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Abolghasem Pour Reza Anvar
University of Wollongong

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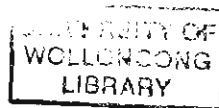
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**ATTITUDES OF IRANIAN MOTHERS TOWARDS FAMILY PLANNING,
FAMILY SIZE AND FERTILITY**

**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF**

DOCTOR OF PHILOSOPHY



FROM:

UNIVERSITY OF WOLLONGONG

BY

ABOLGHASEM POUR REZA ANVAR

GRADUATE SCHOOL OF HEALTH AND MEDICAL SCIENCES

DECEMBER 1995

DEDICATION

To the immortal memory of my mother:

A Goddess of humanity and kindness who died during this study.

DECLARATION

I declare that the work described in Attitudes of Iranian Mothers Towards Fertility Family Planning And Family Size is entirely my own work. References to the work of others are indicated in the text. This work has not been submitted for the award of any other degree or diploma at any other University.

A. Pour reza

10/December/1995

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Many people and institutions (national and international) have helped in this work to be carried out. I would like to thank all of them from the bottom of my heart, but in particular I would like to thank :

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Finally, I would thank Iranian mothers, who agreed to participate in the study and gave their invaluable time to respond. I wish them all the best.

ABSTRACT

Fertility and fertility control behaviour in the context of developing countries is substantially important because of its health, environmental, socio-economic, and policy implications.

This study investigates the fertility behaviour of 406 Iranian women, randomly selected from three regions of the capital city of Tehran. These women were once married, aged 15-45 years and fertile. Demographic, socio-economic, attitudinal and policy-oriented variables relevant to fertility and fertility control behaviour together with psychological factors such as 'subjective norms' were taken into account in order to analyse the issues comprehensively.

Data was collected through a questionnaire, including three scales for 'abortion', 'contraceptive', and 'son preference' with 20 items, and 33 questions which have been recognized as valid, important, and influential on fertility and fertility control behaviour. Alpha Cronbach was calculated for each scale separately and for all items collectively. It revealed a very high 'intercorrelation' and 'internal consistency' among items of each scale and all other items and demonstrated a very distinctive reliability.

Chi-Square test, Analysis of Variance, Multiple and Stepwise Regression analysis were conducted in order to find association, differences, effects and importance of each variable on the sample's attitudes and behaviour towards abortion, contraceptive usage, sex preference and family size.

Demographic and socio-economic factors have significantly differentiated fertility behaviour of the respondent. A significant relationship was found between 'duration of marriage' and 'existing family size' on the one hand, and between 'women's status', as a combined variable, and 'ideal family size' on the other. A similar significant relationship was also found between 'women's status' and 'ideal family size' as well as 'attitudes towards

son preference' ($p < .01$). It has been concluded that 'attitudes towards abortion' and 'contraceptive usage' have mainly been affected by post-war socio-economic circumstances as well as policy-oriented variables.

Multiple and stepwise regression analysis demonstrated 'duration of marriage' - 'age at marriage' - as the strongest determinant of family size which accounts for about 62 per cent variation of 'family size' among the respondent. 'Education' as one of 'women's status' variables demonstrated stronger effect on 'family size', 'ideal family size' and 'son preference' than did the other variable, 'occupation'. 'Perceived ideal family size among other families' as a psychological factor, together with 'existing family size' of the respondents was recognized as major determinant of their 'ideal family size' and account for 29 out of 31 percent variation about the 'ideal family size' of the respondent. Data was processed by using SPSS and STATVIEW GRAPHICS statistical packages.

All important and determinant variables and their multidimensional implications on fertility, fertility control and social life are investigated. The findings are discussed with reference to gender differences as well as other structural characteristics of the study site.

The study revealed that 'husbands', 'health workers', 'friends and neighbours' are the most influential groups on fertility related behaviour of the respondents. There are also indicators of a successful family planning program effort on national level population growth control. It has also been asserted that the effectiveness of the programs is due mainly to post-war socio-economic circumstances. Despite this achievement, fertility control behaviour has a long way to be institutionalised and mean time there are some structural components which may favour higher fertility particularly in the absence of an effective family planing program.

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CHAPTER ONE

Introduction

1.1 The significance of the subject

There is no social problem, other than war, that has attracted greater and more sustained public concern during the decades since World War II than the "population explosion" (Tsui and Bogue, 1978). And in no part of human affairs is there as profound a change of both attitude and practice now taking place as in family planning. Although more and more people are becoming aware of the consequences of the explosive population, it remains a problem (King and Lond, 1966).

Developing countries face many difficulties and a rapidly growing population is one of the most important, according to Nafis Sedigh, deputy Secretary General of the United Nations (Sedigh, 1993).

According to the United Nations (1987), high rates of population growth could pose serious problems for developing countries' governments in providing adequate education, health, employment, housing, recreation and food. Continued population growth makes it more difficult to achieve economic improvement. Moreover, because of the close linkages between the growth of population and demand for social services, the population issue has major policy implications for the developing world (Sakyi and Heaton, 1993).

With an annual growth rate of three per cent, total population will double in 23 years. Accordingly, the majority of developing countries must count on the having to build twice as much production during the next twenty years or so, just to prevent a lowering of present living standards, in other words, poverty (Valentey, 1978). Poverty is only one of the implications of

unimpeded population growth. There are other important socio-economic, political, environmental and health implications of population growth which are briefly discussed next.

1.2 Socio - economic and political implications.

Unrestrained population increase causes political instability, widens the gap between poor and rich, facilitates regulation of social life, lowers economic growth, poses problems of social adjustment and increases abortion and female infanticide (Smith, 1992; Blank, 1991; Mc Namara, 1991).

