years pass, the importance attached to the number of children declines.

Females who said that they are not satisfied with the number of children they have are high among Muslims and in rural areas. More than one-third of the

females are not satisfied with the sex-composition of children they have. This is found highest among Christians. The desired number of children is also high among Muslims. It is interesting to note that females who desires to have two and more sons, and no more girls to attain their desired sex composition in the highest among Muslims. Nearly 60 per cent of Muslims prefers a family size of 3-4 children where as majority of the respondents of other religious groups prefers to have 1-2 children. Son preference is relatively strong among Muslims, but is found to decline with an increase in education. Son preference is found to be relatively strong in rural areas.

Female sterilization is the most important method of birth control that is adopted, irrespective of place of residence and income. The use of temporary methods of birth control is seen high in urban areas and among females having more years of education. Among Muslims the age at sterilization is relatively low, when compared with other religious groups. Females who used a scientific method of birth control even before having a child and after one child are the highest among Christians. The use of contraceptive is comparatively late among Muslims.

Thus, we find that the present sample of Muslim community is backward when compared with other religious groups, with respect to a number of demographic and fertility indicators. However, this difference in fertility observed between religious groups is more pronounced in the case of respondents having low-levels of educational attainment. All the demographic indicators of educated and employed respondents among Muslims confirms with the trend observed among other religious groups. Thus, the educational backwardness of Muslims in Malappuram district is seen to result in the

relatively high fertility, noticed in this district. It is consoling to note that the fertility is declining in Malappuram and that the greatest fall in fertility is noticed in Malappuram district in Kerala in the last decade.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

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Thesis submitted to the University of Calicut  
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**CHAPTER VII**

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**ANALYSIS OF THE DETERMINANTS OF  
FERTILITY TRANSITION IN  
MALAPPURAM DISTRICT**

- 7.1 *Analysis of Individual Factors*
- 7.2 *Analysis of the Impact of Age at Marriage,  
Female Education, Male Education, Female  
Income and Religion*
- 7.3 *Analysis of the Impact of Male and Female  
Education*
- 7.4 *The Complete Model*
- 7.5 *The Reduced Model*
- 7.6 *Conclusion*

## CHAPTER -VII

### **ANALYSIS OF THE DETERMINANTS OF FERTILITY TRANSITION IN MALAPPURAM DISTRICT**

Fertility transition depends on a number of factors like biological, psychological, physiological, social, economic, cultural and so on, and a combination of more than one factor. Hence it is extremely difficult to compartmentalize various studies emphasizing the factors determining fertility. In this chapter we focus on the socio-economic factors affecting fertility and certain broad agreements on the inter-relationships between fertility and socio-economic and demographic factors are discerned. First we consider the individual influence of various socio-economic factors on children ever born to our samples. Second, we examine influence of the factors, which have significant individual influence on children ever born. Then we analyse the relative influence of male and female education on children ever born. Then we proceed to the complete model and the reduced model of the determinants of fertility transition in Malappuram district.

#### **7.1 ANALYSIS OF INDIVIDUAL FACTORS**

In this section, we analyse the individual influence of ten socio-economic factors like age at marriage, number of years of migration of the husband, number of years of female schooling, religion, number of years of male schooling, female employment, family income, place of residence, nature of family and female income on children ever born to our sample population. Here, religion, female employment, place of residence and nature of family are treated as dummy variables. The results of the simple regressions are shown in Table

7.1. The variables that have a significant statistical influence are marked with stars. We proceed by observing the influence of all the ten variables one by one.

**Table 7.1**  
**Results of the Simple Regressions**

| Sl. No. | Variable             | Coefficient of the constant | 't' value of the constant | Coefficient of the variable | 't' value of the variable | F     | Adjusted R-square d |
|---------|----------------------|-----------------------------|---------------------------|-----------------------------|---------------------------|-------|---------------------|
| 1       | Age at Marriage*     | 6.5279                      | 12.443                    | -0.1967                     | -6.560                    | 43.03 | 0.1208              |
| 2       | Migration            | 3.161                       | 27.264                    | -0.0046                     | -0.255                    | 0.07  | -0.0031             |
| 3       | Female Education*    | 4.866                       | 23.577                    | -0.2269                     | -9.347                    | 87.37 | 0.2201              |
| 4       | Religion*            | 2.625                       | 12.719                    | 0.7098                      | 2.957                     | 8.75  | 0.0247              |
| 5       | Husband's Education* | 4.064                       | 18.644                    | -0.1209                     | -4.763                    | 22.69 | 0.0662              |
| 6       | Female Employment    | 3.204                       | 28.709                    | -0.5971                     | -1.616                    | 2.61  | 0.0052              |
| 7       | Family Income        | 3.176                       | 23.479                    | -0.0025                     | -0.317                    | 0.10  | -0.0029             |
| 8       | Place of Residence   | 3.408                       | 15.919                    | -0.3429                     | -1.390                    | 1.93  | 0.0030              |
| 9       | Nature of Family     | 3.166                       | 23.438                    | -0.449                      | -0.204                    | 0.04  | -0.0031             |
| 10      | Female Income *      | 3.2109                      | 29.459                    | -0.0001                     | -2.365                    | 5.59  | 0.0148              |

**1. Age at Marriage:** It is often felt that the enhancement of age at marriage leads to a reduction in the number of children born. This inverse relationship has been depicted in various studies, namely Davis (1963)<sup>1</sup>, Agarwal (1966)<sup>2</sup>, Gulati (1969)<sup>3</sup>, Cassen (1978)<sup>4</sup>, Sathar et al. (1988)<sup>5</sup>, Ogawa and Retherford (1993)<sup>6</sup>. Length of schooling is associated with the start of reproductive life, that is, the age at marriage and age at child bearing. Late marriage as a result of an increase in the number of years of education helps to ease the population pressure in any community. The association between children ever born and age at marriage is analysed with the help of a simple regression model. The result of our study

helps us to infer that age at marriage has a significant negative influence on children ever born, among our samples.

**2. Migration:** Migration could have positive and negative impact on fertility. Migration should lead to an increase in birth rate due to structural factors (lower age at marriage for girls in migrant households), but should lead to a decline in fertility due to behavioural factors (Physical separation, increased cost of accommodation and education, better information on family planning services etc.). Zachariah et al. (2000)<sup>7</sup> observe that migration has, on the whole a negative impact on fertility. However, from our study we see that the influence of migration is not statistically significant and hence, we conclude that migration is not an important factor affecting fertility of our samples in Malappuram district.

**3. Female Education:** Education has long been recognized as a crucial factor influencing women's childbearing pattern. An extensive demographic literature is devoted to examining the role of female education in promoting sustained fertility decline. Studies analysing fertility differentials by educational status of females generally reveal a negative association between fertility and education [Cochrane (1979)<sup>8</sup>, Caldwell (1980)<sup>9</sup>, Liven (1991)<sup>10</sup>, Jejeebhoy (1995)<sup>11</sup> and Ainswork et al. (1996)<sup>12</sup>]. In other words, higher educated mothers are found to concentrate more on improving the quality of their children rather than their number. Our study arrives at the similar conclusion of these studies and female education is an important determinant of fertility among our samples.

**4. Religion:** Almost all religions preach that children are the blessings of God and they should not be denied. In urban areas, the hold of religion and grip of orthodoxy is very much loosing itself and hence family planning devices are adopted without much hesitation. This is an important reason for low fertility in

urban areas. In many studies, fertility among Muslims has been observed to be higher than other religious groups [(Davis (1951)<sup>13</sup>, Dandekar (1967)<sup>14</sup>, Morgan et al. (2002)<sup>15</sup>, Iyer (2002)<sup>16</sup>, Bhat and Zavier (2004)<sup>17</sup>]. However, it is observed that religious differentials in fertility and in the use of family planning methods decline with the increase in education and socio-economic development. The influence of religion on fertility is analysed with the help of a simple regression model where religion is treated as a dummy variable and the value assigned for Muslims is 'one' and for non-Muslims is 'zero'. Our study finds that fertility is relatively higher among Muslims, when compared with non-Muslims. Thus, the fertility of Muslims is statistically and significantly different from that of Non-Muslims.

**5. Husband's Education:** Assortive matching is common among societies. ie, each partners education has a casual effect on his/her partner's education. Educated husbands may prefer wives with higher education and vice versa. Hence we consider the influence of husband's education is number of years on children ever born. Our study shows that husband's education has significant individual influence and the influence is negative.

**6. Female Employment:** Another important factor which influences fertility is the occupation of the couple, to be more specific; the occupation of females. It is usually seen that those engaged in mental work have less number of children, compared with those who do some sort of physical labour. Women's work is widely seen an important component of female agency, empowering women in society. It plays a significant role in reducing gender inequality, and is also seen to affect levels of fertility and child mortality. This transmission mechanism becomes easier when women are educated and exposed to mass media. Folbre

(1994)<sup>18</sup> and Feng and Quanhe (1996)<sup>19</sup> addresses the movement of women into paid employment (non-familial employment) as an important factor that depresses fertility. The influence of female employment on fertility is analysed with the help of a simple regression model where female employment is treated as a dummy variable. The result shows that female employment is not an important variable effecting fertility among our samples of Malappuram District. This can be due to the lowest work participation rate (6.6 per cent), especially of females, of Malappuram district.

**7. Family Income:** Empirical studies on the relationship between economic status and fertility depict two types of relationships. Demographers like Sinha (1957)<sup>20</sup> and Okpala et al. (1996)<sup>21</sup> find the relationship to be inverse between fertility and income to depict economic status. On the other hand, we find that the United Nations – Government of India Survey of Mysore (1961)<sup>22</sup> established a positive relationship between fertility and economic status of the family. Though we find a negative relationship between income and children ever born in our study, the result is not statistically significant. Hence, we infer that the individual influence of family income on fertility is not significant among our samples of Malappuram district.

**8. Place of Residence:** Fertility differentials exist by rural-urban residential status. It is generally believed that urbanization is not conducive for fertility. This is on account of the high cost of living in cities, which families with a big size cannot afford. Studies by Cassen (1978)<sup>23</sup>, Zeng and James (1989)<sup>24</sup> and Benefo and Schultz (1996)<sup>25</sup> observe that urbanization plays a significant role in depressing fertility. While regressing children ever born on place of residence, values are given in such a way that for residents in urban areas it is 'zero' and for

residents in rural areas it is 'one'. This is based on the general observation that fertility is lower in urban areas. From this study, we find that urbanization is not a significant factor influencing the fertility behaviour among our samples.

