CHAPTER 2:
REVIEW OF LITERATURE

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References
CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

There is a considerable amount of study on fertility that deals with the theoretical explanation of fertility transition. These studies describe how populations change from balanced regimes of high fertility/high mortality to regimes of low fertility/low mortality. There are also empirical evidences on fertility differentials by religion. It has generally been observed that the Catholic dominated countries had higher fertility than the Protestant dominated countries and the Muslim dominated counties have still higher fertility than Christian or Buddhist dominated countries. Further in multi-religious countries certain religious groups have higher fertility than the others. Demographers have proposed various theories of fertility transition and certain hypotheses to explain fertility differentials among the religious groups. This chapter is divided into two parts. Theoretical explanations and the hypotheses regarding religious fertility differentials are discussed in the first part. In the second part empirical evidences of the influence of religion on fertility all over the world, especially in India and in Kerala are reviewed.

2.2 Demographic Transition Theory

The first ever-recorded sustained decline in fertility occurred in France in 1830. It is also in the Francophone Europe that the first suggestions for a structured explanation of that phenomenon appeared. Writing on depopulation and civilization in 1890 the French author Dumont introduced a new principle that “the wish to improve one’s position politically, economically and as far as education and culture are concerned, led to an excessive predominance of individual tendencies”, and
that “while the principle of social mobility was a necessary condition for all progress, it had a detrimental effect upon the birth rate”. Other French writers of the same period, who were concerned about the decline in the birth rate, also stressed the role of mental factors in the phenomenon (Van de Kaa, 1996).

The French concept of demographic revolution was reconsidered later on. In the new theory of demographic transition the process of modernisation and its economic aspect was emphasised more strongly. Population trends were seen mainly as a function of progress. Rapid population growth and the subsequent slowing of the growth because of the decrease in the family size were considered the cultural traits expressions of progress. Their development was not haphazard (Kirk, 1944). To quote Kirk, “Modern education, improved health condition and economic advance are parts of the same cultural complex indigenous to the West”.

Davis used the term ‘Demographic Transition’ in the title of his paper published in 1945. But Notestein is rightly credited with the ‘demographic transition theory ’ in its most explicit and comprehensive form (Davis 1945; Notestein 1945; Thompson 1929). Apart from it’s modeling of three phases of demographic change, which had strong heuristic appeal, propositional statements articulating causal mechanisms came somewhat haphazardly in the theory’s development. Notestein’s (1945) original formulation assumed that mortality decline was quickly achieved during industrialization and modernization, but fertility reduction lagged behind owing to the ‘traditional’ pronatalist social norms and strictures, that resulted in a transitional stage characterized by rapid population growth. To him, the whole process of modernization had an effect in raising the living standards, controlled over disease, and reduced mortality. He concluded that, ‘the reduction of fertility requires a shift in
social goals from those directed toward the survival of the group to those
directed toward the welfare and development of the individual’.

Davis’s (1963) theory of change and response asserted that
mortality reduction was the quintessential harbinger of the demographic
transition. When faced with improved child survival, households must
chose between having more children or the upward social mobility without
many children. According to Davis, mobility usually won. Davis suggested
that a sustained natural increase resulting from continued decline in
mortality in the context of economic development produced a multiphased
demographic response, involving postponement of marriage, increased
celibacy, resort to abortion, use of contraception and migration\(^1\). The most
important step in demography occurred in 1956 when Davis and Blake
presented a limitative list of eleven intermediate fertility variables, all of
which played significant roles in the chain of events that determined the
exposure of the couples to the risk of conception and of the outcome of
pregnancy (Davis, Blake, 1956).

Bongaarts worked on the eleven variables of Davis and Blake and
reduced them into three groups of exposure factors, deliberate marital
control and natural marital control factors. From this Bongaarts developed
a simple equation which summarised the relationship between four most
significant intermediate fertility variables identified as, the proportion
married, the degree of non contraception, abortion, and lactational
infecundability (Bongaarts, 1976, 1978).

\(^1\) Regardless of nationality, language and religion each industrializing nation tended to
postpone marriage to increase celibacy, to resort to abortion, to practice contraception in
some form and to emigrate overseas. The timing and the relative importance of the reactions
were not identical in the various countries, and of course the method could not be used that
were not then technically feasible for the public at large (e.g., harmless sterilization); but the
remarkable thing is that, that they did so in each case with the reappearance of the whole
range of responses and that virtually the entire panorama was later repeated in Japan
(Davis,1963: 350-51)
One of the most obvious propositions in demographic transition theory is related to the role of mortality decline. It should be noted that the effect of mortality decline was different depending on whether or not the population concerned practised birth control to a certain degree. Different hypotheses such as; child survival hypothesis, child replacement hypothesis, reduction in uncertainty hypothesis and insurance against widowhood hypothesis; were formulated regarding the mechanisms that played a role in making fertility responsive to a decline in mortality (Van de Kaa, 1996).  \(^2\) In the late 1960s and early 1970s the interest in the effect of mortality decline was very strong. It was strongly believed that without a reduction in mortality, people would be reluctant to accept family planning (Freedman, 1963).


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\(^2\) \textit{Child Survival Hypothesis}: If couples wish to have a certain number of surviving children, too large a number of surviving children could alert them to the fact that fewer births are needed to ensure the desired number of survivors. In this approach, it is the excess number of living children which triggers the reaction.  
\textit{Child Replacement Hypothesis}: As long as mortality is high many families will experience the death of one or more children. They will try to ‘replace’ these children with more births. As mortality fall, replacement will no longer be necessary. Hence fertility will decline.  
\textit{Reduction in Uncertainty Hypothesis}: Under conditions of high mortality, families must anticipate the loss of one or more children before they become adults. Couples guard against having no adult children to care for them in their old age, by producing a large number of children than they desire as surviving children. As mortality declines the uncertainties involved are reduced, hence, fertility can decline.  
\textit{Insurance Against Widowhood Hypothesis}: Where high mortality prevails, men and women are at high risk of being widowed at a relatively younger age. This may lead to great economic hardship, particularly for women. Therefore, women are interested in having children as soon as possible after marriage, and have them in quick succession as insurance against become a destitute widow. Once mortality declines, the risk and uncertainties diminish and, hence, fertility decline.
broad influence of Davis’s (1963) dictum that macro level explanations of fertility behavior must link to micro-processes (i.e., methodological individualism), the literature on fertility was dominated by the search for micro level and proximate determinants of fertility behavior.

Central to wealth the flow theory is the idea that fertility will start to decline as soon as the net economic advantages from children are no longer anticipated. But the value of children cannot be measured solely in economic terms. Freedman, (1967), observed that fertility was determined by intermediate variables such as marriage, union formation, and the use of contraception, which in turn depended on the attitudes of the people to fertility and the intermediate variables themselves. Ultimately all these are influenced by socio-psychological variables and by social demographic variables rooted in the general value system of a society.

The demand theory of fertility as first formulated by Becker in 1960 combined the basic aspects of both the Malthusian and Darwinian approach to population. In this theory the demand for children was considered to vary with income, and because it was at least implicitly recognised that the quality and quantity of children might also be chosen to maximise the number of descendants in the next generation (Becker, 1991). As consumer durables, children were assumed to provide utility. The utility from children was compared with that from other goods by way of a utility function or by a set of indifference curve. The demand theory does not give any specific consideration to the supply side (Schultz, 1976).

Esterlin (1978), made his famous attempt to combine demand and supply in one model to arrive at a synthesis of the economics and sociology of fertility. This theory extended the neoclassical model by emphasizing more on sociological interpretations of supply, demand and cost of children. Esterlin and Crimmins studied the theoretical effect of
changes in these basic components upon fertility and used several micro and macro level data sets to test the approach empirically (Esterlin and Crimmins, 1985).

The rational choice revisionism adumbrated the early emphasis of the demographic transition theory on the macro social determination of fertility. The theory was weighed down with supplementary arguments drawn from different disciplines, leaving only a hollow core proposal that socio-economic development would lead to natality decline sometime after a major decline in mortality (Beaver 1975). As a result, the explanation for fertility decline by demographic transition theory which is indistinguishable from the ‘modernization theory’ because of its emphasis on generalised modernization i.e., industrialization, urbanization, affluence, and education progressed very little over the years (Chesnais 1992 and Simmons 1988).

The spacing of birth, the age at marriage, education, migration, etc. are the social factors determining the number of children desired and planned by families. According to Rudolf Audorka (1982), these social factors play a major role in determining the number of children compared to the biological factors of fertility. He hypothesised that as almost all the adults in the advanced countries know well about birth control and as the methods of birth control were more or less available to them the practice of birth control depended obviously on the motivation of the couples, which in turn was determined by the social factors.

The historical and contemporary relevance and accuracy of this demographic modernisation theory was challenged by many (Crenshaw 1989). For instance, results from the Princeton European Fertility Project suggested that socio-economic forces played no role in fertility behavior prior to Europe’s demographic transitions, that changes in mortality were
not pivotal in those transitions, and that the pace and timing of the fertility decline were driven primarily by tastes and access to contraceptive technology (Knodel and Van de Walle 1986). Some questioned the demographic transition theory’s applicability to contemporary third world countries. Results from the World Fertility Survey questioned the socio-economic theories of fertility behavior, apparently falsifying the notion that wage workers or women working in modern sectors experienced lower fertility than their more traditional counterparts (Cleland and Wilson 1987). These authors concluded that education, secularization, and cultural diffusion provided checks on fertility (Lesthaeghe and Wilson 1986), while others relegated social stricture to a channeling role that mediated the spread of ideas, attitudes, and information regarding fertility norms and practices (Bongaarts and Watkins 1996).