Currently “population pressure” or World Systems Frame is a dominant view in population studies. Today as in the recent past, population growth is recognized as an influential factor in national and international conflicts. Population pressure may lead nations to press outward from their borders in search of so-called, “Living Space “or “Lebensraum”, as the Nazis did. It is argued that population pressure will be a source of future conflict if it is not controlled (Wilmoth and Ball, 1992; Clinberg, 1971).

However, the increase occurs mainly among the third world and developing countries. It is estimated that more than 90 per cent of world population will belong to the developing countries in very near future (Bryant et al., 1993; UN, 1987; Eshraghi, 1987). It has been stated that the pattern of growth and the ultimate size of the world’s population will depend heavily on what happens in Africa and Asia (Mukerji, 1988).

In human experience, population growth is inconsistent with progress in reducing the number of people in extreme poverty. Physical and intellectual impairment of children born in poverty will continue, reinforcing economic differentials within societies. Other important human costs are likely to

include the degradation of public amenities and physical environment and an increasing government regulation of social life (Mukerji, 1988).

Family planning could have as much political effect as population growth. For instance, sterilization raises the spectre of abuse by governments when used as a means of population control. Because it is a permanent means of terminating fertility, it has been proven to be attractive to some governments. For example, the sterilization program in India, under which upwards of seven million people were sterilized in one year, raised widespread claims of coercion and contributed to a change in government in 1977 (Blank, 1991).

Among developing countries, Muslim countries have highest rates of population growth due to high rates of fertility, as well as other socio-economic and cultural circumstances (Moghadam, 1990; Nagi, 1984). Among these countries, Iran and Pakistan (Shiite countries) have occasionally had exceptionally high rates of fertility (Nagi, 1984).

Iran, particularly after the Islamic revolution, has experienced an unprecedented population growth and in less than 15 years its population has increased one and a half times in comparison with Australia's population.

1.3 Environmental implications of population increase

Environment, either as a basis for human life or as an arena for investment and development, has attracted attention *viz a viz* population growth. Some believe that earth's limited life support capacity demands population growth control, since unimpeded population increase will destroy all vital resources such as soil and water. On the other hand it has also been suggested that a successful development policy needs a sound environmental context, otherwise it fails (Elliott, 1994; Norgaard, 1994).

The argument has been developed further by other scholars. Brown has pointed out that "we have reached the point in development in places like Africa where we have to recognize that simply applying economic criteria to development projects is no longer viable. When there were 200 million people in Africa in 1950, development agencies could invest money and conditions would improve. But with a population of 580 million humans, demands are exceeding the carrying capacity of local biological systems, leading to consumption of the systems themselves. That is why Africa's forests are disappearing, its grasslands are deteriorating, and its soil is eroding. Investing in sawmills or meat packing plants now may only speed the deterioration. Development policies that are not grounded in an environmental context are failing. Success now starts with the formulation of an ecological sustainable development strategy" (Smith, 1992).

Although environmental deterioration in developing or less developed parts of the world can partly be attributed to colonialism, and an unequal economic-political relationship between developed and developing countries, which in turn resulted in the exploitation of the natural-environmental resources of developing countries, nowadays an environment crisis due to population increase has become a universal problem, threatening the whole world.

For example, Mc Namara (1991) has noted that high rate of population growth has been a major factor increasing the demand for firewood, which has led to widespread deforestation in many developing countries. In these countries, the estimated 1.3 billion people who depend on firewood for fuel are cutting it faster than it is being replaced, with resultant damage to effective flood control, arable lands, power production, and household economics. Silting of dams, caused by clearing of watersheds, is reducing their useful life by 50% (Eshraghi, 1987). In Tanzania, firewood has become so scarce that each household spends 250-300 working days per year simply gathering its wood

supply. According to Mc Namara (1991), in China, 70 million of 170 million households-300 million people- suffer serious fuel shortages for up to six months a year. In much of West Africa, families who traditionally cooked two meals a day, can now cook only one meal a day or one every other day.

E.O.Wilson estimates that human activity causes the extinction of at least 20,000 species of plants and animals every year, and at the present level of North American consumption, earth could only sustain perhaps 200 million. Suzuki, (1993) states that there are far too many people on earth, and Demeny (1990) concludes that consequences of war are probably trivial compared to the impact of population growth. Bongaarts, (1993), has stated that to environmentalists such as Brown, Ehrlich and Elrich, Meadow et al. and Myers, the world food situation has reached an unstable state and, in the long run, substantial growth of production is considered simply unsustainable. From their point of view, "human numbers are on a collision course with massive famine. If humanity fails to act, nature will end the population explosion for us - in very unpleasant ways- well before 10 billion is reached" Ehrlich, Ehrlich and Dairy (1993).

What are, or would be, the major environmental problems and what is the main cause of them? David Suzuki (1993) replies, when everything is interconnected and our ignorance is so great, it is difficult, if not impossible, to choose the most critical problems. Is ocean pollution any less hazardous than ozone depletion or deforestation? But we can identify the cause of the current global ecocrisis- us. We are at the core of the issues whether they involve pollution, acid rain, or species extinction. And one manifestation of the problem we create is our own explosive growth in number.

1.4 Health implications of population growth.

Population growth as the result of high rates of fertility, successive pregnancies and births has effects on the health of mothers and their children. Infant and maternal mortality because of early marriage, too frequent and numerous deliveries, and unqualified abortions, together with back disorders, general physical weakness, and psychological problems, are some of them (Valentey, 1978). Moreover, the size and age-group distribution of a population (population pyramid) is changed if the patterns of fertility and family formation in a society are changed. These shifts have a number of policy implications, since they affect the patterns of morbidity and mortality among different groups of the population (WHO, 1979).