**9. Nature of Family:** Family system also affects fertility behaviour. Fertility differentials exist by type of family structure, ie, joint family or nuclear family. Usually fertility is found to be low in nuclear families than joint families, especially when both husband and wife are employed. This is on account of the fact that there is no elder lady at home to look after the children. On the other hand, in the joint family, there is no such problem because even if both husband and wife are employed, there are many elder ladies who can look after the children and as such the couples are less bothered about the number of children they have. The variable 'nature of family' is treated as dummy variable where joint families are coded 'one' and nuclear families 'zero'.

**10. Female Income:** Socio economic development, especially of females influence fertility behaviour. Educational attainments of persons give new avenues for them to raise their social status, encourage them in non-familial activities, and expose them to various communication media. Fertility is found to be high in societies where woman are confined only to household job when compared with the societies where the woman are expected to participate in all walks of life, along with men. Similarly, educated and employed woman also avoid having big families. Female income is often treated as an indicator of female autonomy. Regression of fertility on female income shows an inverse relationship between these variables and is statistically significant among our samples. But the influence is negligible and this can be on account of low work

participation rate for females in Malappuram, which naturally leads to low female income.

The above analysis of the individual influence of ten socio-economic factors on children ever born shows that five variables have significant influence. They are age at marriage, female education, religion, husband's education and female income.

**7.2 ANALYSIS OF THE IMPACT OF AGE AT MARRIAGE, FEMALE EDUCATION, MALE EDUCATION, FEMALE INCOME AND RELIGION**

From the earlier section, we have seen that the age at marriage, female education, husband's education, religion and female income have a significant influence on fertility. As these variables have an individual influence on children ever born, we also examined their combined influence using the following multiple regression model. Figures given in the parenthesis represents the 't' values.

$$CEB = f(AAM, FED, HED, RIN, REL) \tag{7.1}$$

$$CEB = \alpha_0 + \beta_1 AAM + \beta_2 FED + \beta_3 HED + \beta_4 RIN + \beta_5 REL + U \tag{7.1.1}$$

$$CEB = 6.863 - 0.1256 AAM - 0.1933 FED - 0.0067 HED + 0.00009 RIN - 0.1047 REL \tag{7.1.2}$$

(9.6266) (-3.5179) (-5.9327) (-0.2309) (1.3255) (-0.4191)

$$R^2 = 0.2585$$

$$F = 20.986$$

where,

CEB = Children Ever Born

AAM = Age at Marriage of females

FED = Female Education in number of years

HED = Husband's Education in number of years

RIN = Female Income

REL = Religion

**Table 7.2**

**Analysis of the Impact of AAM, FED, HED, RIN and REL on CEB**

| <b>Variables</b>    | <b>Coefficients</b> | <b>t Stat</b> |
|---------------------|---------------------|---------------|
| Constant            | 6.863017            | 9.626643062   |
| Age at Marriage     | -0.12557            | -3.517868852  |
| Female Education    | -0.19331            | -5.932743621  |
| Husband's Education | -0.00668            | -0.230925686  |
| Female Income       | 0.00009             | 1.325490344   |
| Religion            | -0.10473            | -0.419145252  |

Equation 7.1.2 regresses CEB on a set of five independent variables viz, AAM, FED, HED, RIN, REL and the result of this multiple regression is represented in Table 7.2. The Table clearly depicts that among these five variables, the most significant variable that influence CEB is female education (FED). Age at marriage is the other significant variable that affects fertility among these five selected variables. Though HED, RIN and REL do not have a significant statistical influence on fertility in this multiple regression, these variables have an individual influence on fertility.

### 7.3 ANALYSIS OF THE IMPACT OF MALE AND FEMALE EDUCATION

There is nothing new about the belief that the spread of education with its impact on knowledge and outlook is a central force behind demographic transition. Education may inculcate a greater sense of personal responsibility for one's children and control over the welfare of children. Educational attainment a society is highly associated with the level of socio-economic development. It is argued that the primary determinant of the timing of the onset of fertility transition is the effect of mass education on families. Generally, couples having higher educational achievements depict lower fertility. But whether the influence of male and female education on fertility is similar or not is an important matter of concern. To analyse the relative influence of male and female education on children ever born, we use the following econometric model.

$$CEB = f(FED, HED) \quad (7.2)$$

$$CEB = \alpha_0 + \beta_1 FED + \beta_2 HED + U \quad (7.2.1)$$

$$CEB = 4.8311 - 0.2347 FED + 0.0124 HED \quad (7.2.2)$$

(21.703) (-7.761) (0.428)

$$F = 43.66$$

$$\bar{R}^2 = 0.2180$$

where,

FED = Number of years of female education

and HED = Number of years of husband's education .

Table 7.3 presents the result of the multiple regression of female and male education on fertility. The result of this multiple regression model shows that female education is inversely related to fertility and is an important determinant of children ever born. Thus, female education seems indeed to matter more than male education in determining the number of children born to couples among our samples of Malappuram district. This result of our study is in conformity with the findings of Breierova and Duflo (2002)<sup>26</sup> and Aainsworth et al. (1996)<sup>27</sup> in their study also found that female education is a stronger determinant of fertility than male education.

**Table 7.3**

**Influence of Male and Female Education on Children Ever Born**

| <b>Variables</b> | <b>Co-efficient</b> | <b>'t' value</b> |
|------------------|---------------------|------------------|
| Constant         | 4.8311              | 21.703           |
| Female Education | -0.2347             | -7.761           |
| Male Education   | 0.0124              | 0.428            |

**7.4 THE COMPLETE MODEL**

Fertility transition depends on a number of socio factors like education, migration, religion, employment, income, nature of family, age at marriage place of residence, and so on. The fertility transition patterns observed over various regions have differed in terms of the variable that initiated the transition and in the tempo of change in the vital rates. This difference can be attributed to the disparities in economic development in different societies. Thus each socio-economic development pattern shapes and creates an accompanying demographic pattern. Notestien (1953)<sup>28</sup> and Davis (1963)<sup>29</sup> try to justify the

anomalous pattern seen in fertility transition in terms of disparities in economic development.

To discern the important factors that affect fertility, we build a multiple regression model, including all the variables that seem to be important in determining fertility in Malappuram district. This empirical model of fertility determinants regresses children ever born to each woman on a set of ten independent variables. The model can be expressed in the following mathematical form.

$$CEB = f(\text{MIG, AAM, FED, REL, HED, EMP, FIN, PRE, NFA, RIN}) \quad (7.3)$$

$$CEB = \alpha_0 + \beta_1 \text{MIG} + \beta_2 \text{AAM} + \beta_3 \text{FED} + \beta_4 \text{REL} + \beta_5 \text{HED} + \beta_6 \text{EMP} + \beta_7 \text{FIN} + \beta_8 \text{PRE} + \beta_9 \text{NFA} + \beta_{10} \text{RIN} + U \quad (7.3.1)$$

$$CEB = 4.9120 + 0.0084 \text{MIG} - 0.1140 \text{AAM} - 0.2022 \text{FED} - 0.0983 \text{REL} - 0.0276 \text{HED} - 2.3712 \text{EMP} + 0.4807 \text{FIN} - 0.3646 \text{PRE} - 0.1824 \text{NFA} + 0.7110 \text{RIN} \quad (7.3.2)$$

(3.7095) (0.5323) (-3.0972) (-6.2187)  
(-0.3900) (-0.9362) (-1.635)  
(2.0162) (-1.6042) (-0.937)  
(1.6962)

$$R^2 = 0.2821$$

$$F = 11.6320$$

where,

MIG = Number of years of Husband's migration

AAM = Age at Marriage of Females

- FED = Number of years of Female education
- REL = Religion
- HED = Number of years of Husband's education
- EMP = Female Employment
- FIN = Family Income
- PRE = Place of Residence
- NFA = Nature of Family
- RIN = Female Income

Equation 7.3.2 gives the complete model of determinants of fertility and shows the relative influence of various socio-economic factors in determining fertility among our samples of Malappuram district. The result of the complete model is shown in Table 7.4. Out of the ten independent variables selected, three variables viz, age at marriage, female education and family income are found to influence of fertility and the influence of these variables are statistically significant. Female education and age at marriage have a strong inverse relationship with children ever born to women whereas family income is positively related to children ever born. The relatively low R squared for this model may be due to the inclusion of four dummy variables and due to the influence of exogenous factors on fertility.

**Table 7.4**

**Result of the Complete Model**

| <b>Variables</b>    | <b>Coefficients</b> | <b>t Stat</b> |
|---------------------|---------------------|---------------|
| Constant            | 4.912058            | 3.709458      |
| Migration           | 0.008424            | 0.532306      |
| Age at Marriage     | -0.11401            | -3.09718      |
| Female Education    | -0.20223            | -6.21867      |
| Religion            | -0.0983             | -0.39003      |
| Husband's Education | -0.02762            | -0.93624      |
| Female Employment   | -2.3712             | -1.63452      |
| Family Income       | 0.480683            | 2.016182      |
| Place of Residence  | -0.36459            | -1.60421      |
| Nature of Family    | -0.1824             | -0.93701      |
| Female Income       | 0.711004            | 1.6962        |

**7.5 THE REDUCED MODEL**

Out of the ten independent variables selected, we have seen that AAM, FED and FIN are the important variables affecting fertility behaviour of our samples. Based on this finding, we formulate the reduced model of determinants of fertility transition among our samples of Malappuram district and the results of this model are presented in Table 7.5. The model can be expressed as follows:

$$CEB = f(AAM, FED, FIN) \tag{7.4}$$

$$CEB = \alpha_0 + \beta_1 AAM + \beta_2 FED + \beta_3 FIN + U \tag{7.4.1}$$

$$CEB = 3.9979 - 0.10278 AAM - 0.20563 FED + 0.51377 FIN$$

$$(3.3574) \quad (-3.4026) \quad (-7.6456) \quad (2.2294) \tag{7.4.2}$$

$$R^2 = 0.2654$$

$$F = 36.4957$$

**Table 7.5**

**Results of the Reduced Model**

| <b>Variables</b> | <b>Coefficients</b> | <b>t Stat</b> |
|------------------|---------------------|---------------|
| Constant         | 3.997933            | 3.357482      |
| Age at Marriage  | -0.10278            | -3.40264      |
| Female Education | -0.20563            | -7.64555      |
| Family Income    | 0.513774            | 2.229412      |

From the above analysis of determinants of fertility, we conclude that female education, age at marriage and family income are the most important variables that affect the fertility behaviour of our samples of Malappuram district. A number of factors like biological, physiological and psychological affect fertility and these factors influence fertility exogenously. This seems to be a reason for low R squared for the models.