The ‘ideational theory’ attributed fertility declines to the diffusion of innovation in birth control technologies and social norms. It tended to deal almost exclusively with the spread of the practice of fertility regulation. Birth control in its parity-specific form was then seen as an innovation, which spreaded from person to person, from group to group, and from region to region, a process that depended heavily on communication and tended to follow a specific course (Watkins, 1991). Retherford noted that it was a characteristic of the nature of the diffusion process that within a brief time span, the proportion of people who used birth control, (and hence the level of fertility) might change substantially with little or no change in the usual indices in the economic and social development. Thus, during periods of rapid diffusion, the effects of development tended to be obscure, so that development indices were often poor predictors of birth-control use and fertility (Retherford, 1985). Several findings made it clear that

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3 Parity-Specific fertility control means stopping child bearing after enough children have been had.
innovation and diffusion were elements that needed to be taken into account in the explanations of the fertility transition (Van de Kaa, 1996).

There are differences of opinion among demographers about the causes of current trends in family formation and family arrangements, fertility rates and women employment. Taking into consideration the contraceptive revolution of 1960s, Catherine (2003) put forward the ‘Preference Theory’ which argued that the contraceptive revolution gave women independent control of their fertility, if necessary, without the agreement and cooperation of the male partner. Women, thus, became the crucial factor that decided the Active Reproductive Span (ARS). Catherine was of the opinion that the sexually active heterosexual women had a decisive influence regarding the number of children and the family. Thus, Preference Theory was a new approach in explaining and predicting women’s choice between market work and family work, a theory that is historically informed, empirically based, multidisciplinary, prospective rather than retrospective in orientation and applicable in all growing and rich nations.

2.3 Hypotheses Regarding the Impact of Religion on Fertility

As mentioned earlier, demographers and social scientists formulated four major hypotheses in order to explain the religious differentials in fertility, (Goldscheider 1971; Chamie1981). They are: (i) ‘characteristics’ (or assimilationist) hypothesis, (ii) ‘particularised theology’ hypothesis, (iii) ‘minority group status’ hypothesis, and (iv) ‘interaction hypothesis’ (See Chapter I, I.4)

2.3.1 Characteristic Hypothesis

Advocates of the ‘characteristic hypothesis argued that the religious differentials in fertility were essentially a result of differences in the demographic, social and economic attributes of the members of religious
groups (Riccio, 1979). Thus it was possible that the fertility of one religious community might differ significantly from that of another for reasons other than the philosophical content of religion, namely for reasons of differences in income, occupation, educational level, etc. In such a situation the gross fertility differentials among the religious groups could be attributed to variations in socio-economic or demographic characteristics of the religious groups.

Petersen aptly summarised the characteristics hypothesis: “In the process of modernization that the growth of cities and urban-based social classes effects, one typical consequence is secularisation, the tendency of religious cultural differences to become smaller. Thus, the effect of religion per se on the reproductive behavior of most persons in the West is now probably close to nil. What may seem to be a religious influence often reflects the fact that the members of any denomination are typically concentrated in very few places in the social structure as defined by occupation, education, income or any other of the usual indices”, (Petersen, 1969).

2.3.2 Particularised Theology Hypothesis

Supporters of the ‘particularised theology’ proposition contended that the religious differentials in fertility were due to the differences in religious doctrines. “The particularized theology attributes reproductive differences to specific doctrinal differences between religions”, (Kondel et al. 1999). Accordingly, religious groups whose doctrine prohibited the use of contraception and abortion, and stressed on the value of many children had greater fertility than the groups whose doctrine permitted contraception and did not emphasise the importance of many children.

If two religious groups did not have explicit identifiable religious ideologies about birth control or ideal family size, any fertility differences
between these religious groups must have resulted from a matrix of social, demographic and economic characteristics. On the other hand, if the fertility differences between religious groups persisted after controlling for differential social, demographic and economic characteristics, the explanation of residual fertility differentiation must have rested with a particularised religious ideology on birth control and family size (Goldscheider, 1971).

Certain religious sects have specific precepts about procreation, marriage, childbearing and contraception. While some of these are common to most major religions, there are also notable differences from the general understanding about them in the major religions (Cook, 1961). Though the Roman Catholic Church recognises the responsibility of a married couple to limit the number of children to be reared for reasons of healthcare and social welfare, only natural birth control methods, viz. abstinence or rhythm method, are approved by the Roman Catholic Church for married couples. The Catholic Church categorically opposes abortion. This was a major issue in various population conferences and the Church indicated its position repeatedly and clearly on these occasions, (Barry, 1997). Protestant Churches have long upheld the overall principle of responsible parenthood, recognising the duty of the parents to limit the family size so that children will be properly cared for (Cook, 1961).

Though the idea of traditional pro-fertility pattern is clearly evident in other major religions like Hinduism, Islam and Buddhism, there are notable differences among the religions in the nature of approach. According to Buddhists, a disproportionate increase in population, that is, increase in excess of the available resources is undesirable since it may lead to poverty and crime (Goldstein, 1973). Buddha inspired his followers to have self-control and celibacy. In Buddhist teaching spiritual life that
lead to enlightenment is of primary importance. Procreation and family life are matters of secondary interest and are considered as impediments to the spiritual awareness.

Islam also has a pro-natalist approach which emphasizes on the importance to motherhood for women (Fagley, 1967). However, there is no absolute bar on contraception. Children are viewed as one of the great blessings granted by Allah. Some scholars support the use of temporary measures to prevent conception. However, abortion is strongly condemned in Islam as in Buddhism. In summary an article on Muslim natality, Kirk (1979) argued that Islam was a more effective barrier to the diffusion of family planning than the other religions. El- Hamamsy (1972) and Omran (1973) suggested that in order to understand the higher fertility of Muslims, greater importance should be given to the effect of the belief system on the behaviour level and to the existing socio economic conditions in their respective countries rather than to the Islamic theology. Mari Bhat and Francis Zavier (2004) believed that, religion itself could delay the diffusion of small family norm and could influence many of the followers who would be inclined to go against the ‘will of God’ in matters of procreation. Hoodfar and Assadpour (2002) showed the dramatic fall in fertility in Iran after Muslim clergy took a favorable stand on family planning. Iyer (2002), however, in keeping with other terminology from economics, used the term ‘pure religion effect’ to describe the same factor. A ‘pure religion effect’ on fertility can operate in a number of ways (Iyer 2002, Weber 1992 and Gallner, 1981). A number of empirical studies proved that the Catholics show different fertility than Protestants and this due to differences in the context of their religious beliefs (Mosher et al, 1986).

Hindu religion also has a strong pronatalist orientation. To have a son is regarded as a prime religious duty, as dharma or caste law, not only
to continue the lineage, but also to give salvation for the parents and their ancestors. According to Manu, “a man conquers the world by the birth of a son” (Fagly, 1967). This traditional stress on procreation and the survival of at least one son in the family led to high fertility, in the face of high mortality.

2.3.3. Minority Group Status Hypothesis

The third proposition, ‘minority group status hypothesis’, views religious fertility differentials within the larger context of fertility and social organisation. Its advocates maintained that: “The insecurities of minority group membership operate to depress the fertility below majority level (1) when acculturation of minority groups has occurred in conjunction with the desire of acculturation; (2) when equalisation of social and economic characteristics occurred and/or social and economic mobility was desired ;(3) when no pro-natalist ideology was associated with the minority group and no norm discouraged the use of efficient contraceptives” (Goldscheider, 1971). “Insecurities of a minority religious group lead them to limit family size to facilitate social mobility, provided that the group seeks both acculturation and social and economic mobility, and that the religion does not have a strong pronatalist ideology or one that specifically discourages birth control” (Kondel et al, 1999).

However, fertility for a minority community may be higher if it feels threatened by the majority community in political, economic or social spheres (Van Heek, 1996, Stinner and Mader, 1975). This is also likely if identification with a religious organization can be used for economic gain and rent seeking activities. This is particularly relevant in countries like India where religion was used in the past as a means of gaining legitimacy for securing some portion of the gain from development in the community. Studies on minority group status and
fertility show mixed results. There are studies that indicate that the fertility of a minority group differs significantly from the fertility of the dominant majority. There are also studies that have shown the absence of significant difference or convergence in the fertilities of majority and minority groups (Chamie, 1981).

2.3.4 Interaction Hypothesis

The hypotheses discussed above suggest that religious fertility differentials are not constant all the time. Chamie (1977) observed that, the inconsistencies in the findings of the previous studies dealing with religious fertility differentials might have been due to the omission of the interaction terms for religious affiliation and socio-economic status. Though only a few studies have looked into this hypothesis, it is believed that the interaction of various religious groups brings about changes in the relationship between religion and fertility to occur over a period of time. Thus, all religions gradually responded in a similar manner to the socio-economic changes associated with fertility transition and led to a convergence of fertility behaviour. It is also possible that the perception of the people about the precepts and injunctions of religion could also change due to interaction (Kondel, 1999). Countries with strong differentials at one time appeared to have converging differentials at other times.

None of the popular hypotheses is entirely adequate in explaining the observed differentials in fertility. The ‘interaction hypothesis’ proposed by Chamie is considered to be more consistent with the observed fertility differentials; it also provides a broader conceptual framework for understanding religious differentials in fertility. ‘Interaction hypothesis’ maintains that religious differentials in fertility are largely a function of two broad factors: (i) the official doctrine and the current local orientations of the religions involved; and (ii) the socio-economic levels of the religious
groups. Thus, the theory maintains that there is no single constant effect on fertility that may be attributed to the membership in a particular religious group. Religious fertility differentials will depend on the interaction of the socio-economic levels of the religious groups and the local orientations of these groups toward procreation and fertility control.