A number of child health conditions have been linked to the number of child deliveries, family size and birth order as well as to maternal age. Included are congenital malformation, physical handicaps, malnutrition, dental problems, infectious diseases, emotional problems and mental illness. Some conditions, like malnutrition, are probably directly related to increased strain on family and maternal resources with each additional child. In the case of common infections, over crowded families (larger family size) may simply lead to more frequent exposure to infectious agents through other family members.(O'Hara and Berman, 1984; Watson, et al., 1979).

Poor spacing, as the result of frequent pregnancy, and prolonged breast feeding tax a woman's health and expose several other health implications for mother and child. If a woman married early and spent the entire period between puberty and menopause being either pregnant or breast feeding, and if she also worked hard at multiple tasks in the household and in agriculture, the strain on her and her child's health was heavy (Boserup, 1990). For example, in Bangladesh and the Philippines, children born within 15 months of

a preceding birth are 60-80 per cent more likely to die before age two than are other children, even after controlling for prematurity (Koenig et al, 1990).

Changes in fertility have direct, although sometimes complex, links to women's health. Overall, declining fertility has been associated with decreased maternal morbidity and mortality. The fact that high total fertility is usually closely linked to the higher risks associated with child bearing at the beginning and end of the reproductive years, tends to strengthen the beneficial health impact for women of declining fertility rates, in spite of the fact that a higher percentage of births are first births (Leslie, 1992).

The World Health Organization has estimated that 500, 000 women die annually from pregnancy-related causes; between 100, 000 to 200, 000 of these deaths are due to improperly performed, and usually illegal, abortions (Rosenfield, 1989). The risk of death from clandestine abortion performed under unhygienic conditions, is estimated to be 100 to 500 times greater than the risks of a safely performed procedure, and even women who survive often suffer high levels of morbidity (Leslie, 1992).

Higher rates of abortion following the birth of the third or fourth child, abortion of female fetuses together with rising rates of female infanticide due to pressure from government population control policy (e.g, China), can produce many serious social and health implications. These unnecessary deaths represent one of the world's great tragedies. Moreover, it has been shown that the death of a mother increases significantly both the morbidity and mortality rates of her surviving children, particularly those under age five.(Editorial, October. 1992, AJPH, p 1325)

Adolescent/teenage pregnancy and parenting are recognized as significant medical, social, and public health problems (Mchoney, 1988). Infants of teenagers are a vulnerable group which experience higher mortality rates than

infants of women in their 20s. This situation is aggravated by social disapproval of unmarried adolescent pregnancy in some developing (e.g, Muslim) countries. Any biological risks associated with premature fertility are presumably similar, whether an adolescent is married or not, but the social risks, which appear to account for most of the poorer maternal and infant birth outcomes among young mothers, may be quite different. Jones (1993), has pointed out that because unmarried women experience shame, criticism, and/or denial about their pregnancy, they may be less likely to seek timely prenatal care and be more likely to seek late or otherwise unsafe pregnancy termination. In 1985, over one million teenagers became pregnant, resulting in over 400, 000 abortions and nearly 500, 000 full- term pregnancies. Of these pregnancies, more than 31, 000 were to females fourteen years of age and younger (Blank, 1991a). Research from Chile indicates that social disapproval is associated with many negative consequences for both the adolescent mother and her child (Buvinic, et al. 1991).

There is another vicious circle with adolescent pregnancy and child delivery. Daughters of teenage mothers fall behind in school, and the educational failure functions as a mechanism through which the daughters themselves become teenage mothers (Manlove, 1994).

It can be concluded that, in a developing country, early marriage can result in a high rate of adolescent maternal mortality and morbidity particularly if abortion and pregnancy for unmarried adolescents is illegal. This situation, undoubtedly, leads them toward illegal and most likely unsafe abortion, which itself is one of the major causes of maternal mortality.

However, adolescent fertility is measured in terms of the number of births per thousand young women from 15-19 years. Adolescent pregnancy has potentially deep, and, on many occasions, a direct effect on the adolescents'

social life. For example, a girl who already has two children at age 18 years, loses a great deal in education and job prospects (WHO, 1993b). This situation is not limited to adolescents. Returning to the labour market for mothers after child bearing has coincided with various problems such as reduction in wage and salary, low position, and costs associated with child care.

Since over-populated countries and areas are normally associated with poverty, density, low level of education, and other characteristics which are usually attributed to less developed areas, it seems that infectious and contagious diseases can multiply in these circumstances. In such a situation epidemics, as well as natural disasters, will certainly cause irreparable damage. However, effective barrier methods for pregnancy prevention can help to prevent the spread of one of the most dangerous diseases, HIV-AIDS, which is endemic in many areas (Newton, 1987). A study in Sub-Sahara Africa found that three million women had been infected with HIV, along with one half million infants who contracted the virus before, during, or shortly after birth. It has been estimated that, nowadays, developing countries account for over 90 per cent of all new infections (Elias, and Heise, 1993).

1.5 Reasons that support the investigation of these issues

The study of fertility and family planning has great scientific importance. Fertility is, of course, a major determinant of the size and growth pattern of the family, an institution of universal importance. Anything which increases our knowledge of such a fundamental process is likely to enlarge our knowledge of the behaviour of society (UN; 1970). The study will focus on women as central to fertility (The Population Council, 1972a) as well as their important role as a key health source for their families (WHO, 1985).