**7.6 CONCLUSION**

Out of the ten variables selected, we found that five variables viz, age at marriage, female education, husband's education, religion and female income exerted an individual influence on children ever born. However, when these five variables were taken together, only two variables viz, age at marriage and female education proved to be statistically significant. Again, when the number of children born was regressed on female and male education, the impact of female education proved to be significant and strong when compared with education of males (husband's). In the complete model also we find that female education is highly significant. Besides female education, age at marriage and family income also influence fertility significantly. Thus, among all the socio-economic factors considered, female education seemed to be the major determinant of fertility among our samples of Malappuram district.

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**FEMALE EDUCATION AND DEMOGRAPHIC TRANSITION IN  
KERALA WITH SPECIAL REFERENCE TO  
MALAPPURAM DISTRICT**

**By  
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Thesis submitted to the University of Calicut  
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**CHAPTER VIII**

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**SUMMARY, MAJOR FINDINGS AND  
CONCLUSION**

8.1 *Summary*

8.2 *Major Findings*

8.3 *Conclusion*

## CHAPTER -VIII

### **SUMMARY, MAJOR FINDINGS AND CONCLUSION**

The nexus between population and economic development is very complex. An accelerating population growth increases the share of 'demographic investments' and the danger of poverty, unemployment and inequalities. This calls for attention on the part of policy makers to curtail the growth rate of population.

Education as an investment in human resources plays an important role among the factors, which contribute to economic growth. Synchronizing with human investment revolution in economic thought, many countries around the world, and more particularly the newly independent developing countries, including India expanded their educational systems and made heavy investments in education. The family is the world's smallest school. Most children in developing countries spend more time with their mothers than with any other educational medium, including school. In fact, when women are educated, they tend to encourage their children to become educated as well. Thus education, especially female education and associated variables play a catalytic role in demographic transition.

#### **8.1 SUMMARY**

Population explosion is a concrete reality in the third world countries including India. The level of population in these countries has become larger than what can be sustained at the existing level of development. Socio-economic

transformation is the effective solution to the problems of population growth and related issues. Thus, economic development is a central factor in the solution to population and interrelated problems in developing countries. As population is a major determinant of the level of development of a nation, human development is necessary because it helps to lower family size by slowing human reproduction. Increased educational facilities make people aware of the benefit of a small family and reduction in infant mortality reduces the incentives of having large families as fewer child deaths are now feared.

The study consists of eight chapters. The first chapter is an introductory one and deals with the nexus between population and economic development, importance of education in economic development and female education and demographic transition and briefly examines the socio-economic status of Muslims in India. Besides these, the first chapter gives the significance, objectives, data source, sample selection, definition of concepts, methods of analysis and limitations of the study. In Kerala, little effort has been made in studying the impact of female education on the demography of the backward districts of the state, especially Malappuram. Thus, the present study has significance and aims to fill this gap. The study is an attempt to analyse the extent of influence of female education on the demography of the state in general and Malappuram district in particular.

The present study has four objectives. Firstly, it examines the trend and pattern of demographic transition in India by major states, with emphasis on the state of Kerala. Secondly, it analyses the trend and pattern of demographic transition in Kerala, district wise, with special reference to Malappuram district. Thirdly, the role of female education on the demographic variables of the state is

analysed. Lastly, the influence of various socio-economic factors in demographic transition in Malappuram district is discerned on the basis of primary data. The introductory chapter is followed by seven chapters, which fulfil the goal and objectives of the present study.

The second chapter gives a detailed review of literature on female education and demographic transition and the theoretical issues related to fertility. An extensive review of literature on female education and demographic transition at international, national and state levels is attempted in this chapter. Studies on fertility are not unique in the sense that the models differ from each other in the determinants of fertility. Several theoretical models have been formulated by eminent demographers. The existing studies are categorised into the following depending upon the determinants of fertility decline – Fertility and Contraceptive Use, Fertility and Child Mortality and Fertility and Maternal Education. Among these categories, our study comes in the third category, which links maternal education and fertility.

The third chapter examines the demographic and structural features of population of India by fifteen major states. This chapter satisfies the first objective by examining the trend and pattern of demographic transition in India with special reference to Kerala, and throws light on the inter-state disparities in demographic transition in India. It shows the existence of 'North-South' demographic disparity and clearly depicts that the 'BIMARU' states are lagging behind in several respects when compared with other states of India. From this chapter, it is seen that Kerala is ahead of the rest of the Indian states with respect to demographic transition and a number of structural variables.

Among the states of India, Kerala is the state where the growth rates of population, birth, death, infant mortality and fertility rates are the lowest. Female age at marriage, life expectancy, literacy rates and sex ratio registered its highest value in Kerala. Kerala is also ahead of all other states with respect to health and education, and hence ranks first in human development. Kerala is also the state where poverty is comparatively low and ranks third among the states with lowest poverty. The southern states like Tamil Nadu, Andhra Pradesh and Karnataka also follow the same suit as that of Kerala while the northern states, especially BIMARU states, have still a long road to travel.

The fourth chapter is on the analysis of the trend and pattern of demographic transition in Kerala, district wise with special reference to Malappuram district. This chapter satisfies the second and third objectives of the present study. There exist wide variations in demographic and structural features of population among the districts of Kerala. Moreover, the pace of demographic transition is not the same for all the districts of Kerala and this is especially true in the case of Malappuram district. From this chapter, it is crystal clear that Malappuram district is the demographically vulnerable district of Kerala.

Malappuram is the district, which has the largest size of population and the highest growth rate of population. Statistical figures on the demographic features of Malappuram show that crude birth rate, total fertility rate, proportion of females married below the age of 20, child woman ratio, and dependency ratio, are highest in this district of Kerala. It is also the district having the lowest couple protection rate, crude death rate and mean age at marriage for both males and females. Malappuram it is also having the second highest child mortality ratio.

An examination of the structural features of population shows that Malappuram is having the lowest work participation rates (for both males and females) and per capita income. Literacy rate of this district lies below the state average while sex ratio and density of population are above the state average. Malappuram district is having the third lowest urban population among the districts of Kerala. Number of schools, arts and science colleges, and hospital beds in relation to population are lowest in this district. Thus, the structural factors conducive to demographic transition register an unfavorable trend. Besides Malappuram, Kasargod is also lagging behind with regard to a number of demographic variables.

Statistical evidence helps us to conclude that Malappuram is demographically vulnerable district of Kerala. The correlation matrix worked out on the basis of data on three points of time establishes a high degree of negative association between female education, crude birth rate, total fertility rate, crude death rate, infant mortality rate where as mean age at marriage and couple protection rate are positively related to female education. Thus it is seen that female education has a significant role in influencing demographic variables.

The profile of the sample area and the sample with focus on the education and employment of the samples is attempted in the fifth chapter. This chapter deals with selection of samples, general details of the sample households, housing conditions, socio-political involvement, education and attitude towards education and details on employment of our samples. This chapter clearly reveals that the educational attainment is very low among the religious group of Muslims when compared with non-Muslims. Besides this, gender inequality is seen in educational aspirations for children among our samples. Early marriage,

economic problems of the household and low parental motivation are important reasons for cutting short the education of girls.

Details on employment show that Muslims are lagging behind with regard to participation in employment activities. Their employment in government and private sector is the lowest and their average monthly salary is also the lowest, when compared with other religious groups.

Attitudes on education influence the educational attainment and employment of people and their fertility decisions, as fertility and education are inversely related. As Muslims form the single largest majority in Malappuram, and as their attitude on education is less progressive when compared with other religious groups, it certainly influences the fertility behaviour of the people.

An elaborate exposition of fertility and family planning among our samples is presented in the sixth chapter. The analysis of fertility behaviour of our samples of Malappuram district reveals a number of facts, confirming that Malappuram is backward with respect to demographic transition. The mean age at the time of first marriage for females, males and the age at the time of dissolving is the lowest among the religious group of Muslims. Mean age at first pregnancy is also the lowest among Muslims. Mean age at first marriage and mean age at first pregnancy are found to increase with an increase in the educational attainment of our samples. Mean age at marriage and pregnancy is seen to decline over the years when samples were categorized on the basis of their year of marriage. Females, who had eight and more number of pregnancies, were either illiterate or had only 1-4 years of schooling. Mothers who responded that they were unaware of the treatment of the disease that caused the death of their children had only 1 to 4 years of schooling.

In the seventh chapter, we analyse the individual influence of ten socio-economic factors like age at marriage, number of years of migration of the husband, number of years of female schooling, religion, number of years of male schooling, female employment, family income, place of residence, nature of family and female income on children ever born to our sample population. Here, religion, female employment, place of residence and nature of family are treated as dummy variables. Out of the selected variables female education is found to have a strong influence on fertility. Besides female education, age at marriage and family income are also found to affect fertility significantly.

This chapter (eighth) is a concluding one. It gives a brief summary of the study, major findings that emerge from the study based on both primary and secondary data and the concluding remarks.

## **8.2 MAJOR FINDINGS**

The major findings that emerge from the present study are shown below under two headings, viz, findings from secondary data and findings from primary data.

### **8.2.1 Findings from Secondary data**

- In India, the states of Bihar, Madhyapradesh, Rajasthan and Uttarpradesh (BIMARU States) are demographically vulnerable, whereas the southern states exhibit favourable demographic trends. Among the southern states, Kerala ranks first with respect to demographic transition.
- Kerala state has the lowest crude birth rate (15.0 per 1000), crude death rate (6.4 per 1000), infant mortality rate (14 per 1000), decadal growth

rate of population (9.4 per cent) and total fertility rate (1.93) among the Indian states.