Iyer (2002), after examining the impact of religion on demography, reduced Chamie’s three hypotheses to two. The first is the ‘pure religion effect’ hypothesis on fertility, and the second is the ‘characteristics hypothesis’ which reflects socio-economic differences between members of religious groups, and at the same time treats minority group status as a ‘characteristic’ of the population. According to her, another hypothesis, which is relevant particularly in the context of India, is ‘discrimination’, that is, that the different religious groups may have different levels of access to services such as health and family planning.

Iyer Syria (2002) observed that differences in fertility by religion might merely reflect differences in the socio-economic characteristics of the members of a religion. Empirical studies suggested that over time, as identities became less distinctive and the economy developed, there was a convergence in fertility between religious communities. For example Malaysia, Indonesia and more recently Bangladesh, all Islamic countries by political orientation, witnessed a decline in their total fertility rates (Mahendra et al., 2002; Iyer 2002). However, it should be noted that Malaysia and Indonesia are not wholly Muslim in terms of population, but family planning was more radically available in these countries, either due to the needs of the other religious populations or due to government efforts (Cleland, 1993). This shows the way in which the effect of religion is heavily dependent on its being supported (or opposed or counteracted) by other institutions such as State. This implies that although we need to
consider the norm-enforcing strength of religion, we must also look towards its ability to interact with social arrangements and other institutions in the society over time.

Chamie (1981) concluded that religious values and orientations that were pronatalist had their principal effect during the demographic transition because their influence produced a lag in the adjustment of their adherent’s fertility to the new conditions for which low fertility was an appropriate response. Before the demographic transition, high fertility was appropriate for everyone, so religious affiliation did not matter very much after the transition. The religious influence was eventually ignored by the conditions of modern society.

2.4 Proximate and Non-proximate Determinants of Fertility

The Proximate determinants of fertility are the intermediate variables through which changes in fertility are effected. The Non-proximate determinants affect fertility indirectly through their impact on the proximate variables. The term non-proximate determinant was used by Bongaarts, while, in the context of India both terms are used interchangeably by Srinivasan, (Bongaarts 1978, Srinivasan 1995).

2.4.1 Proximate Determinants

Demographers broadly classified the proximate determinants as natural fertility, nuptiality, contraceptive use, and induced abortion. ‘Natural fertility’ is defined as the total fertility of a couple who have not practised any method of deliberate control either to increase birth spacing or to curtail family size. ‘Nuptiality’ shows the proportions of married women and the female age at marriage (Goldstone, 1986). ‘Contraception’,

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4 The proximate determinants of fertility refers to the biological and behavioural mechanisms by which fertility levels are reduced in a population and serve to moderate the influence of culture, society, economic conditions, living standards and other similar background determinants on individual reproductive behaviour, (James and Sajini, 2005).
performs both birth spacing and birth-limitation function. ‘Induced abortion’, is the willingness and ability of women to terminate unwanted births.

**FERTILITY**

![Diagram]

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<td><em>Female autonomy</em></td>
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2.4.1. (a) Nuptiality: Age at Marriage

An important demographic variable, which plays a vital role in women’s fertility decision, is the age at first marriage. Economists postulate that marriage occurs when the utility of being married exceeds the utility of staying single, taking into account the costs of finding a mate and the opportunity costs of being married (Becker, 1991).

Iyer, (2002) investigated the determinants of the female age of first marriage on the ground that it was an important proximate determinant of fertility and a vital variable in the explorations of economic demography in a society in which most reproduction occurred within marriage. The study found that after controlling the socio-economic factors such as income, education, age at menarche and year of marriage, the religion in which the woman was raised did not exert an effect on the age at marriage. Discussions of fertility in poor countries have stressed the importance of
increasing the female age at marriage in order to lower fertility. The female age at marriage is influenced by education of women, women’s employment, income, social norms, religious and caste differences, husband’s education, age at menarche, marital consanguinity, etc.

Using the data derived from the Bangladesh Fertility Survey (BFS, 1989), and Bangladesh Demographic and Health Surveys (BDHS, 1996-97), Kabir, et al. (2001) investigated the relationship between the age of marriage and fertility. It also examined the factors affecting age at marriage at different time periods. The analysis which used the number of children ever born as a measure of fertility showed that lower the age of marriage the higher is the fertility. Application of multiple classification analysis technique indicated that age of marriage increased with higher socio-economic conditions in Bangladesh. Female education appeared to be the strongest determinant of variation in age of marriage and all the other factors such as place of residence, work status, religion and geographic region showed statistically significant relationships.

Singh and others, (1992) investigated the relationship between age of marriage and the length of first birth interval in two States of India: Uttar Pradesh and Kerala. Life tables of first-birth intervals and median first-birth intervals were computed for several subgroups of the study population. Multivariate hazards modeling technique was used to study the net effect of age at marriage, controlling for a multiple of socio-economic factors. The result shows that the average first-birth interval varied by age at marriage and was much longer in Utter Pradesh than in Kerala.

The data from the Uttar Pradesh Rural Development and Population Growth Survey in 1978, and those form the Determinants of Fertility Survey in Eastern Uttar Pradesh in 1987 and the 1980 Kerala Fertility Survey were used to examine the demographic and socio-economic
characteristics of fertility. Attention was specifically focused on the timing of first births in Uttar Pradesh (UP) and Kerala, and its relationship with age of first marriage and the determinants of the fertility decline. Controls were indicated for religion (Hindu, Muslim, and Christian), education (illiterate or literate for husband and wife), year of marriage (before or after 1970), work status (working or nonworking), and birth cohorts (of 25 years). Women were grouped according to their age, those aged up to 13 years of age, 14-15 years, 16-18 years, and 19 and over years.

The mean age at marriage increased by 0.9 year from 1978 to 1987 in UP, which was 2 years lower than the mean age at marriage in 1980 in Kerala. In both States, mean age of marriage was lower when both husband and wife had little education, and in Kerala women, who were Muslims and non-working, married at lower age before 1970. The median first birth interval was 2 times as long in UP as in Kerala for every age group. Between 1978 and 1987, the median first birth interval varied in UP and in Kerala by 0.3 months but was greater than in Kerala by 23.6-23.9 months. The overall mean birth interval in Kerala was 20.3 months. The proportion of women not conceived within 10 years was 3% in Kerala and 10% in UP. In the proportional hazard models, the relative risk of first birth in 1978 in UP was .38, .60, and 0.68 for the age groups at marriage 13 years, 14-15 years, and 16-18 years respectively. The relative risk in Kerala was almost the same. A number of reasons were given to explain the average delay in the first birth interval according to age at first marriage and the length of first birth interval. The joint family system prevalent in rural areas, where couples stayed with the rest of the family in the same household was one reason. The residence within the joint family limited the chances for coitus.

Nuptiality played a significant role in determining the level of fertility and growth rate in a population. The experience of several less developed
countries, where population growth rates have recently come down, has well demonstrated this effect. An upward shift in nuptiality behaviour has played a crucial role in affecting these changes. In societies where reproduction is primarily confined within marriage, the changes in marriage ages and the resultant reduction in proportion of women remaining in married state are directly linked to fertility. Raising of female age of marriage has therefore been recognized as one of the important policy interventions that might have influenced population growth rates apart from national family planning programme, (Dazed et al, 1998).

2.4.1. (b) Contraception

There are two opposing views about the interaction between fertility regulation and fertility transition. The first view is that fertility will decline in response to the family planning services. The other view is that fertility will decline in response to the decline in the demand for children (Pritchett, 1994). The latter is particularly relevant for southern States of India, where in the past two decades there were rapid decline in fertility, often approaching to replacement level.

The decision whether to practice contraception or not is based on the individual’s evaluation of the costs and benefits of adopting a contraceptive method. The costs of practising contraception include factors such as the actual monetary cost of using the method, the time spent in traveling, payments to providers such as family planning clinics or hospitals, and psychological factors such as disapproval of other family members. The benefits of practicing contraception are the reduced cost of additional children, as well as the reduced mental health risks associated with repeated pregnancies (Bongaarts, 1997).

In 1960 only 10 percent of women in developing countries were using any form of fertility control, whereas by 1994 the percentage rose to
51 (The Economist, 1994). So it is argued that there was a ‘KAP-gap’ (a gap in the Knowledge of, Attitude towards, and Practice of birth control among women) and an unmet need for contraception. According to the 1991 Census, in India, 44 percent couples were using any one of the methods of family planning. 42 percent of the Hindus were using a contraceptive method, compared with the 28 percent and 34 percent Muslim and Christian users respectively.

The contraceptive use was studied based on its supply side determinants such as family planning programmes and also based on the demand side determinants such as the role of the desired family (The Economist, 1994). Empirical studies showed that the important factors determining contraceptive use were education and occupation of the couples, income, age of women, institutional norms, autonomy and mobility of women, religion, son preference, breast-feeding, infant mortality, etc. (Iyer, 2002).

Francis Zavier and Sabu Padmadas (2000) used multivariate logistic regression techniques to assess the socio-economic, demographic and behavioral characteristics that determined a prior temporary method used among sterilized couples. The data from NFHS were used for purpose of the study. In India, people often equated the term family planning with sterilization, although government policies aimed at providing the use of reversible methods (Bose, 1993). The preference for son and the desire for a family of at least three influenced the sterilization rate in India (Khan, 1980).