Women carry more responsibility for health through their contribution to the health of their families and communities, both formally and informally. This importance of women in health care activities is true for most countries, developing and developed, and is a phenomenon which predates the emergence of modern health care systems. It is women who are expected to be health educators, to teach sound health practices to future generations, to create a home environment that is conducive to health (from clean water to nutritious food), to limit family size, to ensure that children are immunized and cared for during crucial years, to take them to the formal health care services when necessary, and to care for the elderly. Women often serve without monetary compensation as traditional birth attendants, still deliver most babies in the developing world and constitute the majority of volunteers in hospitals, self-help clinics, and other community organizations. They are, therefore, already providing a great part of primary health care (Browner, 1989; WHO, 1985).

However, the side effects of frequent pregnancy, early marriage and poor spacing, prevent women enjoying physical, mental and social well-being as well as performing their roles and functions properly. Consequently, the health status of the family and society are affected.

Also this study could foster participation of the public in the health system which is vital for improving efficiency and effectiveness of health programs. In this respect, WHO has stated that “ an essential ingredient of the world-wide strategy for ‘Health For All’ is the involvement of the public, not just in the support and operation of health services, but, more importantly, in determination of health priorities and the allocation of scarce health resources. Indeed it is argued that the target of ‘Health For All’ will be unattainable unless radically different forms of health care are put into practice, permitting the development of health services that are people’s services, responsive to

people's needs in respect of health and development, and encompass more than just services designed and maintained by health personnel or focused solely on medical care (National Health Strategy, 1993).

In respect to these policies and program, research is needed in order to update available information and help decision-makers to adopt proper and effective policies. This need is more pronounced if the conflicting findings of existing studies are taken into account.

Furthermore, although several surveys or studies might have been conducted previously in the population and family planning areas, it is worth noting that a plan or a study that is appropriate for one time and place may be very inappropriate for another place or the same place at different times (The Population Council, 1972a).

1.6 The importance of attitudes

Any effective intervention in human issues has to deal with attitudes and beliefs, and implementation of family planning which focuses on changing family size has to be considered in the context of socio-cultural values as well as individual beliefs. This becomes more pronounced when we consider the implication of family planning in a society such as Iran, where religion has had a greater role to play particularly after the Islamic revolution.

Personal preferences and attitudes, which in turn depend on education and many other factors, have a strong influence on the number of children desired, and in these days of efficient family planning, on the number of children actually born (Aly and Shield, 1991; Pollard et al., 1990; Freedman, 1986). Moreover, achievement of sustained use of contraception, the objective of both the user and the program managers, depends on the perception and the response of individual users. It has also been stated that thinking about

contraceptive service programs in governments and in professional population organizations is generally dominated by the perspectives and attitudes of managers, scientists and population professionals (Mukerji, 1988).

In line with the emphasis on the importance of attitudes and acceptance of a process or a phenomenon, UNESCO's constitution has stated that, "as the source of any conflict is the human's thought, the defence for peace should also be based on their thought". This is a clear statement on the role of mentality as an important determinant of human behaviour. According to Fishbein and Ajzen's Theory, the strongest predictor of behaviour is intention to enact the behaviour. Behavior intentions are said to be directly predicted by two components made up of attitudes and beliefs about the behaviour and beliefs about others' attitudes towards the behaviour. While these are thought to predict behavioural intention, no direct effects of these components on behaviour are expected. This model adds that background and socio demographic factors such as socio economic class and education, often examined in relation to population, can be considered as distal factors, affecting behaviour only through more proximal psychological variables (Tashakkori et al.1987; Ajzen and Fishbein, 1980).

However, in spite of different approaches to analysis of fertility, there is a common agreement on the importance of attitude change as an important determinant of fertility reduction and as explanation of why fertility changes in the process of development (Keeley, 1976).

Social norms and cultural variables are recognized as important determinants of attitudes (Findlay and Findlay, 1987). In Iran, these variables dramatically changed in the wake of the Islamic Revolution. The revolutionary values influenced fertility behaviour of the Iranian families and encouraged them to be more reproductive. Families with more children were privileged and the

population of Iran increased tremendously in the last decade. Socio-economic circumstances were affected by the eight years destructive and full-scale war between Iran and Iraq. These conditions postponed socio-economic development and stimulated Iran's government to adopt a population control policy (Aghajanian, 1991). As an inevitable strategy family planning services reimplemented.

1.7 The aims of the study

Population growth in Iran has been documented since the onset of the present century. It has been accompanied by Westernization, socio-economic development, and become a matter of concern in the last two decades of pre-revolution government. Its growth impeded in the last years of Shah's regime by implementing a nation-wide family planning services. But after the revolution in 1979, its growth rates increased to one of the highest level in the world.

It has been postulated that this is the Islamic teachings that encourage families to be pro-natalist (Cleland, 1985), but others may argue that this is the structure of the society, rather than Islamic teachings, which is responsible for higher fertility and population increase. On the other hand, increase or decrease in population growth may be attributed to acceptability and accessibility of family planning services which were nullified at the onset of the Islamic Revolution. Whatever the reason, families are known as the main units of reproduction and their fertility and fertility control attitudes are recognized as the most important factors of family and population size change. Therefore, it seems that the understanding of fertility changes and population growth, requires a comprehensive psycho-social approach towards the issue. Consequently, the main focus of this study will be on various structural aspects of family formation, current and future fertility and their determinants,

as well as influential attitudes towards fertility, fertility control and family planning acceptability.