- The female average age at marriage is 22 years and is the highest in Kerala.
- The male literacy (94.2 per cent) and female literacy (87.9 per cent) are the highest in the state of Kerala among the Indian states.
- Life expectancy for males (70.6 years) and females (76.1 years) are the highest in Kerala.
- Kerala ranks first in Human Development Index, Gender Equality Index and in primary health and education poverty is the third lowest. In Kerala, among the Indian states.
- Malappuram is the most populated district in Kerala having the highest decadal growth rate of 17.22 per cent whereas it is the lowest in the district of Alappuzha (5.21 per cent).
- Crude birth rate is the highest in Malappuram (22.4 per 1000), whereas it is the lowest in Pathanamthitta (14.5 per 1000).
- Crude death rate is the lowest in Malappuram (4.08 per 1000) and it is highest in Thrissur (7.34 per 1000).
- Total fertility rate is 2.4 in Malappuram, while it is found to be the lowest in Pathanamthitta, Alappuzha and Ernakulam (1.5). The only district in Kerala, which has not attained Zero Population Growth, is Malappuram.

- The mean age at marriage is the lowest in Malappuram (24.7 years for males and 18.7 years for females). Mean age at marriage for males is the highest in Thrissur (29.1 years) and for females it is the highest in Kottayam (24.4 years).
- Individual estimates of infant mortality rate show that infant mortality in Malappuram is 26 per 1000, and it is the same as the state average. It is the lowest in Trivandrum (16 per 1000) and the highest in Kozhikode (34 per 1000).
- Couple Protection Rates are the lowest in Malappuram (49.6 per cent) and are the highest in Trivandrum and Pathanamthitta (90.3 per cent).
- Malappuram is having a literacy rate for both males (91.46 per cent) and females (85.96 per cent) below the state average.
- In Malappuram sex ratio (1063) and density of population (1022) are found to be higher than the state average.
- Malappuram is characterised by the lowest work participation rate for both males (42.8 per cent) and females (6.6 per cent).
- The percapita income is the lowest in the district of Malappuram.
- The number of educational institutions and institutions for higher education is very low in Malappuram, when compared with the population of the district.
- The number of health institutions per lakh population (6) and the number of hospital beds per lakh population (81) are the lowest in the district of Malappuram.

- Malappuram district ranks last with respect to Human Development Index and Gender Development Index.
- Correlation analysis shows that female literacy is inversely related to crude birth date, crude death rate, infant mortality rate and total fertility rate. Female literacy is directly related to the mean age at marriage and the couple protection rate. Thus the influence of female education on demographic variables seems to be very strong.

## **8.2.2 Findings from Primary data**

### **Education and Attitude Towards Education**

- Females having ten or fewer years of schooling are the highest among the religious group of Muslims, when compared with Hindus or Christians. It is as high as 75.9 per cent.
- Mean years of schooling for females shows that it is relatively higher among Christians (12.08 years) followed by Hindus (8.29 years). It is lowest among Muslims (7.06 years). For all the respondents, it is 7.45 years
- Respondents who are not willing to educate their children is found highest among Muslims (12.3 per cent) when compared with Hindus (4.5 per cent). No respondent belonging to Christianity expressed their unwillingness in educating their children.
- Opinion on the willingness to educate children of both sexes equally reveals that one fifth of our samples are not willing to educate their boys and girls equally. A religious wise break up of our samples shows that the

percentage of respondents who are not willing to educate girls on a par with boys is high among Muslims (23.8 per cent) followed by Hindus (16.4 per cent), whereas all the respondents belonging to Christianity revealed that they prefer to educate children of both sexes equally. Education wise break up of the samples shows that the percentage of respondents who are not willing to treat children of both sexes equally (with regard to education) declines with an increase in the educational attainment of the respondent. The reasons given for this gender-biased treatment in education are religious (33.8 per cent), economic (21.15 per cent), additional burden at the time of marriage (18.5 per cent), and others.

- Attitude on whether girls' education is more fruitful than boys was gathered. Nearly half of the respondents belonging to Muslim community (49 per cent) responded that girls' education is not as fruitful as that of the boys. Majority of the respondents belonging to Christians (61.53 per cent) and Hindus (56.7 per cent) opined that girls' education is more fruitful as it empowers them, increases the socio-economic status of the family and creates a better future generation.
- Females with higher levels of education are more willing to send their girls for job when compared with females having low levels of education. Nearly half of the respondents (49 per cent) who are not ready to send their girls for job even if she gets it opined that 'females need not go for job'. This argument is found to be the highest among the religious group of Muslims.

- Early marriage (36 per cent) and economic problems (25 per cent) are the dominant factors that prevented the use of educational facilities by our respondents. Lack of parental consent, distance and transportation problems and the burden of household activities are also cited as factors that prevented them from getting educated. Only Muslims (9.7 per cent) pointed lack of parental motivation and consent as factors that prevented them from getting educated. In the case of their children, economic problems are more dominant than early marriage, which stands in the way of their childrens' education.
- There exists educational backwardness among Muslims on account of attitudinal problems (20.3 per cent), early marriage (33.7 per cent), and religious orthodoxy and lack of social awareness (46 per cent).
- Educational aspirations of children (both boys and girls) are high among Christians, while they are the lowest among Muslims. The percentage of respondents who wish to educate their girls till the commencement of marriage comes to 23.12 per cent and this tendency is found to be the highest among Muslims (28.6 per cent) followed by Hindus (8.95 per cent) and it is nil among Christians.
- Majority of the respondents prefer to educate both boys and girls upto the desire of their children. But the respondents who prefer to educate their boys' upto the desire of their children is certainly high (69.4 per cent) when compared with the respondents who prefer to educate their girls' upto the desire of their child (41.36 per cent).

## Employment

- A religion wise break up of the respondents who go for job shows that it is high among Christians (38.46 per cent), followed by Hindus (13.43 per cent) and is very low among Muslims (3.52 per cent). Majority of the respondents who works in government sector are Christians whereas it is low among Muslims. The percentage of respondents working as teachers is high among Christians and all the Christian samples who are employed are teachers while this percentage is lowest among Muslims. The percentage of respondents who work as 'coolie' and who are self employed is seen only among the religious group of Muslims.
- The average monthly salary is also low for Muslims (Rs.3325) when compared with other religious groups (Rs.5528). Increased earnings accompany increase in educational attainment from employment, irrespective of religion.
- Only 27.4 per cent of the members of our sample households go for one or the other type of work or employment. Among those who go for work, majority work for daily wages as coolies (10 per cent). The percentage of non-resident Indians comes to 5.6 per cent, self-employed - 3.3 per cent, business - 2.7 per cent, government service - 2.2 per cent, any other job - 2.8 per cent and agriculturists - 0.7 per cent. Thus the role of agriculture and industry in generating employment and providing a source of livelihood is insignificant among our sample households.

## **Socio Political Involvement**

- The respondents who did not use their right to vote (9.4 per cent) is also high among respondents with low levels of education and among Muslims (11 per cent). It is also high in rural areas (11.7 per cent).
- Only 6.2 per cent of our respondents have political activities and this participation is high among the respondents with degree and above. Participation in political activities is relatively high among Christians (15.9 per cent) while it is lowest for Muslims (3 per cent).
- Participation in women's associations or organisations is found high among respondents with low income and is also low among those with more years of schooling.
- Kudumbhasree units, Self Help Groups and Ayalkkootams are the most important women agencies in which our respondents are participating. Among those who participated in these agencies 67 per cent opined that it helped in providing job and raising socio-economic status of the women.

## **Marriage**

- Dissolved marriages is high among Muslims (6.6 per cent) and the respondents who are married more than once is also high among Muslims (5.3 per cent). The percentage who are married more than once is three among Hindus while it is zero for Christians. Harassment by in-laws are pointed as the main reason for dissolving marriages in rural areas whereas dowry, wife beating and physical and mental illness of either husband or wife are equally important reasons in urban areas.

- Current staying status of females with their husband shows that it is lowest among Muslims (57.7 per cent). This is on account of migration and the percentage of husbands gone abroad is highest among Muslims (30.8 per cent). Of all of our respondent's husbands who have gone abroad, majority have gone to Middle East countries (86.6 per cent).
- Migration helped in increasing the family income and in improving the standard of living. Unfortunately, the percentage of females who does not go for work in their husband's absence is very high.
- The practice of polygamy still exists in Malappuram district (8 per cent) and is relatively high among respondents belonging to Muslim community. The percentage of husbands of our respondents having another wife is highest among Muslims (10 per cent) followed by Hindus (3.2 per cent) and it is zero among Christians. Males who have more than two wives are seen only among the Muslims. The incidence of polygamy is higher in rural areas and among nuclear families. It is also seen that an increase in the level of education is associated with one marriage.
- Mean age at first marriage is highest among Christians (20.85 years) followed by Hindus (19.94 years) and is the lowest among Muslims (16.09 years). Mean age at first marriage among Muslims is lower than that prescribed by the Marriage Act. It is also seen that mean age at marriage increases with an increase in the educational attainment. This is true among all the religious groups.
- Mean age at the time of dissolving first marriage is as low as 17.5 years among Muslims.

- Mean age at marriage of males is also lowest among Muslims (24.82 years) while it is highest among Christians (28.62 years). It is also seen that mean age at marriage for males is high for those with higher levels of education.
- Mean age at marriage among Muslims show an increasing trend over the years. It is 14.08 for females who are married before 1970 and it increased to 15.8, 16.31, 17.00 and to 19.00 years respectively in the decades 1970-1980, 1980-1990, 1990-2000 and 2000 and after. Among other religions also, mean age at marriage has increased over the years.

### **Pregnancy**

- Mean age at first pregnancy is also the lowest among Muslims (17.41 years) while it is highest among Christians (22.54 years).
- On account of the occurrence of still births/spontaneous abortions/induced abortions, only 67 per cent of females got a surviving child from their first pregnancy. The percentage of females who did not get a surviving child from their first pregnancy is found high among Christians (46.2 per cent) and among joint families (40 per cent) when compared with nuclear families (28 per cent).
- On account of various diseases, 15.3 per cent of our respondents lost at least one of their children. Incidence of epidemic diseases like cholera, typhoid and diarrhoea as causes of death of children is seen only among those respondents with less than ten years of schooling. Mothers who responded that they were unaware of the treatment of the disease that caused the death of their children had only 1 to 4 years of schooling.