2.4.1. (c) Abortion

Visaris and others (2004) highlighted the issues that emerge from eight qualitative research studies that formed part of the Abortion Assessment Project which sought to produce evidence based body of
knowledge on all facets of induced abortion. These studies have threw up some common pattern and themes such as unmet needs of contraception and abortion, the question of son-preference; the preference for private providers and the neglected needs of single, widowed or separated women. More specific studies highlighted the need to integrate the diverse viewpoints that would ease progression towards the common goal of making abortion an infrequently used but safe alternative for women faced with unwanted pregnancy.

2.4.2 Non proximate Determinants

Generally variations in fertility are examined in terms of socio-economic factors such as education, income, occupation, son-preference, caste, and place of residence. These are non-proximate factors that can affect fertility only indirectly through the proximate determinants (Visaria, 1999).

2.4.2. (a) Education

Education is an important non-proximate influence on fertility. Empirical studies have shown that greater education, especially secondary education for women, contributed significantly to the decline in fertility. Women with very few years of primary education had slightly higher fertility than those with no education, but women with more years of education beyond primary levels, had less number of children (Birdsall and Griffin, 1988).

After the late 1970s, a number of surveys had sought to explore female literacy and its role in the reduction of fertility. Sharma and Retherford (1990) used 1981 Census data for 326 districts. They showed that female literacy would have a significant negative impact on fertility. In a study Schultz (1997) showed that demand for children could be analysed
in terms of costs and benefits of a child to the parents. Increased education of women raised the cost of childbearing and reduced fertility.

In another study, using NFHS-1 data, Kirit and Chiranjib (2001) estimated the determinants of fertility of the ever-married women in the States of Andhra Pradesh and Utter Pradesh. The data were used for multivariate regression analyses to understand the effect of female literacy on fertility. They found that without an overall development, literacy, in spite of being a critical precondition, affected fertility reduction only in a small percentage terms. Therefore, female literacy is a precondition for fertility reduction, but without an overall development the female literacy alone will not effect considerable reductions in fertility.

Using the census data on Indian districts for 1981 and 1991, Jean and Mamta (2000) examined the determinants of fertility levels and fertility decline. There was a significant decline in fertility in many parts of India after the early 1980s. The study found that Women’s education was the most important factor determining fertility differences across the country over a period of time. According to the study female literacy had a negative and highly significant effect on fertility rate. Similarly low level of child mortality and son-preference also contributed to lower fertility.

In recent years there has been a substantial fall in fertility among illiterate women in India. The data from Human Development Profile Survey of 1994 showed that child schooling among illiterate parents was inversely related to family size and positively related to contraceptive use. By connecting these two pieces of evidence Bhat argued in his paper (2002) that fertility was falling and child schooling was rising among illiterate couples because of the quality quantity trade-off. The detrimental effect of family size on child schooling was found to be severe on female children and on the first born of either sex. Perhaps this was because these
children were either not sent to school at all or were withdrawn early to supplement family income or to look after the younger siblings when family size was large. Consequently, it was argued that the first female child would practically stand to gain from decline in fertility.

Many studies have analysed the trends and determinants of Kerala’s demographic transition (Zechariah and Rajan 1997). In a recent study Rajan (2005) analysed the determinants of fertility behavior in South India. The analysis demonstrated that for a given literacy level, Tamil Nadu and Kerala villages had significantly lower fertility than the two other South Indian States, Karnataka and Andhra Pradesh. Though literacy level was a powerful determinant of fertility, the statistical relationship varied from regions to region. Also the study made a qualitative analysis of the causes of fertility decline

2.4.2. (b) Income

In a country like India where regional economic diversity abounds, it is very difficult to establish any economic theory of fertility. If children are assumed to be consumer durables with positive income elasticity, a high income will lead to the consumption of more children (Becker 1960). In reality, how children are valued in a society will be a dominant determinant of the fertility desire of the couples. In the Indian context, studies on this area are few. Roy and others, (1999) attempted to explore the economic rationality of fertility preferences in India. The NFHS data has been used for the study. Although all the major States were covered in the survey this study was restricted to only four States, Punjab, Maharashtra, Kerala and Uttar Pradesh. According to the study, the standard of living or economic status data were not always sufficient to understand the complex mechanism of fertility change. A number of other social factors directly and indirectly influenced the couples’ decisions on
family size. State-wise analysis of data showed that only in Punjab was there the expected negative association between standard of living and fertility change.

In a study of State-wise estimates of poverty among religious groups in India Rijo and others, (2005) examined whether religious diversity in our country had economic dimensions to provide an empirical basis to such debate. NSS data were used to estimate FGT, (Foster Greer and Thoebecke, 1984), the Head Count Ratio, Poverty Gap Ratio and Squared Poverty Gap Ratio. The study aimed at examining the relative economic status of different religious groups in India and to analyse the economic dimensions of the religious diversity in the country. It was found that the MPCE (monthly per capita consumption expenditure) of Muslims was the lowest in both rural and urban India. The MPCE of Christian and Sikhs was the highest in urban and rural India respectively. The prevalence, depth and severity of poverty were found to be the highest among the ‘others’ (religious groups other than Hindu, Muslim, Christian and Sikh) in rural India. In rural India Hindus is the poorest group in majority of the States while in urban areas the case is different in most of the States.

2.4.2 (c) Occupation

Rachel (1994) examined various demographic, social and economic factors, which might have contributed to the pattern of falling female work participation rates in Kerala. First, she analysed various demographic factors that account for changes in the population structure and their implications in labour force. Second, the impact of economic growth and structural change of female work activity was examined. Finally, the nature of interaction between the development process in Kerala and women’s work activity was examined. The study found that, in Kerala, unlike in the other economies, the pace of social development far exceeded that of
economic growth. This was indeed an ironical situation. It is paradoxical that the development strategy was simultaneously responsible for enhancing and curbing the female workforce. A wide range of socio-economic changes encouraged women to offer their labour on the market. But the structural changes resulted in absorbing the growing female workforce. This is another feature of Kerala’s distinctive pattern of development.

2.4.2 (d) Sex Preference

Preference for the children of a particular sex, especially for male child, is strong in India as a whole with notable regional variations in the degree of this preference and it has its impact on fertility decision. Using the data of National Family Health Survey, Kulkarni (1999) made a study on the impact of gender preference on contraceptive prevalence and in fertility. The tables provided in the National Family Health Survey States Reports and its computerised data sets were used to obtain the indicators of gender preference and its comparative impact and fertility consequences for various States. The analysis of the NFHS data indicated that in States like Maharashtra, Himachal Pradesh, Punjab, and Gujarat gender preference had stalled the fertility transition. The elimination of gender preference could have reduced fertility substantially in these States bringing it close to the replacement level. It could have reduced the fertility at least to the level of the Southern States of Tamil Nadu and Andhra Pradesh which exhibited only mild gender preference.

Borooah and Iyer (2005) proposed a new explanation for religious differences in fertility in India by the incorporation of the issue of gender. They reported the result from an econometric investigation of the factors influencing the sex ratio at birth and among currently living children by religion and caste by subdividing the sample (of 1000 women) into Hindu,
Muslim and dalit women who had terminated their fertility. The findings were based on the data from the Human Development Survey of India. This survey was commissioned by Indian Planning Commission, funded by UN Agencies and carried out by National Council of Applied Economic Research. The analysis found that the literacy of the husband served to raise the sex ratio, and that the effect of husband’s literacy was stronger for the Muslims and dalits than for the Hindus. The reasons why the Muslims had larger families than the Hindus was because, firstly, they did not desire sons as much as Hindus did and secondly, they were less apprehensive of having daughters than the Hindus. Thus, not only did Muslims have larger families than Hindus but they also had relatively more daughters than sons.

In India as a whole, there was an unusually high sex ratio for children under 7, (107.8 male for 100 female in 2001 census, it was 105.8 in 1991. An article by Fred and others, (2002) studied the magnitude and nature of this problem using the data from NFHS-II and census 2001. NFHS-II confirmed that the sex ratio is abnormally high, exceeding 100 females in 10 out of 26 States in India.

The practice of abortion needs some comment in any summary statement of the factors affecting human fertility. Ultrasound and amniocentesis are often used for sex determination. The study by Fred and others estimated that over 100000 sex selective abortions were performed annually in recent years. Further the study said that the efforts to reduce the sex selective abortions were not fully successful, because basic changes had taken place in the underlying reasons that promoted sex selective abortions in India. These reasons were strong and persistence preference for son, the low status given to women, wide spread fear of large dowry payment and the acceptance of the practice of sex selective abortion.
2.5 Cultural Factors

In many countries human fertility remains high because cultural values influence parents to procreate many children. From Biblical cultures of antiquity down to the present the religious views were integrated into the various cultural factors of the geographical region in encouraging human reproduction rates. The New Testament does not explicitly speak about family size nor encourage human reproduction. A range of cultural factors influencing population are values like virility, prestige, security, etc. that parents hold up in a cultural milieu. If one adopts the Malthusian pessimistic view that human population will eventually outstrip food resources, birth control measures, especially contraceptives, will be effectively disseminated in non-Western cultures only by cognizance of cross cultural appreciation of values and acculturation processes (Jennings, 1970).