Regarding the characteristics of these kinds of studies, the study would help policy makers improve existing services. Moreover, collected and analyzed information can be used as an empirical basis for broader and further studies.

CHAPTER TWO

Review of literature

2.1 Population Growth and Family Planning in Iran

2.1.1 Introduction: The historical background

Economic growth and industrial development have performed contradictory roles in the context of population growth and fertility among developed and developing countries. Among developed countries, it has reduced mortality and fertility rates and has provided a relative balance between these two. But in developing countries, mortality rates have declined because of imported medical technologies, and by activities and the support of international organizations directed to fulfilling basic needs. However, this decline in mortality rates, has not been accompanied by a decline in fertility rates. These circumstances have been assumed to be the main cause of the contemporary population explosion (Smith, 1992). However, since the effect of development on fertility, fertility control and population growth is undeniable (UN, 1987), it seems important to review the case of Iran from the commencement of its socio-economic development.

2.1.2 Beginning of population growth in Iran:

The West Asia and North Africa region includes 19 Arab countries as well as Turkey and Iran. By world standards, it is a region of relatively small countries and the most populous nations among them are Turkey, Egypt and Iran (Greenhalgh, et al. 1992).

Iran is among the 10 most populous Islamic countries and faces a rapidly growing population and urbanization. It has been estimated that in the year

2020, Iran will be the fifth most populous Islamic country (Zanjani, 1993). Population growth in Iran was slow (6 per thousand) until the end of the first quarter of the twentieth century (Statistics Centre of Iran, 1991; Bharier, 1968). The beginning of both economic development and rapid population growth can be traced to the period of Reza shah's rule since 1926, Lieberman (1979).

Iran's rate of population growth doubled during the second quarter of this century, and since then the population of Iran has been characterized by steadily increasing fertility rates until the mid-1970s. These increases are considered to be consequences of improvements in economic modernization, as well as of political centralization (Aghajanian, 1991; Lieberman, 1979). Table 1 displays population growth rates in Iran between 1900 and 1979.

TABLE 2.1.2.1

Size and Annual Growth Rate of Iran's Population, 1900-1979

'Please see print copy for image'



Sources: J. Bharier, "A note on the population of Iran, 1900-1966," *Population studies*, 22, no. 2(1968): 273-279; Bharier (1972), Clark, (1972), and Statistics Centre of Iran, (1976 and 1991).

As Table 2.1.2.1 indicates, population growth gradually accelerated from an annual rate below one per cent in the first quarter of the century, to rates of

two per cent in the 1940s and 1950s and to three per cent in the 1960s and 1970s.

Socio-economic indices changed remarkably in the same period. The labor force, which was mainly involved in agriculture sectors, changed in favour of the industrial and service sectors (Clark and Fisher, 1972; Statistics Centre of Iran, 1976). Other indicators show similar evidence of rapid change in economic structure and conditions of life and work. For example, average per capita income has grown substantially, especially in the last twenty five years. The literacy rate for men and women over the age of 10 years has increased from less than five per cent in 1900 and from less than 10 per cent in 1948, to 15 per cent in 1956, 28 per cent in 1966, and 43 per cent in 1976 (Bharier, 1971; Statistics Centre of Iran; 1976). Finally, the proportion of the population living in urban areas, which remained at 21-22 per cent from 1901 to 1940, had risen to 31 per cent by 1956, 38 per cent by 1966, and 47 per cent by 1976 (Bharier, 1972; Statistics Centre of Iran, 1976). The lion's share of the population increase occurred in Tehran. It has been stated that while the population of the entire country increased by 36 per cent during 1956-1966, the population of Tehran increased by 80 per cent (Moore, Asayesh, and Montague, 1974). The number of urban centers almost doubled between 1956 and 1976 and, by the continuing flow of migrants, the proportion of the population living in urban areas increased to approximately 50 per cent of the Iranian population by 1976 (Kohli, 1977).

In the 1950s and 1960s, fertility levels were in the range of 6.5- 7.5 births per woman (Greenhalgh, et al, 1992). Available information indicates that in the 1970s, before the Islamic Revolution, fertility levels were high - a crude birth rate of about 45-50 per thousand and a total fertility rate above seven , possibly as high as eight children per woman (Lieberman, 1979).

In spite of low population density in Iran before the 1979 revolution (19 persons per square kilometre), when one calculates the size of population against the proportion of arable land (which has been estimated as only 13 per cent of the total), and takes into consideration the limited water resources, the implications of population growth as a serious problem are understood (Moore et al., 1974). The conditions are aggravated if the age structure of the population as well as the destructive effects of an eight year, full scale war between Iraq and Iran are taken into account.

The age structure of Iran's population was, and still is, typical of less developed countries with a high dependency ratio, a population under 15 years old and the problems associated with a large, young, dependent population (Darabi, 1976; Moore et al., 1974). In almost all censuses conducted in Iran, the dependency rate was over 40%, and sometimes, 50% per cent (Statistics Centre of Iran, 1992). The youthfulness and non-productivity of the population, because of its age structure, places more pressure on critical resources, such as arable land and water. Moreover, it is projected as the main cause of a potential continuation of high rates of fertility for at least two to three decades (Zanjani, 1993; Nagi, 1984; Moore et al., 1974).

2.1.3 Family planning before the Revolution

The increasing population and its threatening growth rate, together with attributed socio-economic side effects, became a concern of the Iranian government after the 1966 census. In 1967, the government proposed a population policy aimed at reducing the population growth rate to two per cent initially and to one per cent by 1990 by promoting lower fertility (Lieberman, 1979; Mossavar, 1983). Its distinctive strategy for achieving this

goal was a family planning program providing widespread contraceptive services (Aghajanian, 1991).