- Among our samples, 27.4 per cent had either stillbirths or spontaneous abortions or induced abortions. Of our samples 5 per cent had stillbirths. The incidence of spontaneous and induced abortions comes to 14 per cent and 10.74 per cent respectively. The percentage of females who had induced abortions is 9.69 per cent among Muslims, 13.43 per cent among Hindus and 15.38 per cent among Christians. Increase in education is associated with a decline in the incidence of stillbirths or spontaneous abortions or induced abortions with the exception to the category professionals. It is slightly high in urban areas.
- Respondents who have not become pregnant come to 6.8 per cent. Among those who have not become pregnant, 66 per cent have completed more than 5 years after marriage. The incidence of samples who have not become pregnant is high in rural areas.
- Females who had one and two pregnancies are highest among Christians whereas females who had more than three pregnancies are the highest among Muslims. It is seen that the number of pregnancies declines with an increase in educational attainment. Respondents who had six and above number of pregnancies were either illiterate or had only 1 to 7 years of schooling.
- The mean number of pregnancies is declining over the years. It declined from 5.13 before 1990 to 2.53 in 1990-2000 among our samples. Among Muslims, the mean number of pregnancies declined to 2.78 between 1990-2000 from 5.38 before 1970. Among Hindus it declined from 4.67 to 1.95 and among Christians it declined from 5.00 to 2.50 during the same period.

- Mean number of pregnancies is the highest among other backward castes (3.53) and is the lowest among other eligible castes (2.5).
- Mean number of pregnancies is high for urban samples (3.79) whereas it is 3.33 for rural areas.
- Mean number of pregnancies is low for employed samples (2.96) when compared with unemployed samples (3.4).
- Mean number of pregnancies is seen to decline with an increase in education. For illiterates, it is 4.63 whereas for degree holders it is 2.15.
- Mean number of pregnancies by religion shows that it is 3.6 for Muslims, 2.94 for Hindus and 3.31 for Christians. For all respondents it is 3.45.
- The decision maker in the termination of undesired pregnancies shows that the major decision maker among Hindus is husband (53.3 per cent), husband and both husband and wife among Christians (50 per cent each) and mother-in-law among Muslims (40.9 per cent). In the case of Hindus also mother-in-law is a decision maker in the termination of undesired pregnancies (22.2 per cent).
- More than one fourth (26.1 per cent) of our respondents said that none of their pregnancies were at the time they wished for. Incidence of undesired pregnancies is high in rural areas (32 per cent) when compared with urban areas (6 per cent). The percentage of respondents who terminated their undesired pregnancies is lowest among Muslims (10.0 per cent) whereas it is 15.4 per cent among non-Muslims. Incidence of termination of undesired pregnancies is found high in nuclear families (13.1 per cent) when compared with joint families (8.7 per cent).

## Size of the Family

- On an average, the number of members in a Muslim household is higher than that of other religious groups. The mean number of members in Muslim households is 7.08 as against 6.19 for Hindus and 5.9 for Christians.
- Mean number of children ever born is the highest among Muslims (3.33) and is the lowest among Christians (2.54). Mean number of boys (1.70) and girls (1.63) ever born is also high among Muslims. Among the religious group of Hindus the mean number of boys (1.37) is relatively higher than girls (1.27) whereas among Christians, it is higher for girls (1.38) than boys (1.15). Mean number of children is high in urban areas (3.41) and for unemployed women (3.2). Mean number of children declines as the level of education increases. It is 4.36 for those with 1 to 4 years of schooling and 1.78 for those with degree and above.
- Mean number of children is declining among all religions, over the years. Among Muslims it declined from 5.03 among samples who are married before 1970 and is 2.47 among those married between 1990-2000. Among all the respondents it declined from 4.73 among samples married before 1970 to 2.21 among the samples married between 1990-2000. .
- Mean number of dead children is very low among the respondents with higher levels of education. It is 0.08 for respondents who have degree and above whereas for illiterates it is 0.46. Mean number of dead children declines as the respondent's educational attainment.

- Samples who are aged have more children. Seven and more number of children is seen only among respondents who are aged 40 and above. The importance attached to children changes over the years and it is showing a declining tendency among our samples.
- Females who are not satisfied with the number of children they have are high among Muslims (37.4 per cent) and in rural areas.

### **Sex Composition of Children and desired Family Size**

- Of our samples, 37.1 per cent are not satisfied with the sex composition of their children. The percentage of respondents who are not satisfied with the sex composition of the children is highest among Christians (46.2 per cent) while it is lowest among Hindus (32.8 per cent).
- Respondents who desire to have two and more sons to attain their desired sex composition of children is the highest among Muslims (61.6 per cent). On the other hand, respondents who would not like to have any more girls to attain the desired sex composition, is as high as 31.4 per cent among Muslims. It is seen that females belonging to the religious group of Muslims desired to have more boys and girls to attain their desired family size.
- Among Muslims, 59 per cent prefers a family size of 3 to 4 children and 12.8 per cent prefers to have 5 to 6 children. The percentage of respondents who prefer to have 1 to 2 children is found highest among Christians (53.8 per cent) followed by Hindus (49.3 per cent).
- Even in the urban areas of Malappuram, 50 per cent prefers to have 3 to 4 children and the females who prefers to have 1 to 2 children is just 10.5

per cent as against 33.3 per cent in rural areas. It is shocking to note that 32.9 per cent of the respondents living in urban areas preferred 'as many children as given by God as their preferred size of family.

### **Son Preference**

- Sons are preferred to daughters by 25.4 per cent of respondents. The percentage who prefers sons to daughters is highest among Muslims (26.9 per cent) and is nil among Christians. Son preference is found low among those respondents with an educational attainment of degree and above (8.4 per cent) whereas among illiterates it is 33.3 per cent. Son preference is found to be stronger in rural areas (28.6 per cent) when compared with urban areas (15.8 per cent).
- Among our samples 7.2 per cent determined the sex of their unborn child with the help of modern techniques like scanning. It is interesting to note that this habit is seen only among respondents in rural areas.
- If they don't have sons, 20 per cent opined that they would continue child bearing until a boy comes and this response is relatively high among Muslims (23.3 per cent). Majority (63.8 per cent) said that they will stop giving birth after having 3 to 5 girls, in case if they do not get boys.
- Among our respondents, 27.4 per cent opined that females who give birth only to girls are ill treated. This argument is strong among respondents of joint families (32.2 per cent) and majority said that it took the form of verbal harassment.

### **Spacing between children**

- Majority (79.2 per cent) agreed that spacing between children is needed. This argument is strong among respondents with higher levels of education. Those who do not prefer spacing is found high among illiterates (30 per cent). It is Christians who prefer more years of spacing between children when compared with other religious groups.

### **Awareness on AIDS**

- Among our respondents, 11.1 per cent have not at all heard about AIDS and this ignorance is high among Hindus (22.4 per cent) followed by Muslims (8.4 per cent) and is nil among Christians. It is low in urban areas and nil among those with ten and more years of schooling. The respondents who are ignorant about the spread of AIDS is 12.8 per cent and is the highest among Muslims (15 per cent) and in rural areas (15 per cent).

### **Family Planning**

- A health or family planning worker visited majority (82 per cent) of the households at least once in a year. Public sector workers visited majority of the households.
- Among all religious groups, female sterilization is the most important method of birth control that is adopted (40.7 per cent). The percentage of male sterilization is 2.7 per cent and is seen only among the religious group of Christians. The use of temporary methods of birth control is found high in urban areas, and among respondents with higher levels of education. Female sterilization is found highest among illiterates (52.4 per cent).

- It is alarming to note that 6.7 per cent of our respondents who are sterilised got it done before the age of twenty and 28.9 per cent got sterilised between the age of twenty and twenty-five. Majority of respondents who are sterilised got sterilised between the age of 25 and 30 (33.3 per cent). Those who are sterilised below the age of 25 comes too high as 40 per cent of the respondents who are sterilised among Muslims, while this percentage is nil among Christians.
- Females who used a scientific method of birth control even before having one child and after having only one child is high among Christians (50 per cent). Among Muslims, 21.4 per cent, used a method of birth control after having 3 children, 14.5 per cent after having fourth child and 7.6 per cent after the fifth child.
- Regression result strengthens our argument of strong inverse relationship between education and fertility. Female education seems to be the most important determinant of fertility among our samples. Other factors that influence fertility are age at marriage and family income. Besides these factors, the factors that have an individual influence on fertility are husband's education, female income and religion.

### **8.3 CONCLUSION**

Female education seems to have the most powerful influence on demographic variables because educated women marry later, tend to have fewer children, and are more likely to use effective methods of contraception and have greater means to improve their economic livelihood, thereby slowing population growth. Mother's education is even more important to her children's health as

she can respond to health related emergencies better and can raise a healthier family.

As all demographic variables show favourable tendency among females with high levels of education, irrespective of religions, it is the educational backwardness that lead to high fertility in Malappuram district. Attitude on education influences the educational attainment of people and their fertility decisions, as fertility and education are inversely related. As Muslims form the single largest majority in Malappuram, and as their attitude on education and employment are less progressive than other religious groups, it certainly influences the fertility behaviour of the people. It has been observed that religious differentials in fertility and the use of family planning methods decline with the increase in education and socio-economic development. Thus the operative forces seem to be more socio-economic and educational rather than directly religious.

Even though the link between female education and fertility is very strong, there are various factors, which prevent female education especially among Muslim women. Early marriage and child bearing, additional burden at the time of marriage and economic problems, attitudinal problems and lack of parental motivation are the major factors cutting short the education of girls. Effective enforcement of minimum age at marriage, increase the number of institutions for higher education (in the case of Malappuram district), creation of social awareness regarding the importance of education together with attitudinal change and movement of women into paid employment can help to increase female education and to control population.