Sex is of course a primary drive among most species of the animal kingdom. Among many animals, this drive is controlled by instinctual mechanisms so that sexual activity is confined to annual rutting seasons although man in domesticating certain animals has altered their sexual habits. In contrast, man is normally characterized by an oestruality favouring sexual activity throughout the year; hence, the birth of an offspring may occur throughout the year. With developed communication and dissemination of information about growing population pressure in the world, and with the effectiveness of inexpensive contraceptives, why haven't birth rates declined more rapidly? Why do parents in various cultures continue to have large families when privation and even starvation confront them? What influences are at play causing the fecund women to bear unwanted children? Why have some governments failed in their efforts to initiate successful programmes for birth control? The answer to
these and similar questions can be found out only by understanding the cultures and the acculturation of the religions in the countries where human fertility remain high (Gopolpur, 1962).

In the last 33 years after 1961, the population of India became more than double. But recent population data suggest that there has been a clear decline in fertility almost throughout the country together with a continuing decline in mortality rates. Using the census data, NSS, ORG, and SRS, Visaria and Visaria, (1994) attempted to find out the trend and levels of demographic transition in India especially in 1980s. In the study, they focused on the ongoing changes in the process relevant to demographic transition and more particularly to the decline in fertility. The study was made by analysing the determinants of population growth, such as, fertility mortality and migration. They also studied the determinants of fertility decline, such as literacy, urbanization, status of women and the proximate determinants of Bonogart (1978), namely, age at marriage, postpartum amenorrhoea, induced abortion and contraception.

In Kerala several factors were involved in a couple’s decision to avoid spacing methods and to go directly to relying on a permanent method. The recent trend toward adoption of sterilization at progressively younger ages reflected small family size ideals and a desire for shorter periods of exposure to the risk of unwanted child bearing, once couples had achieved their desired family size of two children (Francis Sabu 2000). In Kerala the idea of small family size and a desire to shorten the period of exposure to the risk of pregnancy might explain the tendency of the couples to go directly to sterilization at a relatively young age and by-pass the use of temporary methods altogether.
2.6 Empirical Evidence on Religion and Fertility

Using one or more of the four hypotheses mentioned earlier (see 2.3), several empirical analyses have been made by many researchers about the religious differentials in fertility in various populations and tried to assess factors responsible for such differentials. A review of these studies shows that most of the cross-national studies are from North America, Latin America, Europe and Australia and examined the Catholic-Protestant or Christian-Jewish differentials.

Lutz (1986), in his empirical analysis on religion-fertility relationship of 128 countries for the period of 1950-1975 revealed that after controlling for the socio-economic conditions of a country, spatial settings and religion were found to have significant effect on fertility. A study by Mahler (1999) found wide variations in contraceptive acceptance and prevalence among the Muslim population. While Muslim countries like Bangladesh, Egypt, Indonesia, Jordan, Morocco and Turkey had high prevalence Niger, Pakistan and Senegal had very low prevalence. According to a study of fertility in 33 Muslim countries during the 1960s and the 1970s, Nagi and Stockwell (1982) examined that, though generally fertility was higher in Muslim Countries compared to non-Muslim countries, large variations were observable among the Muslim countries.

A large number of studies have examined the fertility differentials within a country. Some of the earlier studies were about the United States and examined Catholic-Protestant and Catholic-Protestant-Jewish differentials. Freedman and Whelpton (1961) in their study tried to find out whether fertility of Protestant and Catholic is different from that of the Jews when they have similar socio-economic status. It was found that even after controlling for socio-economic characteristics, residual differences associated with religion remained. The difference between fertility of
Catholic on the one side and Jews and Protestant on the other was not due to difference in background characteristics. However, the Jewish-Protestant difference was attributable to characteristics hypothesis. Using the data from the 1955 Growth of American Families (GAF) survey and the combined NSFG (National Survey of Family Growth) of 1973 and 1976, Mosher and Goldscheider (1984) found the fertility differentials among the Catholics, Protestants and the Jewish. In a comparative analysis using the 1950 GAF survey and 1973, 1976 NSFG, Mosher and Goldscheider noted that the use of contraception increased between 1955 and 1970 because of the increased surgical sterilization especially increase in male sterilization. They further analysed the results of the 1982 survey (NSFG) and examined the result of the 1955 (GAF) and the 1973 and 1976 (NSFG) survey with the 1982 survey. The analysis focused in the changes in contraceptive use and sterilization from 1955 to 1982. There was an overall convergence in the contraceptive practices of white married couples of different religion in the two decades between the 1950s and the 1970s. However, the pattern of method choice among religious groups remained different (Goldscheider and Mosher, 1988).

There was a tremendous change in the pattern of contraceptive use for Catholics, Protestants, Jews and others in the United States with a ban of certain IUDs. During the 1980s, use of contraception increased both for Protestants and Catholics. There was a sharper increase in the use of contraception for Catholics that narrowed the difference in contraceptive use between Catholics and Protestants (Goldscheider and Mosher, 1991).

Comparing the fertility of Catholics in the United States with that of the other religions in Canada, Burch (1996) found that the Catholics had a higher fertility than the non-Catholics in Canada and in United States; however, Canadian Catholics have higher fertility than the Catholics in...
United States. Differences in the degree of ‘religiousness’ within the religious groups may cause variations in fertility (Westoff, 1958). It was observed that, in Netherlands, Fertility of Roman Catholics was much higher than that of the Dutch Reformed Church members (Van Heek, 1956). However, the experience of two islands in the Outer Hebrides showed that the religion effect in Catholic fertility was not significantly strong except for a small transient increase after the release of the papal encyclical (Clegg and Cross, 1995). As in other parts of the world, fertility of Catholics in Australia has been consistently higher than that of non-Catholics, (Day, 1964). A study by Pillai (1992) showed narrow difference between Protestant and Catholic attitudes on and practice of birth control.

Using the 1970 National Fertility Study in the United States, Johnson (1979) tested the characteristics hypothesis and the minority status hypothesis. It was found that more than average fertility among the black Americans was explained by the characteristics hypothesis in a weak form, i.e., the black white differentials disappear first among the highly educated blacks. While a comparative study of Mexican-American to that of non-Hispanic white females found that, ethnic differences remained strong when socio-economic status and indicators of social instability are controlled statistically, suggesting that the minority status hypothesis explained the fertility behaviour of the minority group members than characteristics hypothesis (Aneshensel et al, 1989). A considerable amount of research has been carried out on the fertility of different ethnic groups in Canada, (Trovato and Burch, 1980; Halli, 1987, 1989) and China and Portuguese (Chui and Trovato 1990) in which characteristics and minority group status hypothesis have been analysed. Using data from the 1971 census of Australia, Day (1984) observed that when minority status is accompanied by pronatalism, the minority’s fertility tended to exceed that of majority.
A detailed examination of the Buddhist-Confucian fertility differentials in Thailand by Goldstein showed that Muslim fertility as a whole was below that of Buddhist and Confucians, and that the latter two closely resembled each other (Goldstein, 1973). This study was conducted before the onset of fertility transition in Thailand. However, in recent analysis, (Kondel et al, 1999), of the 1994 survey of Knowledge, Attitude and Family Planning Practice in southern region of Thailand conducted by the National Statistical Office (NSO) found that fertility was the lowest for Buddhist and the highest for Malay-speaking Muslims. Another study by Murthy and De Vos (1984) observed that in Sri Lanka, majority of Sinhalese (Buddhists) had a much higher use of contraception than both the Sri Lankan Tamils (Hindus) and the Moors (Muslims).

Muslim fertility was found to be higher than that of the Bahais in Iran (Jensen, 1982). The differences were found to persist even after controlling for socio-economic status and residence. The study of Chaudhury (1971), who analysed the data provided by District Census of East Pakistan, showed that Muslim fertility was higher than Hindu fertility for both adjusted and unadjusted data, but the differences were small and not statistically significant.

Using the data from the Bangladesh Fertility Survey of 1975, Chaudhury (1984) analysed the religion effect of fertility in Bangladesh. He found that, the Muslim fertility to be slightly lower than Hindu fertility. But controlled for age at marriage Muslim fertility was higher at low age at marriage. Contraceptive use among Muslims was lower than among the Hindus at low levels of education but the difference became insignificant higher levels.

Khan and Raeside (1998) using Bangladesh Fertility Survey found that there was no difference in the risk of subsequent births
between the religious groups in the urban areas whereas Muslims had a higher risk of having higher order births than non-Muslims in the rural areas. The Bangladesh Demographic and Health Survey 1993-94 showed that, the religion factor had a significant influence on fertility, but contraceptive practise had more effect among the non-Muslim women (Islam et al, 1998).

2.7 Religion and Fertility in India

Fertility decline is perhaps the most important social change that has occurred in India in recent years. Over the past five decades, numerous empirical studies assessed levels, trends, differentials and determinants of fertility in India. After a slow decline in the 1970s, the pace of decline began to accelerate since the mid-1980s. There was a clear decline in fertility throughout the country after that (Visaria and Visaria, 1994).

As religion prescribes a code of life, refers to a system of beliefs, attitudes and practices which individuals share in groups, and through this orientation towards life and death, religion is suppose to affect one’s fertility behaviour. Religion has a significant relevance in the demographic study of socio-economic groups (Chaudhary, 1982). According to Westoff, ‘the religious affiliation of the couple connotes a system of values which can affect family vis several routes: (a) directly, by imposing sanctions on the practice of birth control or legitimising the practice of less effective methods only, or (b) indirectly, by indoctrinating its members with a moral and social philosophy of marriage and family, which emphasizes the virtues of reproduction’ (Westoff, 1959).