In 1967, when the official family planning program commenced, (Zanjani, 1993) the number of accepters in the program was only 10,000, a negligible proportion of women aged 15-44 years old. By 1976, the reported number of contraceptive accepters exceeded 570,000, equivalent to 11 per cent of women of reproductive age (Norman and Hofstatter, 1980).

In 1970, family planning services integrated with maternal and child health services. This integration has been recognized as a necessary and significant step towards a better and more comprehensive program performance. As a consequence, some changes in attitudes of Iranian women towards family size appeared. For example, findings from Beeman's and Bhattacharyya's (1978) study have revealed a tendency for younger women to desire a smaller number of children, although they tend to express a desire for three or four children, rather than for the two children prescribed as the optimum.

Despite the increasing number of contraceptive accepters, population programs have had certain deficiencies. These programs were mainly urban-oriented and suffered from the overall neglect of rural areas in the allocation of development expenditures. Moreover, there were problems in their administration and performance. The low rates of continuation of contraceptive use among the accepters have been attributed to these problems (Lieberman, 1979; Beeman and Bhattacharyya, 1978; Moore et al., 1974).

2.1.4 Contraception methods

Among contraception methods, the pill was more popular and more readily accepted than other modern contraceptives, apparently because it did not interfere with the woman's abilities to perform her religious duties. A study in

a small town in north-west Iran (Good, 1980), has revealed that women who do not suffer from spotting, use the contraceptive pill to prevent menstruation during the Ramadan fast, thus eliminating the need to fast at a later time. The pill was also popular among several young women who went on the Hajj pilgrimage to Mecca. They took the pill throughout their trip to prevent menstruation and thus avoid ritual uncleanness. Women also use the contraceptive pill to induce abortions. It is not uncommon for women to take a month's supply in a day to bring on menstruation when they suspect they are pregnant with an unwanted child. In contrast, the I.U.D never became popular because it increased the level of bodily discharges and created a religious sense of impurity in women (Mossavar, 1983).

The increased use of contraception did not reduce the widespread practice of abortion. In 1972 it was estimated that in the city of Tehran alone, there were 20 to 30 abortions per 100 live births, in spite of the illegality of abortion. In recognition of this statistic, the government legalized abortion in 1973 (Aghajanian, 1991; Mossavar, 1983).

Parallel to provisions of birth control methods and the legalization of abortion, other decisions were made in order to promote the social status of women and to lower fertility. Raising the marriage age was one of the most important decisions (Nagi, 1984), although the government decision in this regard was not practiced all the time, particularly in rural areas (Beeman and Bhattacharyya, 1978).

However, as a result of substantive contraceptive use, of widespread abortion practices, of the enhancement of the legal and social status of women (socio-political participation, family protection law and prohibiting polygyny without the wife's permission), fertility in urban areas particularly in Tehran was estimated to be about 25 per cent lower than for the country as a whole. In

terms of a statistical approach towards the issue, it can be said that fertility had fallen from about 7.3 to 6.3 births per woman by 1975 (Greenhalgh, et al, 1992; Aghajanian, 1991; Mossavar, 1983).

The onset of fertility decline (moderate nationally but high in metropolitan areas) coincided with the victory of the Islamic Revolution in 1979.

2.1.5 Family planning in Iran after the Islamic Revolution

The 1979 Islamic Revolution and the subsequent establishment of the Islamic Republic, marked a distinctive turning point in the social and political history of Iran. Among other changes, the fertility control policy of the former regime was denounced and abandoned by the revolutionary government (Aghajanian, 1991).

Following the 1979 Revolution, women, particularly urban women, were asked to follow Islamic values by giving up their jobs outside the home and turning their energies towards providing good homes and high-quality child care. Men were asked to fulfill their Islamic obligations by supporting their families economically. In the rural areas, women's work was already home-based, and thus it was not in need of change. Government attitudes to fertility control turned hostile under the Revolutionary regime. Former government support for postponing marriage and for birth spacing was withdrawn. Certain methods of birth control were removed from the market, and abortion and sterilization were prohibited (Greenhalgh, et al., 1992).

The new government also repealed the family protection law, adopted by the Shah's regime, as inconsistent with the principles of Islam (Mir hosseiny, 1993). By this law, women's rights in divorce were protected and unilateral divorce by husbands without their wives' agreement was illegal. Traditional positions and roles for women were admired (Nashat, 1983). Regulations were

introduced governing the public appearance of women and their clothing. The segregation of women was enforced in public places, universities and at work. Women were praised, above all, for being good mothers and wives. In public speeches by religious and political leaders, Islamic Republic officials stated that women's first priorities are marriage, children and the home. Extra-household roles, advocated under the modernization efforts of the Shah's regime, were held to contaminate Islamic values and to pose a threat to society (Aghajanian, 1991). This policy of the new government strongly endorsed the traditional view of early marriage and a rejection of the use of birth control.

In line with this approach, the legal age for marriage was reduced from 18 to 13 for females and from 20 to 15 for males. Late marriage and programs to lower fertility were overturned and the Islamic government saw and proposed marriage as a panacea for all societal problems (Tashakkori et al., 1987; Mossavar, 1983; Pakizegi, 1980; Daraby, 1976; Moore et al., 1974). As a result, the earlier moderate decrease in fertility was slowed and the trend even reversed. The crude birth rate increased by nearly 12 per cent in comparison with its pre-revolutionary level (Aghajanian, 1991).