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# **APPENDICES**

**Appendix-I**  
**QUESTIONNAIRE**

**A Survey on “Female Education and Demographic Transition in Kerala  
with Special Reference to Malappuram District”**

**I. GENERAL PARTICULARS**

1. Municipality/ Panthayath :
2. a) Ward Number : b) House Number
3. Name of the head of the house hold :
4. Whether the head of the house hold is : a) Normal Resident of India  
b) Non-Resident
5. a) Religion: M/H/C b)Category: SC/ST/OBC/OEC/Others
6. Place of residence : Rural/Urban
7. Nature of the family : Joint/ Nuclear
8. Ownership status of the house : Own/ Rented/ Shared
9. Type of the house : Thatched/ Tiled/ R.C
10. Whether : a) Single storied b) Double storied
11. Number of : a) Bed rooms... b) Bath rooms...  
c) Others...
12. Source of water supply : a) Own well b) Piped  
c) Public well/ tap  
d) Neighbourhood e) River
13. Household durables possessed : a) Computer b) AC c) TV  
d) Fridge e) Washing machine  
f) Electric oven g) Grinder  
h) Mixi i) Electric iron  
k) Kettle l) Gas connection  
m) Telephone n) Vaccum cleaner  
o) Any other (specify)
14. Vehicle owned : a) Two wheeler b) Auto Rickshaw  
c) Car (specify) d) Jeep e) Lorry  
f) Bus (Mini/Heavy)

**II. Family Details**

| Sl. No. | Name | Relationship with the head of the family | Age & Sex | Marital Status | Name of the course (including specialized training) | Private (P) Regular (R) | Main Occupation (a) | Additional Occupation (b) | Monthly income a+b=c |     |     |
|---------|------|--|-----------|----------------|---|-------------------------|---------------------|---------------------------|----------------------|-----|-----|
|         |      |  |           |                |   |                         |                     |                           | (a)                  | (b) | (c) |
|         |      |  |           |                |   |                         |                     |                           |                      |     |     |

Note: Tick the respondent

Married-M, Unmarried-U, Widow-W, Separated-S, Divorced-D

**III. Attitude towards Education**

1. Are you interested in educating your children? : Yes/No
2. If No, give reasons : (a) Economic problems (b) Religious orthodoxy (c) Attitude that children will learn themselves (d) not much to gain out of education (e) Any other (specify)
3. Do you usually engage tuition classes for your children? : Yes/ No
4. If Yes, whether : a) For all subjects  
b) For those in which the child is weak
5. Do you educate your girl child in the same manner as you do for your boy child? : Yes/ No
6. If No, Why?- : (a) Economic problems (b) Religious Orthodoxy (c) Nothing to gain from female education (d) Additional burden at the time of marriage (e) Difficult to find out an educated spouse (f) fear to send girls to education institutions (g) Distance and Transportation problem (h) Any other (specify)
7. Is girls' education more fruitful than boys? : Yes/ No
8. If Yes, why? : (a) A source of income (b) Enhances social status of the family (c) Empowers women (d) Creates better future generation (e) Increases social awareness (f) Any other (specify)
9. Will you allow your girl child to go for a job when she get it? : Yes/ No
10. If No, Why?- : (a) Females need not go for job (b) Insecurity (c) Household management (d) To look after the children (e) To look

- after the old aged (f) Don't have financial problems (g) Attitudinal problems (h) Any other (specify )
11. Do you think that higher education provide increased opportunity for employment? : Yes/ No
  12. If No, Why?-
    - a. Back log of unemployed
    - b. Requires Donation to get job
    - c. Requires political influence
    - d. Any other (specify)
  13. Do you think that education enhances you economic position? : Yes/ No
  14. Is employment the prime benefit from education? : Yes / No
  15. If No, what are the other benefits? : (a) Enhances social status (b) Creates better socio-political awareness (c) Creates better citizens (d) Makes individual rational (e) increase social awareness (f) Any other (specify)
  16. Do you feel that education is an important factor affecting marriage? : Yes/ No
  17. If Yes, how? : (a) Less dowry for educated girl (b) Educated people are more adjustable (c) difficult to find an educated spouse (d) To get an educated spouse more dowry is needed (e) Any other (specify)
  18. Do you think that female education will liberate them? : Yes/ No
  19. Do you think that female education will make them more rational? : Yes/ No
  20. Do you feel that you have made the use of the educational facilities available to you : Yes/ No
  21. If No, give reasons : (a) Economic problems (b) Early marriage (c) Husband doesn't allow (d) Parents doesn't allow (e) Parents-in law doesn't allow (f) Distance and Transportation problem (g) None to help in house hold activities (h) Any other (specify)
  22. Do you feel that you have made/ are making use of the educational facilities available to your children : Yes/ No
  23. If No, give reasons : a/ b/ c/ d/ e/ f/ g/ h (Options same as question number 21)
  24. Is there educational backwardness among Muslims? : Yes/ No
  25. If Yes, give reasons : (a) Religious Orthodoxy (b) Lack of social awareness (c) Inadequate educational institutions (d) Attitudinal

- 26. What are your suggestions to improve the educational and social status of Muslims? : (a) Giving proper awareness regarding the importance of education (b) Increase in the number of educational institutions (c) reservation (d) improve the means of transportation (e) change the attitude of the people towards education (f) any other (specify)
- 27. Do you feel that women should be given higher education in all branches of knowledge on a par with men? : Yes/ No
- 28. If No, give reasons? : (a) Incompetence (b) Problem of household management (c) Insecurity (d) Males and females are not equal (e) Any other (specify)
- 29. What is the attitude of your family members to getting your children, especially female children educated? : (a) Strongly Agrees (b) Agrees (c) Strongly disagree (d) Disagree (e) Indifferent
- 30. What is the desirable minimum level of education in your view?  
Boys: a) Upto  
Girls : b) Upto  
a) Upto the desire of the child  
b) Upto the desire of the child  
c) Upto the marriage
- 31. Do you usually read a news paper/ magazine at least once a week? : Yes/No
- 32. Do you usually listen to a radio/ TV at least once a week? : Yes/No
- 33. Do you go to a cinema hall/theatre to see a movie at least once in a month? : Yes/No
- IV Employment Particulars:**
- 1. Are you employed : Yes/No
- 2. If Yes,  
a) Designation :  
b) Working in : Govt/Private/Quasi-govt.  
c) Nature of the present job : Permanent/Temporary/semi-permanent  
d) Monthly Salary : Rs.
- 3. Any additional job & Salary : Yes/No
- 4. If Yes,  
a) Designation :  
b) Salary :
- 5. What are the reasons for your working? :  
a) Economic Necessity  
b) To supplement family income  
c) To pass time  
d) Professional obligation  
e) To avoid drudgery  
f) To attain economic independence  
g) Forced by relatives  
h) To develop personality  
i) To serve the society  
j) To improve the social status

- k) Desire to work
  - l) Any other (specify)
6. Distance and Means of reaching the work place :
    - a) Distance : ..... Kms
    - b) Means of transportation : Walking/Bus/Own car-Jeep/ Two Wheeler/Train
  7. Is the present job in tune with your qualifications? : Yes/No
  8. If No, Why? :
    - a) Over Qualified
    - b) Preference for white collar jobs
    - c) Requires donation to get a job suited to qualifications
    - d) Problem of house hold management
    - e) Distance
    - f) Preference for govt. job
    - g) Objection by husband
    - h) Objection by parents
    - i) Objection by in laws
    - j) Any other (specify)
  9. Is this your most preferred job? : Yes/No
  10. If No, which is your most preferred job? :
  11. Are you looking for better jobs? : Yes/No
  12. If Yes, What is the reason? :
    - a) Higher income
    - b) Job satisfaction
    - c) Nearer to home
    - d) Security
    - f) More leisure time
    - g) Any other (specify)
  13. Do you feel that you are getting a salary in accordance to your qualifications? : Yes/No
  14. If No, what is the minimum expected salary? : Rs.
  15. Do you contribute money as a deposit, to any Agency/Institution/Management for getting the job? : Yes/No
  16. If Yes, How much? : Rs.
  17. Do you get the salary/wages equal to your male colleagues? : Yes/No
  18. If No, Why? :
    - a) Gender discrimination
    - b) Any other (specify)
  19. What is the top most position held by a woman in your office?  
Designation :
  20. In your opinion, what are the factors responsible for the promotion of a woman at your work place? :
    - a) Seniority
    - b) Qualifications

- c) Influence
  - d) Personal Relationship
  - e) Efficiency
  - f) Community considerations
  - g) Any other (specify)
21. What are the physical facilities provided to woman worker at your office? :
- a) Separate toilets
  - b) Rest rooms
  - c) Recreational facilities
  - d) Any other (specify)
22. How are your relationships at place of work with others? :
- a) Good
  - b) Formal
  - c) Informal
  - d) Satisfactory
  - e) Bad
  - f) Worst
23. Who motivated you for the present job? :
- a) One decision
  - b) Husband
  - c) Mother
  - d) Father
  - e) Mother in law
  - f) Father in law
  - g) Relatives
  - h) Friends
  - i) Any other (specify)
24. How long have you waited for the job after the completion of your education? :
- a) Months :
  - b) Years :
25. Have you ever-felt sex based discrimination in your work organization? :
- Yes/No
- i) If Yes, what type of discrimination did you face? :
- a) Income/Wage
  - b) Extra labour
  - c) Over time with no payment
  - d) Any other (specify)
- ii) Whether - Gross discrimination/ subtle discrimination :
26. With this job are you able to take care of your children properly? :
- Yes/No
27. If No, give reasons :
- a) Lack of time
  - b) Household responsibilities
  - c) Any other (specify)
28. Do you find it difficult to play the double roles? :
- Yes/No
- a) If Yes, how would you rate your burden? :
- a) Difficult

- b) Will you quit the job, if you find it that difficult? : Yes/No
29. What is your view regarding women going for job? :
- a) Strongly Agrees
  - b) Agrees
  - c) Strongly disagree
  - d) Disagree
  - e) Indifferent
30. What is your husband's attitude towards women going for job? :
- a) Strongly Agrees
  - b) Agrees
  - c) Strongly disagree
  - d) Disagree
  - e) Indifferent
31. If unemployed, Why didn't you go for a job suited to your educational qualifications and ability? :
- a) Cant get the job
  - b) Requires donation
  - c) Not interested
  - d) Lack of proper job searching
  - e) Can't find a job suited to the Social status
  - f) Doesn't have financial problems
  - g) Attitudinal problems
  - h) Husband Doesn't allow
  - i) Difficult to look after children
  - j) House old burden
  - k) Old aged at home
  - l) Any other (specify)

#### V Data on Reproduction

1. Have you been married only once or more than once? : Once/More than once
2. How old were you at the time of your first marriage? :
3. Did your first marriage dissolve? : Yes/No
4. If Yes, How old were you at that time? :
5. What are the reasons for dissolving the marriage? :
- a) Dowry
  - b) Harassment by in-laws
  - c) Infertility (Husband-Wife)
  - d) Extra marital affairs (H/W)
  - e) Being suspicious (H/W)
  - f) Physical illness (H/W)
  - g) Mental problem (H.W)
  - h) Wife beating
  - i) Burden of house hold management
  - j) Cant adjust
  - k) Alcoholism