The study of demography of religious communities is all the more important and intriguing in the case of India because of its religious heterogeneity and because of the coexistence of different religions. According to the 1991 census, more than (four fifth) of the population were
Hindus (82 %), 12% were Muslims, a little above 2% were Christians, 2% were Sikhs, about 1% were Buddhists, and half percent were Jains. The percentage share of the population of different religious groups has changed during the last decade. The share of Hindu population has declined sharply through the decade, from 82% in 1991 to 80.5% in 2001, and that of Muslim and Christian population have risen from 12.1% and 2.32% to 13.4% and 2.34% respectively, (Census,2001).

Different religious groups enter demographic transition at different times due to various factors. The demographic transition and the associated changes in proximate variables relating to nuptiality and contraception may take place at different periods for different communities. But in adapting to a modern integrated industrial society, ultimately all communities have to complete the demographic transition.

Using NFHS and the 1991 census, Mary and Oscar (2002), explored factors contributing to fertility rate in India and measured the relative power of economic variables on fertility rate in order to explain variations in total fertility rate across 23 Indian States. The outcome of the study helps to determine the role of economic variables in the determination of interstate fertility rate. The study found that economic variables explain 70% of the interstate variations in India’s fertility rate. However, several non-economic variables could explain an even greater proportion, e.g., indicators of female autonomy explain 84%, of variations in fertility rate. The analysis demonstrates that to explain successfully Indian fertility rates models had to rely heavily on non-economic variables.

Fertility behaviour of Muslims varies across countries. Karim and Ramesh (1977) compared data from Demographic and Health Survey in Pakistan of 1990-91 and the National Family Health Survey of India 1992-
They found that contraceptive prevalence of Indian Muslims was twice as high as that of the Pakistan Muslims.

Visaria (1974, a) using the data from various sources like the Censuses and National Sample Surveys in India found that Muslim fertility is higher than Hindu fertility. Visaria also observed that the fertility differentials among religions could also be due to the influence of socio-economic variables. The age of marriage did not differ much between Hindus and Muslims, but the use of contraceptives was always higher among Hindus than among the Muslims. In India different communities were apparently at different stages of demographic transition. Parsees with low death rates and low birth rates are already in the final stage of establishing a new demographic equilibrium. Since 1951, the population of Parsees was on the decline (Visaria, 1974, b).

The Mysore Population Study (United Nations, 1961) conducted during 1951-52 showed that the average number of children ever born for ever married women was higher for Muslims than Hindus whereas Christians had lower fertility. The Christian community too was reaching this stage. Due to the influence of modernization of Christians fertility came down significantly. Social changes were an important factor in lowering Christian fertility (Round, 1988). Available data indicated that Hindus experienced a faster pace of fertility decline than Muslims (Mistry, 1990).

Using the data from the Greater Bombay Survey carried out during 1966, Rele and Kanitkar (1977) found that general marital fertility was higher for Muslims and was almost the same for Hindus and Christians. Analysing the data from 350 Muslim couples and dividing them into Muslims with hereditary occupation and Muslims with non-hereditary occupation in Kanpur city in the State of Uttar Pradesh Khan (1979), found
decline in the fertility for both Muslims with hereditary occupation and Muslims with non-hereditary occupation groups. Using multiple regression analysis, Khan concluded that high fertility among Muslims was due to high child mortality.

The Gandhigram Institute of Rural Health and Family Planning conducted a survey in collaboration with the World Health Organisation International Reference Centre for Epidemiological Studies in Human Reproduction in 1971-75 for four cultural groups of Muslims, Scheduled Caste, Vellalas and other Hindus. It was found that the mean number of pregnancies was the highest for Muslims and the lowest for the Vellalas (Kurup and Gunasekaran, 1976). From a survey, which covered village in three districts in Karnataka, Rao et al., (1986) found that the mean number of children ever born was higher for Muslims.

Using data from Census 1971 Balasubramanian, (1984) found that fertility differentials between Hindus and Muslims were higher in urban areas than in rural areas. In major States Christians showed higher marital fertility than Hindus. Even after controlling for some of the socio-economic and demographic factors, the differences in the fertility persisted among the religious groups.

In India marriages are largely governed by traditions based on religion. The estimates of average age at marriage, which makes the entry into sexual union and thereby fertility, obtained from census data on marital status showed that in India Christians had the highest mean age at marriage both for males and females. The estimates from the National Sample Survey and SRS also indicated higher age at marriage for Christians than the Hindus and the Muslims (Goyal, 1975 and Rao et al, 1986), Krishnan and Yeung (1984) who analysed the relationship between education and age at marriage (based on the data from 1971 Census of
India) found that education and age at marriage partially explain fertility differentials among major religious groups.

An examination of the reasons for the growth differentials among Hindus and Muslims showed that differentials are due to differences in fertility (Mistry, 1994 and 1995). The age at marriage do not differ much between Hindus and Muslims; whereas the use of contraception differs between Hindus and Muslims.

Using the data from National family Health Survey 1992-93, Gandotra et al, (1998) tried to understand the family building process of 19 States in India. The study found variations in fertility among the religious groups and revealed the interstate variations in religious fertility differentials. Examining the same data Moulasha and Rao (1999) found that, even after controlling for education, Muslims had higher fertility than Hindus.

Many scholars from various parts of India examined Hindu Muslim or Hindu Christian fertility differentials. Srivastava (1979) examined the Hindu Muslim fertility differentials in Bhiwandi city near Mumbai; Mahadevan (1986) examined the Hindu Muslim fertility differentials in a village in Andhra Pradesh, Roy and others (1991) examined the contraceptive use of Hindus and Roman Catholics in Goa, and Rajan (1993) evaluated the contraceptive use of the Roman Catholics in the Arch Diocese of Bombay. All the above-said studies throw light on the differentials in fertility among the religious groups.

2.8 Determinants of Religious Fertility Differentials in India

The relationship between religion and fertility behavior has prompted much interest among the researchers especially in the context of the rising population in developing countries. Several empirical studies
have been made by many scholars in order to understand the causes of the differentials in fertility among the religious groups in India.

Bhatia (1990) examined population growth of various communities and the factors associated with such growth, namely nuptiality pattern, level and trends of fertility and practice of family planning. The study of the trends in fertility and family planning created an apprehension about the Muslims outnumbering Hindus and becoming a majority community in the country. However, population projection showed that there was no sound reason for giving any credibility to such an apprehension that Muslims will become a majority community in India. The analysis of the Census data led to the conclusion that communities in India had sex ratio unfavorable to female and in such situations practice of polygamy might reduce fertility. Muslims were not adopting family planning methods in a big way. The main reason for non-acceptance of family planning among Muslims is the socio-economic backwardness.

From the study of a village in Andhra Pradesh Reddy (1981) found that Muslim population had a favorable attitude towards family planning. In another study Singh and others (1996) compared fertility of Muslims in Muslim dominated areas and Muslims in Hindu dominated areas of rural Uttar Pradesh. This study found lower fertility and higher use of sterilisation among Muslims living in Hindu dominated areas.

Rangamuthia and others (1997) assessed the prevalence of son preference in India as a whole and in the 19 most populous States using the data from the NFHS 1992-93. The analysis showed that son preference was particularly strong in northern and central India and somewhat weak in southern and western region. In States where fertility was very high and very low, the effect was small and in States with intermediate level of fertility (between 2 and 3 children), it varied widely. It was high in
Himachal Pradesh, Maharashtra Punjab Gujarat and low in West Bengal and southern States. If gender preferences could be eliminated, the fertility level in India would decline by about 8%.

Moulasha and Rao, (1999), made an attempt to study the fertility and contraceptive behaviour of the two major religious groups, Hindus and Muslims, in India as observed in the NFHS-I. According to NFHS-I, Muslim women had 1.1 children more than Hindu women. The possible reason for this difference could be the longer reproductive span of 3 years of the Muslim women than that of Hindu women. Muslims also had reported a shorter post-partum abstinence and post-partum amenorrhea than Hindus. In addition, there are more complex socio-economic reasons for the differential behaviour of the two communities.

Visaria (1999) tried to examine the proximate determinants of fertility in India using the data from NFHS-I, Census 1991 and SRS. In this study, variations in fertility were generally examined in terms of socio-economic factors such as education, income, place of residence etc. These factors could affect fertility only through intermediate variables such as proportion of female married, prevalence of contraceptive use, incidence of induced abortion and fertility inhibiting effect on breast-feeding. Also, the study estimated the values of the proximate determinants of fertility for major States after examining the available evidence and interstate variations in these factors.

In a study, which was based on fertility and family planning and concentrated on understanding the demographic process among the Muslims, Mistry and Malika (1999) pointed out that religion did seem to explain the higher fertility and lower acceptance of family planning, while modernization and status of women seemed to be important in explaining their higher fertility and low family planning acceptance. The possible
association of certain socio-economic, cultural and some other background variables to fertility and family planning use in explaining the fertility behavior of Muslims was also analysed in the study.

The revolution of family life in the late 1990s experienced in India in general and in the Southern States in particular was most spectacular and might not necessarily conform to the classical theories of fertility (James (1999). Using the data from decadal census, the SRS and the NFHS-I it was found that the generous welfare measures undertaken by the government of Andhra Pradesh for poverty alleviation, particularly in the 1980s not only reduced poverty but also had some impact on the fertility decision of the people. This along with the rural labour market, labour organization and other related factors created a favorable climate for a decline in fertility even with a low level of social development.