There were other contributing factors affecting population increase in Iran. The long term full-scale war between Iraq and Iran, and social crisis in Afghanistan caused an influx of refugees from east and west into Iran. Consequently, in a period of 10 years, 1976 to 1986, Iran's population increased by 15.7 million (Plan and Budget Organization of Iran, 1993). By comparison, the size of the increase of population in Iran in 10 years, is nearly equivalent to the total Australian population after 200 years. Moreover, economic progress as a development factor and thus an impediment to population growth, was absent because:

- 1- The first of the conditions for economic progress is the absence of a “major war” (Demeny, 1990). There had been a destructive war.
- 2- Lack of a detailed economic program by the revolutionary regime at the time of their taking power, and their downgrading of economic growth as a focal objective (Lieberman, 1979).
- 3- The universality and of the increasing rates of marriage after the war, as had occurred after the second world war among the young (Caldwell, 1982) and which led to an immediate baby boom in Western Europe, North America and Australia (Yusuf, 1980).

The encouragement of early marriage and procreation, resulted in a significant increase in the rate of marriage of the young and of the more reproductive age-groups and contributed to a pro-natalist social environment. During 1976-1986 the downward trend in fertility of the former decade (1966-1976, before the revolution) was reversed and the rate of population growth, once again, accelerated dramatically. The size of the population rose from 33.7 million to 49.4 million in 1986. This implies an average annual rate of growth of between 3.8 and 3.9 per cent (Zanjani, 1993), which is one of the world's highest rates for a national population.

Increasing demographic realities have been affecting governments attitudes and resulting in the formulation of specific population policies (Findlay and Findlay; 1987; King and Lond, 1966). The Islamic government was no exception. Although it was difficult for some researchers (Mossavar, 1983) to predict how the revolutionary government would handle family planning in the future, and because of the characteristics of a male dominated society, the revolutionary government re-implemented a family planning policy through its long term development plans. By the end of the 1980s the regime's resistance

to family planning had subsided, and consensus had emerged favouring the ready availability of contraception.

The devastating effects of the Iraq-Iran war on the economic structure of the country, and taking into account the individual as a set of needs and requirement, at the time of birth, it will be obvious that in the case of intense population growth, the need for expenditure on food, housing, and other vital requirements will be increased steeply. Therefore, the primary consideration for adoption of population control policy through family planning programs, seems to be the economic cost of provision of services under conditions of a large population increase (Greenhalgh, et al, 1992; Valentey, 1978).

Analysis of data from censuses has revealed that from 1976 to 1991 about 1.6 million each year have been added to Iran's population. The number of households also increased from 6.7 million in 1976 to 11.1 million to 1991. This increase has been accompanied by an increase in the size of household from 5 to 5.2 persons (Plan and Budget Organization, 1993).

The increasing size of the population alerted policy makers to achieve appropriate economic development objectives. In order to prevent the high rate of population growth and its side effects upon economic structure of the society, in the second plan of development the government determined a reduction of fertility rate, the acquiring of knowledge and technology of pregnancy prevention, particularly for deprived areas of the country as main objectives of the population policy. In this respect, all hospitals, community health centres and clinics were entitled to allocate a part of their activities for birth control services. Moreover, a practical decision was made and was implemented in order to cancel family benefits for fourth children and beyond.

Due to these attempts directed toward population control, and as a consequence of socio-economic circumstances, universality of marriage from

1986 to 1991 reduced 4.7 and 4 per cent for women and men respectively. Moreover, age at first marriage increased about 0.6 year for women and 1 year for men. Also the child-woman ratio decreased from 6.4 to 5.1 during these years and infant mortality rate fell from 108-114 per 1000 before the revolution (1979), to below 50 deaths per 1000 by 1988 (Plan and Budget Organization, 1993; Greenhalgh, et al, 1992; Mossavar, 1983).

Despite these facts, population growth in Iran is still high. The International Ettelaat (23 February 1995) reported that in the first nine months 1995 (according to local calendar) 1,110,000 newborn children have been added to Iran's Population. It has been stated that even by slow reduction of fertility rates, population growth will remain high at least for 27- 28 years because of Iran's young age structure (Zanjani, 1993).

2.2 Population, fertility and fertility control in Islam and Islamic countries

2.2.1 Introduction

Scholars who are familiar with conditions throughout the Arab world today would accept the proposition that a serious population crisis exists in the Islamic nations of North Africa and Southwest Asia. The crisis exists largely because of the persistence of very high birth rates throughout the region (Nagi and Stockwell, 1982). The cultural context has been recognized as one of the reasons for the continuance of high fertility rates in Islamic countries (Findlay and Findlay, 1987). In addition, it has been understood that “it is surely the ability of the Islamic heartland to withstand the invasion of new and largely Western ideas that accounts for the higher rates of fertility in those settings” (Cleland, 1985).

This part will initially explain the characteristics of Islamic populations in terms of early and universal marriage and family formation, emphasis and value of child bearing in general, and sons in particular, as well as different views on family planning and fertility control measurements, pregnancy prevention methods and the status of women.

2.2.2 Family, family formation and characteristics

Islam is the dominant religion and ideology in the major part of the Middle East, although its followers are scattered and can be found in most parts of the world. Almost a fifth of world’s population lives in Islamic countries and Islamic peoples make up the majority of the population in more than thirty countries. Despite pronounced diversities in ethnic background, economic infrastructure, political ideology, and population size, Islamic peoples have common characteristics in terms of socio-religious features which have

exhibited a significant impact on their demographic characteristics (Findlay and Findlay, 1987; Beck, 1980). They are distinguished by a composite of economic, demographic, and social variables that have been consistently highly correlated with high fertility in other parts of the world. They exhibit a general positive valuation upon high fertility together with early and universal marriage which have been recognized as common cultural characteristics of Islamic nations (Youssef, 1980).