- 6. Were you interested in Divorce? : Yes/No
- 7. If No, Who took initiative? :
  - a) Husband
  - b) Parents-in-law
  - c) Father
  - d) Mother
  - e) Brothers
  - f) Sisters
  - g) Friends
  - h) Relatives
  - i) Others
- 8. Did you re-marry? : Yes/No
- 9. If Yes, at remarriage :  
How many times?
- 10. Give reasons for your remarriage :
  - a) Social Security
  - b) To have children
  - c) Old age security
  - d) To have physical support & moral support
  - e) Any other (specify)
- 11. How old were you/your husband at the time of your current marriage? :
  - Age of husband :
  - Age of wife :
- 12. How old were your husband at the time of his first marriage? :  
Age :
- 13. Are you living with your husband now or is he staying else where? :
  - a) Living together
  - b) Gone abroad
  - c) Gone for job
  - d) Separated
  - e) Divorced
  - f) Dead
- 14. If gone abroad/gone for job, at what intervals you & Your husband join family? :
- 15. If gone abroad, to which country has he gone? :
- 16. Do you feel that your husband's migration have influenced you life favourably? :
- 17. If Yes, how? :
  - a) Increased income
  - b) Better standard of living
  - c) Better social status
  - d) Can help relatives and others
  - e) Any other (specify)
- 18. How many years have passed since your husband migrated? :
- 19. Do you go for work in your husband's absence? : Yes/No

20. If No, why? : a) Don't have financial difficulty  
 b) Not interests/Fearing social blame  
 c) Husband does not allow  
 d) Any other (specify)
21. In the absence of your husband how would you get things done at home? : a) Self  
 b) With the help of relatives  
 c) Friends  
 d) Servants
22. Does your husband have wife/wives other than you? : Yes/No
23. If Yes, No. of wives (Other than the respondent) :
24. Does he have children in other wives? : Yes/No
25. If Yes, how many? :
26. Have you ever become pregnant? : Yes/No
27. If Yes, at what age did you first become pregnant? :
28. Have you ever given birth? : Yes/No
29. Did you get a surviving child from your first pregnancy? : Yes/No

Give the sex based order of your children (including the dead ones)

|       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| Order | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Sex   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| Age   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |

(round the dead children)

31.

|                          |      |       |       |
|--------------------------|------|-------|-------|
|                          | Boys | Girls | Total |
| Total number of children |      |       |       |
| Alive                    |      |       |       |
| Dead                     |      |       |       |

32. Were your dead children suffering from any illness : Yes/No
33. If Yes, from which illness? : a) Premature birth  
 b) Cholera  
 c) Typhoid  
 d) Diarrhea  
 e) Jaundice  
 f) Chicken pox  
 g) Measles  
 h) Improper development of internal organs  
 i) Tuberculosis  
 j) Cancer  
 k) Blood group problem (RH factor)  
 l) Blood relation problem  
 m) Malnutrition  
 (n) Any other (specify)
34. Were you aware of the treatment for the disease? : Yes/No

35. If Yes, did you go for medical treatment? : Yes/No
36. Which system of medicine did you go for? :  
 a) Alopathy  
 b) Homeopathy  
 c) Ayurveda  
 d) Traditional healer
37. Why didn't you take the child for treatment, through you were aware of the treatment of the disease/problem? :  
 a) Economic problems  
 b) Blind religious faith  
 c) Thinking that disease are quite natural  
 d) Husband didn't allow  
 e) In-laws (father/mother) didn't allow  
 f) Any other (specify)
38. If your dead children were not suffering from any illness, give the cause of death. Specify :
39. Did you have still births (S.B.), Spontaneous abortion (SA), & Induced abortions (I.A.) in your reproductive span? : Yes/No
40. If Yes, give details

| Still Births (S.B.) No.           | Spontaneous Abortions (S.A) No.                  | Induced Abortions (I.A.) No.          |
|-----------------------------------|--|---------------------------------------|
| a) Ignorance                      | a) I A before giving birth to atleast one child. | a) Divorced                           |
| b) Hard & tough living conditions | b) Hard & tough living conditions                | b) Preference for particular child    |
| c) High BP                        | c) High BP                                       | c) Do not want child now              |
| d) Diabetic                       | d) Diabetic                                      | d) Wants no more children             |
| e) Misbehaviour by husband        | e) Misbehaviour by husband                       | e) Physicall ill-health of mother     |
| f) Accidental Slip                | f) Accidental Slip                               | f) Spacing between children           |
| g) Any other (specify)            | g) Any other (specify)                           | g) Use of medicines                   |
| --                                | --   | h) Improper development of the foetus |
| --                                | --   | i) Any other (specify)                |

41. In total, how many pregnancies did you have in your reproductive span?
42. Are you satisfied with the number of

- children you have?
43. If No, how many children would you like to have? :
- a) .....Children
  - b) As many as might come
  - c) Uncertain
44. Are you satisfied with the number of Male & Female children you have? :
- Yes/No
45. If No, how many male & female children would you like to have? :
- No. of male children .....
- No. of female children .....
46. Would you prefer sons to daughters? :
- Yes/No
47. How important is it to you to have atleast one son? :
- a) Very important
  - b) Some what important
  - c) Unimportant
48. If you do not have sons, what would you do? :
- a) Continue child bearing until a boy comes
  - b) Stop after girls
  - c) Uncertain
49. Do you think that society/family members ill-treats women who have given birth only to female children? :
- Yes/No
50. If Yes, whether - : Verbal harassment/Physical harassment
51. Are you pregnant now? : Yes/No
52. If Yes, why? :
- a) Preference for son
  - b) Desire for more children
  - c) Birth control is sin
  - d) Husband insisted
  - e) Any other (specify)
53. If you are pregnant because of your desire for a particular sex what will you do if it is of the opposite sex? :
- a) Stop
  - b) Continue for one more child
  - c) Continue until the desired one comes
  - d) Will induce abortion if the sex is determined before delivery
  - e) Stop after.....children
  - f) Any other (specify)
  - g) Uncertain
54. Do you usually determine the sex of the child before its birth? :
- Yes/No
55. Of all your pregnancies, how many were at the time you wished for? :
- Yes/No
56. For those pregnancies, which you didn't wish for, did you terminate them? :
- Yes/No
57. If No, give reasons : :
- a) Fear of abortion
  - b) Religious beliefs
  - c) Considering it as a sin
  - d) Fearing society will blame

- e) Fear of husband
  - f) Fear of parents in law
  - g) Fear of parents
  - h) Fearing that it will be difficult to conceive later
  - i) Fear of side effects
  - j) Any other (specify)
- 58) If you terminated your unwanted pregnancies, who took the initiative for it? :
- a) Husband
  - b) Own decision
  - c) Mother in law
  - d) Mother
  - e) Others (specify)
59. What is your preference towards the size of the family? :
- a) 1 to 2 children
  - b) 3 to 4 children
  - c) 5 to 6
  - d) As many children as given by god
60. Do you prefer spacing between children? : Yes/No
61. If Yes, how many years? :
62. How many months/years do you usually breast feed? :
63. Do you expect any kind of help from your children? : Yes/No
64. If Yes, what type of help : a) Old age security  
b) Current financial support  
c) Physical support to the family  
d) Any other (specify)
65. Can you give some of the disadvantages of having children compared with not having children? :
- a) Economic burden
  - b) Increased responsibility
  - c) Any other (specify)
66. Did you/your husband have any problems related to fertility? : Yes/No
67. If Yes, for whom? : Your self/Husband
68. Did you consult a physician? : Yes/No
69. If Yes, did you follow his recommendations? : Yes/No
70. If No, Why? :
71. Have you heard of disease called AIDS? : Yes/No
72. If Yes, Do you know how it spreads? : Yes/No

**VI DATA ON FAMILY PLANNING/CONTRACEPTION**

1. During the last 12 months, has a health or a family planning worker visited : Yes/No

you at home?

2. If Yes, a) Who visited you and b) how many times in the last 12 months?
  - a) Public sector worker (Govt. doctor/ Public health nurse/ Anganadiworker/ Village health guide/Other public sector health worker]/ NGO (doctor/worker)
  - : Private sector worker (Pvt. Doctor/ Pvt. Nurse/ compounder/ Traditional healer/ other private sector health worker] Any other (specify)
  - b) No of times;
3. During these visits, what were the different matters talked about?
  - a) Family planning
  - b) Breast feeding
  - c) Immunization
  - d) Nutrition
  - e) Disease prevention
  - f) Treatment of health problem
  - g) Any other (specify)
4. What type of services did you receive during this visit?
  - a) Immunization
  - b) Family planning devices
  - c) Family planning advice
  - d) Any other (specify)
5. Did you receive the service that you went for (if you have visited any health facility recently?
  - : Yes/No
6. During to visit did the staff spend enough time with you?
  - : Yes/No
7. How was the behaviour of the staff?
  - : Nicely/Some what nicely/Not nicely
8. Did the staff respect your need for privacy?
  - : Yes/No
9. How would you rate the health facility?
  - : Very clean/ Some what clean/ Not clean
10. During any of these contacts, which methods of delaying or avoiding pregnancy were discussed?
  - a) Pill
  - b) Nirodh/Condom
  - c) I U D/loop
  - d) Female sterilization
  - e) Male sterilization
  - f) Natural methods
  - g) Any other (specify)
  - h) Non/Never Discussed
11. Have you ever used anything or tried in any way to delay or avoid getting pregnant?
  - : Yes/No
12. If Yes, what have you used or done?
  - : a/b/c/d/e/f/g/h (options same as question no. 10)
13. How many living children did you
  - : Boys :

have at that time when you first did something or used a method to delay or avoid getting pregnant?