In a study using National Family Health Survey data, (NFHS-I), Kulkarni (1999) concentrated on the impact of gender preference on fertility (see 2.4.2 (d)). In another paper using the census data 2001, Mahendra Premi (2001) examined the factors responsible for the decline in Child Sex Ratio. It was found that, the Sex Ratio at Birth (SRB) which was more favorable to males had, however, influenced the overall sex ratio in the opposite direction that was reflected in the adverse child sex ratio. All the States that had large decline in child sex ratio between 1991 and 2001 were economically well developed and had recorded a high literacy rate. This was contrary to expectation and so it needs to be examined.

Demographic decisions such as how many children a couple should have and whether or not they should use contraception, was probably affected by both economic and non-economic factors such as religion (Iyer, 2002). In order to investigate the links between religion and demography, a micro level study was conducted of a population of 201 rural Hindu,
Muslim and Christian households who lived in Ramanagaram in Ramanagaram Taluk in Karnataka. The most crucial finding of the study was that, religion did not exercise a pure ‘theological’ effect in the population of South India. Compared with religion, education both for women and for men, was more important for fertility change. Thus, the study concluded that the effect of religion in demographic decision-making in India is not significantly different among religious groups, once we had taken into account differences in their socio-economic status.

Muslim-Hindu differences in fertility behavior are ‘real’ but not due to differences in socio-economic characteristics between Hindus and Muslims in India. This difference is not due to Hindu Muslim differences in women’s autonomy, either because Hindu and Muslim women do not differ substantially in their autonomy or because the influence of difference in autonomy on fertility is minimal, (Morgan, 2002; Iyer 2002; Bhat and Zavier 2004).

Mahendra and others (2002) explained the role of community in determining the fertility decisions in India and Bangladesh without delimiting the importance of conventional socio-economic factors. They argued that in the context of developing countries like India and Bangladesh, the decision in contraceptive acceptance was often shaped at the community level. If the social response were favorable, a woman would accept family planning irrespective of socio-economic status. The individual decisions were formed through a social interactive process within the community.

In a study Morgan and others examined the specific claim that the higher fertility of Muslims, compared to non-Muslims, can be traced to the lower level of power and autonomy afforded to Muslim women, (Morgan et al, 2002). The study used the data from the Survey on the Status of
Women and Fertility (SWAF) 1993-94. Primary samples were from provinces (Thailand, Philippines) States (Malaysia) and districts (India). The empirical study found very weak evidence for a link between religion or ethnicity and women’s autonomy and no evidence at the individual level that women’s autonomy was associated with fertility.

From a study of the Census data from 49 districts around the country with Substantial Muslim Population (SMP), Ashish Bose, (2005) argued that, it is important to go beyond the population growth rate figures of Hindu and Muslims and give a thought to other demographic, economic and social variables. He used the census data 2001 and cross-tabulated religion by many socio-economic variables in order to understand the condition of minorities, Hindus and Muslims in particular. From the study, it was found that more than religion, the condition of the people determined fertility. In BIMARU States, (Bihar, Madhya Pradesh, Rajasthan and Utter Pradesh) both the Hindus and Muslims share poverty, ill health, high fertility, and high illiteracy; while in Southern States demographic transition is at an advanced stage. According to Ashish Bose, in addition to census data, data from other sources also should be used to analyse the fertility pattern of different religious groups.

James and Sajini (2005) examined the fertility trends among Hindus and Muslims in India using advanced statistical tools. The data for estimating proximate determinants of fertility among Hindus and Muslims were drawn from NFHS-II and Census India 1991. The estimates were carried out for all India and for those States where Muslim population was at least 5% of the total population according to 1991 Census. The study found that fertility among Muslims followed nearly the same pace of transition as that of Hindus particularly when an accelerated fertility decline in the country was taking place. The analysis of the data regarding
the proximate determinants of fertility showed that different communities adopted different strategies of fertility reduction thereby limiting the family size at the desired level. Thus, the study indicated the mechanism by which fertility reduction strategies were adopted by Hindus and Muslims in India.

In a study using data from the NFHS-I and NFHS-II, Bhat and Francis (2005) concluded that, in addition to the fertility, mortality and migration, several other socio-economic factors like rural urban residence, literacy, income and poverty, female autonomy etc. could also influence the fertility differentials. They also examined the influence of these socio-economic characteristics of the population and the extent to which religion itself could have contributed to the emergence of such differences. It also explored the possible reason for large residual effect of religion on fertility, and the causes for the religious disparities in socio-economic conditions. The study justified the reasons to explain the differentials in fertility by religion. The findings of the study showed that, religious differentials in socio-economic factors could not explain more than one fourth of the Hindu Muslim fertility differentials in rural areas and half of the differences in the urban areas. If religion were the cause for some of the socio-economic factors then the independent contribution of these factors to the religious fertility differentials would be even smaller. To the authors, the fear that Muslims would outnumber Hindus in India as a whole is totally unwarranted. However, some Muslim majority areas will certainly emerge which could have a bearing on local politics.

In another study, Kulkarni and Alagarajan (2005) tried to understand the difference in growth rate among different religious groups especially between Hindu and Muslims and the factors responsible for the differences in the growth rate. Multiple Classification Analysis (MCA) was carried out using the NFHS-II data for 14 large States. They argued that,
there were differences in the growth rate of religious communities in India. Analysis of the data from NFHS-II showed that fertility differences between Hindu and Muslim were not explained by differences in socio-economic characteristics as argued by many observers. This was true for the use of contraceptive practices as well. They suggested that there was no ‘Hindu fertility’, ‘Muslim fertility’ or ‘Christian fertility’ as such. Besides even in individual States there was heterogeneity within a religion. The differences appeared to be a passing phase in the process of fertility transition. Since all religions in India had experienced substantial fertility declines and contraceptive practice were well accepted, it was expected that fertility levels among communities would converge over a period time.

In a study Bhagat and Purujit, (2005) made an attempt to understand how socio-economic variables influenced fertility levels among Hindus and Muslims and examined the explanations from a political and economic perspective. Using the data from Census and NFHS-II, authors used a multivariate analysis of religion and other socio-economic factors influencing fertility, the level and trend in contraceptive use and the differences in reasons for not using contraceptives between the two religious groups. The study found that although a Hindu-Muslim differential in fertility persisted in India, it was no more than one child, and even this gap was not likely to endure as fertility among Muslims declined with their increasing level of education and standard of living. It was not likely that Muslims would become a majority in India in the foreseeable future.

In another study, using the NFHS-II data, multilevel and multivariate regression models were carried out Dharmalingam and others in order to examine Hindu-Muslim differences in the desire for an additional child and the use of contraceptives (Dharmalingam et al, 2005).
Result of the study showed that Hindu-Muslim difference in the desire for an additional children and the use of contraceptives were pervasive across India and invariant across States and districts. Among women with two or more children, Muslim women, compared to Hindu women were more likely to decide for an additional child. Muslim women were also less likely to use contraception even when she had decided no more children. These results were remarkably pervasive and clearly visible in the NFHS-II data, (Dharmalingam and Morgan, 2004). The study also found that Hindu Muslim differences had narrowed between 1992-93 and 1998-99. Thus, it was argued that Hindu-Muslim fertility behaviour seemed to have moving towards convergence (Kulkarni and Alagarajan, 2005).

Using data from NFHS-II and Census data, Rajan, (2005) provided estimates of crude birth rate for Hindus and Muslims for 594 districts of India. He also assessed the State and district level differentials across the country. They confirmed that there was a regional variation in fertility in India with higher fertility in the north than in the southern and western parts, irrespective of the religious affiliation of the people. The study showed that, there was a strong correlation between differentials in Hindu-Muslim female literacy levels and differentials in total fertility rate. The largest differential between Hindu-Muslim female literacy was in Haryana that registered the highest difference in TFR with Muslims to be more than three children compared to Hindus.

2.9 Fertility Differentials by Religion in Kerala

Within India there are large spatial variations in the religious composition as well as in fertility. Majority of the Christian population in India lives in the southern region, which is also characterised by lower fertility. The Christian population is generally small in most of the States of India except in Kerala, which is the only State with over five million
Christian populations. Kerala also has an equally large Muslim population and a majority Hindu population. Many studies were conducted on the fertility differentials in the State primarily on the basis of the data from National Family Health Surveys (NFHS-I and NFHS-II), Sample Registration System (SRS) and the various Census records.

A field investigation of 1000 households in Kerala from three districts of Palakkad, Ernakulam, and Allepy found that Muslims had higher fertility than the Hindu sub groups (Nairs, Ezhawas, and scheduled Castes/Tribes) and Christian sub groups of Syrian Christians and Latin Christians (Zachariah, 1983). Among the Hindu sub groups, Nairs had the lowest fertility followed by Ezhawas and scheduled Castes/Tribes. Christian sub groups exhibited similar fertility among them. Regression analysis controlled for socio-economic and demographic variables indicated that Nairs and Syrian Christians had significantly lower fertility than all the other sub groups taken together.

In India the Southwestern State of Kerala has already completed the last stage of its demographic transition. Among India’s 25 States, Kerala holds the unique distinction of having demographic indicators that closely resembled those of a developed country (Pathak and Ram 1991; Bhat and Rajan, 1980). Kerala, well known for its advanced social indicators, has the fertility below the replacement level (1.7 children per women).

In another study, using data from three districts of Kerala viz. Ernakulam, Palakkad and Malappuram, Zachariah and others (1994), arrived at the conclusion that within each of these districts there were fertility differentials by the various religious and caste groups. Muslim fertility was the highest in each district. Christian fertility was marginally higher than that of most Hindu Castes in Ernakulam, lower in Palakkad and not much different in Malappuram.
Jayasree, (1988) identified the influence of major demographic, developmental and socio-cultural determinants of differential fertility among the three religious groups viz, the Hindus, Christians and the Muslims in the southernmost district of Kerala. The study examined the influence of each of the demographic variables, viz. age of marriage, breast-feeding, and contraception and birth intervals on fertility besides the important socio-economic and social change variables and value of children on fertility.