Girls :

Total :

14. Awareness and use of methods of Family Planning

| Methods to delay or avoid pregnancy | Has used | Has heard but hasn't used | Has not heard |
|-------------------------------------|----------|---------------------------|---------------|
| 1. Pills                            |          |                           |               |
| 2. Condom/Nirodh                    |          |                           |               |
| 3. IUD or Loop                      |          |                           |               |
| 4. Female Sterilisation             |          |                           |               |
| 5. Male Sterilisation               |          |                           |               |
| 6. Natural methods                  |          |                           |               |
| 7. Any other (specify)              |          |                           |               |

16. Details regarding the method of contraception

1. Source of obtaining the method :
2. Age of females at the time when the method is adopted :
3. Who decided to use this method? : Husband /Wife
4. Who motivated to use this method? :
  - a) Own interest
  - b) Husband
  - c) Friends
  - d) Parents
  - e) In-laws
  - f) Any other
5. What motivated you to use this method? :
  - a) Economic burden of the house hold
  - b) Spacing between children
  - c) Own health problems
  - d) Illness of children
  - e) To have better standards of living
  - f) Problem of house hold management
  - g) Any other (specify)
6. For how long are you using this method? :
7. Are you informed about the side effects? : Yes/No
8. Are you informed what to do, in case you experience difficulty?
9. What are the reasons for preferring this method to other ones? :
  - a) More economic
  - b) Safe

- c) Less side effects
  - d) Free of cost
  - e) Any other (specify)
10. Did you experience any problem related to the use of this method? :  
Yes/No
11. If Yes, what problems did you face? :
12. Did you go for further consultancy? :
13. If Yes, where? (specify) (options same as question no. 1)
14. I sterilized, give the age at the time of sterilization.  
Age of Husband :  
Age of wife :
15. Did you receive the necessary follow up after the IUD/Loop insertion and sterilisation operation? :  
Yes/No
17. How would you rate the care you/your husband received during or immediately after the operation/ IUD insertion? :  
a) Very good  
b) All right  
c) Not so good  
d) Bad
18. What improvement would you suggest in the care you/your husband receiving during or immediately after the operation/IUD insertion? :  
a) More cleanliness  
b) More privacy  
c) Better care by doctor/staff  
d) Shorter waiting  
e) Any other (specify)
19. Give the order in which you adopted different methods of Family Planning (Rank the methods of contraception) :  
1) Pills  
2) Condoms  
3) IUD/Loop  
4) Sterilization
20. Do you think you will use a method to delay or avoid pregnancy within the next 12 months? :  
Yes/No
21. Do you think you will use a method to delay or avoid pregnancy at any time in future? :  
Yes/No
22. If Yes, which method do you prefer to use? :

- 23. In the last few months, have you heard or seen any message about family planning? : Yes/No
- 24. If Yes, give the communicating media :
  - a) TV
  - b) Messages seen in the hospital
  - c) Radio
  - d) Paper
  - e) Any other (specify)

**VII SOCIAL AND POLITICAL INVOLVEMENT**

- 1. Do you usually vote? : Yes/No
- 2. If no, give reasons : .....
- 3. Are you engaged in political activities? : Yes/No
- 4. If yes, are you a member of any political party? : Yes/No
- 5. Do you usually attend party conferences and meetings? : Yes/No
- 6. Do you participate in any women's association/organisation? : Yes/No
- 7. If yes, in which one? :
  - a) Mahila Samajam
  - b) Ayalkootam
  - c) Kudumbasree
  - d) Self Help Groups
  - e) Stree Sakti
  - f) Social Clubs
  - g) Any other group (specify)
- 8. Has these organization/associations enhanced your life in any way? : Yes/No
- 9. If yes, how? :
  - a) Economically
  - b) By providing job
  - c) Creating Social awareness
  - d) Moral support
  - e) Any other (specify)
- 10. Do you have public library nearby? : Yes/No
- 11. If Yes, do you usually go there? : Yes/No
- 12. Do you go to Church/Temple/Mosque regularly? : Yes/No
- 13. Are you interested in preserving your religious customs and traditions like Namaskar/Haj/Pooja etc. ? : Yes/No
- 14. Do you participate in regional festivals like Palli perunnal/Nercha/Pooram? : Yes/No

**VIII DATA ON BACK GROUND VARIABLES**

1. Details of Education, Employment and income or Parents, Husband and Parents-in laws

| Family Members | Level of Education | Employment Status | Monthly Income |
|----------------|--------------------|-------------------|----------------|
| Mother         |                    |                   |                |
| Father         |                    |                   |                |
| Husband        |                    |                   |                |
| Mother in law  |                    |                   |                |
| Father in law  |                    |                   |                |
| Brothers       |                    |                   |                |
| Sisters        |                    |                   |                |

**IX DETAILS ON INCOME**

1. Extent of land owned : a) Rural :  
b) Urban :
2. Loan if any : Yes/No
3. If Yes,

| Source    | Amount | Interest | Purpose of loan |
|-----------|--------|----------|-----------------|
| Bank      |        |          |                 |
| Chitti    |        |          |                 |
| Relatives |        |          |                 |
| Friends   |        |          |                 |

4. Savings, if any : Yes/No
5. If yes, monthly savings :

**Appendix - II**

**MALAPPURAM DISTRICT AT A GLANCE**

|     |   |              |
|-----|---|--------------|
| 1.  | Area  | 3550 Sq. Km. |
| 2.  | Share of State's area                         | 9.1%         |
| 3.  | Taluks  | 6            |
| 4.  | Blocks  | 14           |
| 5.  | Panchayath                                    | 100          |
| 6.  | Number of Village                             | 135          |
| 7.  | Municipalities                                | 5            |
| 8.  | Corporations                                  | Nil          |
| 9.  | Households (as per 1991 census) in thousands  | 477          |
| 10. | Population                                    |              |
|     | Population (as per 2001 census)               | 3629640      |
|     | a) Male                                       | 1759479      |
|     | b) Female                                     | 1870161      |
| 11. | Share of SC population                        | 19%          |
| 12. | Share of ST population                        | 3.4%         |
| 13. | Density (as per 2001 census)                  | 1022         |
| 14. | Education                                     |              |
|     | a) General Literacy Rate (as per 2001 census) | 88.61%       |
|     | b) Male                                       | 91.5%        |
|     | c) Female                                     | 86.0%        |
|     | d) SC (as per 1991 census)                    | 79.03%       |
|     | e) ST (as per 1991 census)                    | 43.93%       |
|     | f) Gross Enrolment Ratio                      | 96.8%        |
|     | g) Cohort Retention Rate to Std. X            | 84.9%        |
|     | h) Student Teacher Ratio                      | 31           |
| 15. | Economy                                       |              |
|     | a) Share of primary sector                    | 26.6%        |
|     | b) Share of secondary sector                  | 17.4%        |
|     | c) Share of tertiary sector                   | 56.0%        |

|     |                  |  |        |
|-----|------------------|--|--------|
|     | d)               | Percapita Income PPP (\$)                  | 1,881  |
| 16. | Employment       |  |        |
|     | a)               | WPR  | 24.1%  |
|     | b)               | Main workers                               | 671486 |
|     | c)               | Cultivation workers                        | 6.5%   |
|     | d)               | Assistant Labourers                        | 17.8%  |
|     | e)               | Workers in household                       | 1.9%   |
|     | f)               | Other workers                              | 73.8%  |
| 17. | Household status |  |        |
|     | a)               | Household with Pucca house                 | 68%    |
|     | b)               | Electrified houses                         | 63.8%  |
|     | c)               | Water closet latrines                      | 76.8%  |
|     | d)               | Water within 100 metre distance            | 90.8%  |
| 18. | Infrastructure   |  |        |
|     | a)               | Area served under per post office (sq. km) | 8.1    |
|     | b)               | Telephone per 1000 ppm                     | 149    |
|     | c)               | Road length per 10 sq. km.                 | 51.5   |
|     | d)               | Ration shops                               | 1125   |
|     | e)               | Ration card holders                        | 555023 |

**Appendix – III**

**GENERAL PROFILE OF THE SAMPLE AREA**

| Sl. No. | Name of the Panchayth/ Municipalities | Area in Sq. Km. | No. of Wards | Total population including institutional & Houseless population |        |       | Density of population in sq. Km. | Sex Ratio | Literacy rate |        |       |
|---------|---------------------------------------|-----------------|--------------|---|--------|-------|----------------------------------|-----------|---------------|--------|-------|
|         |                                       |                 |              | Male  | Female | Total |                                  |           | Male          | Female | Total |
| 1.      | Cherukavu                             | 16.87           | 10           | 12670   | 12652  | 25322 | 1501.01                          | 999       | 94.74         | 88.41  | 91.57 |
| 2.      | Thanoor                               | 19.49           | 15           | 26535   | 27708  | 54243 | 2783.12                          | 1044      | 86.17         | 73.67  | 79.92 |
| 3.      | Thirunavaya                           | 19.58           | 12           | 17904   | 19963  | 37867 | 1933.96                          | 1115      | 88.90         | 79.63  | 84.26 |
| 4.      | Vettathoor                            | 35.84           | 9            | 10950   | 10807  | 21757 | 607.06                           | 987       | 91.37         | 82.99  | 87.18 |
| 5.      | Malappuram                            | 33.61           | 24           | 24612   | 25080  | 49692 | 1478.49                          | 1019      | 95.98         | 90.81  | 93.39 |
| 6.      | Perinthalmanna                        | 34.41           | 12           | 18911   | 201166 | 39027 | 1134.18                          | 1064      | 95.18         | 88.35  | 91.76 |

### Appendix - IV

#### DISTRICT WISE AND RELIGION WISE POPULATION – 2001

| District           | Hindus   | Muslims | Christians | Others |
|--------------------|----------|---------|------------|--------|
| Thiruvananthapuram | 2202112  | 431512  | 595563     | 5169   |
| Kollam             | 1685044  | 474071  | 423745     | 2348   |
| Pathanamthitta     | 694560   | 56457   | 481602     | 1397   |
| Alappuzha          | 1457188  | 208042  | 441643     | 2287   |
| Kottayam           | 963497   | 116686  | 871371     | 2092   |
| Idukki             | 566744   | 81222   | 480108     | 1147   |
| Ernakulam          | 1444994  | 451764  | 1204471    | 4569   |
| Thrissur           | 1761842  | 488697  | 720152     | 3541   |
| Palakkad           | 1802766  | 703596  | 109249     | 1871   |
| Malappuram         | 1057418  | 2484576 | 80650      | 2827   |
| Kozhikode          | 1669161  | 1078750 | 127468     | 3752   |
| Wayanad            | 392141   | 209758  | 175495     | 3225   |
| Kannur             | 1480748  | 665648  | 261019     | 1541   |
| Kasargod           | 705234   | 413063  | 84891      | 890    |
| All Kerala         | 17883449 | 7863842 | 6057427    | 36656  |