Looking for the reasons why Kerala was able to achieve its demographic transition even in the absence of the corresponding buoyancy in the economic sectors, Zachariah and Rajan discussed the important aspects of this transition (Zechariah and Rajan, 1997) They discussed the role played by education, age at marriage and the use of contraceptives; the causes and consequences of population ageing, the impact of internal and external migration, the possible future pattern of population growth age structure and their socio-economic implications. They argued that, the Kerala experience demonstrated the effectiveness of well thought out social programmes and policies, especially relating to fertility and mortality control. Equally important was the successful family planning campaign. Thus, they demonstrated that it was not necessary to wait for major changes in the productive sector of the economy in order to usher in the demographic changes.

Alagarajan and Kulkarni (1998) concentrated their study on Hindu, Muslim and Christian fertility differentials in Kerala on the basis of the primary data from NFHS-1. They described the trends in fertility differentials by religion in Kerala and examined whether religious factors had an effect on socio-economic variables. A Period Parity Progression
Ratio analysis was carried out to see if the family building process varied by religion and the differentials had changed over a period of time.

Kerala underwent a rapid fertility transition during the past three decades, but the decline was not uniform at least across the three major religions in the State. A two or three child families appeared to become the norm among Hindus and Christians, but not among Muslims. Fertility showed a downward trend among Muslims, but a lag of 10-15 years was indicated by Period Parity Progression Ratio. Decline in Hindu Christian fertility was not as rapid as it had been in the past; if it continued in the same pace the differentials by religion have narrowed down.

Mahadevan and Sumgala, (1987) made a study on the role of social development and cultural change in fertility decline, which was carried out in a different way than the earlier studies, (Zachariah, 1983; Nag, 1981; Kurup and Cecil, 1976; Krishnan, 1976; Nayar, 1974.) A sample of 600 households was randomly selected from two villages one from Kerala and the other from Andhra Pradesh. Though Kerala village was the focus, Andhra Pradesh village was examined on a comparative basis to confirm the findings of the Kerala village. They also developed a conceptual model and theory based on the priority given to social development and cultural change that led to a rapid decline in fertility, mortality and a better quality of life of the people in general. The main determinants according to them were age at marriage, breast-feeding, perception of infant mortality, modernisation, family planning, utilization of health delivery system, and the differential performance of public health and centers.

Using the data from two surveys conducted in 1971 and 1990 Nair and Nair (1996) compared the birth intervals in a village near Thiruvananthapuram. The study found that the risk of a birth for Muslim was higher than for Hindus for the first birth. In a different study, an
analysis of contraceptive use in India using NFHS-I data found that even after controlling for residence and education, differences in the use of contraceptive persisted among Muslims, Hindus and the followers of other religions, (Remash et al. 1996).

Alagarajan, (2003) examined the interaction between religion and other socio-eco factors, i.e. whether the effect of religion on fertility remain constant across other factors. Based on the data from NFHS-1, the analysis found that large Hindu Muslim fertility differentials at a low level of education did not persist at higher levels of education. For contraceptive use, wide gaps were found between people with middle levels and higher levels and between medium and higher levels of std. of living. This indicates that couples at different socio-eco settings made different decisions in spite of belonging to the same religion. Fertility of Muslims at higher levels of income and socio-economic status was low and not much different from the fertility of the other religions. It means that the observed Hindu-, Muslim and Christian fertility gap was a passing phenomenon and that this gap would be closed with an improvement in socio-eco activities. Thus, there was no Hindu fertility, Muslim fertility and Christian fertility.

Alagarajan’s study was continued by Calvin Goldscheider’s work on the influence of religion on fertility. Kevin extended the previous study by directing attention to the role of religious institutions to the issue of religious identity. He emphasised on three elements to answer the question, when did religion influence fertility. The religion in question had to articulate behavioural norms that have linkages to fertility outcome. A religious group had to posses the means to communicate its teachings to its members and to enforce compliance. Religious groups were more likely to influence the demographic choices if their followers had a strong sense of attachment to the religious community. When these three attributes were
present, it was very likely that religion influenced demographic behaviour. The common belief that the influence of religion increase fertility may be true, but it need not be so always, as in the case of Iran, where the influence of a highly institutionalized religion has reduced fertility.

2.10 Conclusion

There are spatial variations in fertility across population of the three major religious groups. Studies from various parts of the world have identified the differentials in fertility among religious groups. European fertility is much lower than that of Asia or Africa and even within the countries we can find large variations in fertility. Studies conducted outside Asia were focused mainly on the fertility among Catholics, Protestants and Jews. It was found that even after controlling for socio-economic factors, Catholics tended to have higher fertility. The use of contraception was lower among Catholics compared to that among Protestants and Jews. Generally, religious differentials in fertility in many parts of the world have been attributed partially to the characteristics hypothesis and partially to particularised theology.

In India the Southern States have experienced substantial fertility declines and are at or near the replacement level, while the fertility is moderately high in the northern and central States. It is to be noted that fertility declined in all States including the north-central States in varying degrees. Within a country fertility is known to vary among socio-economic groups. Generally the more educated had fewer children than the less educated and the urban women had fewer children than the rural women. Many recent studies on the data from various surveys confirmed that fertility varied by religion.

The National Family Health Surveys (NFHS-II) provided the religious-wise estimates of the number of births a woman would had on
average when the current fertility schedule were followed (the total fertility rate, TFR). According to the NFHS-I conducted in 1992-1993; the TFR for the preceding three years was 3.30 for Hindus, 4.41 for Muslims and 2.87 for Christians. The second survey carried out in 1998-1999 (NFHS-II) showed lower fertility for all the religions but the order of the rate difference remained the same with narrow gaps. It is to be noted that fertility in all the religious groups was much lower than the high fertility levels of the past and that the process of fertility transition was in progress.

In India, fertility differentials by religion could conceivably be the outcome of differences in spatial distribution of population of various religions and of the regional variations in fertility. If population of some religions were concentrated in high fertility regions, they are likely to have high fertility on account of the region factor rather than the religion factor (Kulkarni and Alagarajan, 1995).

A review of literature on the studies of fertility differentials among different religious in India and in Kerala in particular showed that within India, there are large spatial variations in the religious compositions and in fertility. As a result, fertility differentials by religion at the national level could, at least in part, be attributable to spatial variations in the religious composition. For example, majority of the Christian population in India lives in the Southern region, which is characterized by lower fertility. Hence Christian fertility may be lower because a greater proportion of Christian population lives in a low fertility region. Therefore, in order to examine fertility differentials by religion, it becomes necessary to control for the State or the region effect. For this purpose reliable estimates of fertility at the State level are required. These are, of course, available for Hindus for most of the States and Muslims for many of the States. However, the Christian population is generally too small in most of the States in India except in
Kerala, which is the only State with over five million Christian populations. Kerala also has nearly equally large Muslim population and of course a majority Hindu population. Therefore, the study is concentrated on the fertility differentials of Hindu, Muslim and Christian in Kerala.

Kerala underwent a rapid fertility transition during the past three decades and it has been well recognized in the demographic literature. The tendency to go for a third or higher order births was considerably declined through the 1970s and 1980s in the State. But the decline was not uniform at least across the three religions in the State, Hinduism, Islam and Christianity. The fall in fertility among the Muslims has been relatively modest. By the end of the 1980s a majority of Hindu and Christian couples stopped child bearing after the second child but only a small proportion went for the third or the fourth. A majority of Muslim tended to continue childbearing at least up to the fourth child. Thus, a two or three child family appeared to have become the norm among Hindus and Christians and not among Muslims. At the same time fertility did show a clearly downward trend among the Muslims indicating that transition process had begun (Alagarajan, 2003).

The pace of demographic transition of any religious group is largely determined by socio-economic and cultural profile of the community. Changes in socio-economic variables such as education, status of women, and economic status bring about changes in such variables as nuptiality and contraceptive use, which in turn affect fertility and mortality levels. As mentioned earlier, Kerala underwent a rapid fertility transition during the past three decades that was well recognized in the demographic literature. Kerala holds the unique distinction of having advanced social and demographic indicators that closely resemble those of developed countries.
Almost all the empirical studies were focused on the fertility differentials among Muslims and Hindus. A review of literature also has suggests that it is desirable to have more in depth studies on the quantitative impact of religion on fertility. The present study is an attempt to understand the determinants of fertility differentials in the context of religion. The objectives of the study are threefold, first, to examine the levels and trends in fertility among the religious groups, second, to find out the determinants of fertility among the religious groups, and third, to analyse the socio-economic, religious and geographic factors determining the fertility differentials among the religious groups in Kerala, using multivariate regression analysis. For the purpose of the study, relevant data are collected from National Family Health Survey-II, (1998-1999) and from various Census records.
References:


Bhat P N Mari and A J Francis Zavier (2004): “Religion in Demographic Transition: The case of Indian Muslims”, in Rajan S.I and James K.S (eds), Demographic Change, Inequality and Human Development In India, Centre for Economic and Social Studies, Hyderabad.


of Population, (IUSSP) and The Population Council, Islamabad, Rawalpinidi.


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CHAPTER 3:

LEVELS AND TRENDS IN FERTILITY OF THE MAJOR RELIGIOUS GROUPS IN INDIA AND KERALA

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