The family as the main unit of fertility and population growth has been the focal point of attention of Islam. It has been asserted that Islam has developed very specific ideas about the nature of family life, the roles of men and women in society and attitudes towards child bearing. For example while Christianity speaks more to the individual and less to the family than any other major religion (Caldwell, 1982), Islam puts significant emphasis on family, family formation and starting family, compared with many other ideologies and social systems (Mirhosseiny, 1993; Findlay and Findlay, 1987). Consequently, it has a particularly profound impact on societal attitudes towards demographic matters.

The emphasis on family in itself may not be an influential determinant of fertility, rather, it is its structure and characteristics that determine the size of family, roles of parent and of children. The dominant type of family among Islamic nations is constituted by formal marriage. Marriage itself has great socio-religious value. All Muslim males are encouraged to marry to “complete half their religion”. It is a sacred contract in which under ordinary circumstances, every Muslim must enter (Zuhrol Haque, 1973). Not only marriage of singles, but also early remarriage of widowed and divorced women is highly recommended (Fagley, 1973; Kirk, 1973; Ammar, 1973). The prevalence of marriage, sanction for the early remarriage of widowed and divorced women, and the positive value attached to sexual intercourse within

the bond of marriage have been recognized as contributors to the prevalence of the married state. Celibacy is contrary to Islamic rules and ethics. The Muslim religion strongly resents the idea of celibacy and insists on marriage (Fagley, 1973; Husein, 1973).

The great proportion of the 15-19 age cohort of married women among Islamic countries, displays a tendency for very early marriage (Findlay and Findlay, 1987). It is apparent that Muslim women spend a larger part of their reproductive life in marriage than do their counterparts in other countries. The tradition of early marriage in Muslim countries has been assumed responsible for maintaining fertility at a high level (Nagi, 1984; Kirk, 1973).

The purpose of marriage is explicitly stated to be for procreation as well as for gratification of spiritual and physical needs. This has been interpreted as the approval or sanction of sexual intercourse within marriage and its positive value independent of reproduction (Beck, 1980; Fagley, 1973).

For women in particular, marriage is the goal of life and represents the socially sanctioned initiation of sexual activities and child bearing (Fahs Beck, 1973; Nagi, 1984). One anthropological study has revealed that from birth onward, girls are prepared for marriage and later prepare their own offspring for this role in the same institution (Ardehaly, 1986; Pakizegi, 1980). Age at marriage is lower for women than for men in all Muslim countries. The difference in age at marriage is strengthened by the greater education and work participation of males (Kirk, 1973).

It has been pointed out that intra-family marriages are preferred and are promoted by Islam as a means of consolidating family wealth and avoiding the dispersal of property (Darabi, 1976). Intra-family marriage is an appropriate context for the growth of extended families, which in turn is recognized as a proper context for higher fertility. It has been stated that members of

extended families tend to have large families (Englana, 1993; Paydarfar, 1987). Children from these types of families may be considered as sources of wealth and tools of familial production (Caldwell, 1982).

2.2.3 Value of child bearing

It has been emphasized that within Islam, marriage must be fruitful. This means that family should produce children and couple particularly women must be fecund (Seklani, 1973). The capability of being pregnant and delivering a child overrides any other desires of women, since by child bearing even older women may demonstrate that they are still young, and able, in comparison with younger generation (for example daughter-in-laws) (Darabi, 1976). The brides's status in her husband's household and kinship network remains unstable and inferior until she delivers a baby (Faour, 1989).

Muslim women continue to be reproductively active at a much later age (40 and over) than women in western societies (Nagi, 1984). For the purpose of having children, polygamy is permitted particularly when the first wife fails to produce a child (Seklani, 1973; Kirk, 1973; Fahs Beck, 1973). The legality of polygyny has traditionally been based on the Quranic sura (verse) stating that it is permissible to take up four wives (Obermeyer, 1994). In fact, in the Quran, polygamy is limited by the obligation to treat all wives equally, and it has actually been the privilege of the few who could afford to support more than one wife. The level of polygyny has been found to be one per cent in Damascus and two per cent in Cairo with most estimates putting it at no more than 10 per cent. It is practised by a comparatively small minority of Arab Muslim men no more than five per cent in most instances. In any case, studies of polygamous marriages reveal that they are not more fertile than monogamous (Obermeyer, 1992).

It can be concluded, that despite the legality of polygamy, it is rarely practised (O'Connor, 1995) due to the well known Islamic principle of "equal treatment of wives", which could be emotionally difficult, if not impossible, as well as the socio-economic requirements and dominant cultural value of monogamy particularly in metropolitan areas. Moreover, choosing the second wife, at least in Iran, needs the agreement of the first wife.

According to Islamic resources, the prophet has stated "marry and reproduce so that I may be proud of you before God" (Beck, 1980; Faour, 1989). And when a mother asked the prophet to pray for her child, he prayed that God would bless him with increased wealth and children (El Sharabassi, 1973). The adequacy or inadequacy of a woman's role is judged by how many children she bears and particularly, how many sons. Large families are preferred and childlessness is considered adequate ground for divorce, while the birth of a son will almost guarantee against it. In this respect, the number of family members was known as a sign of divine fortune and power (Fahs Beck, 1973, Seklani, 1973).

2.2.4 Population characteristics

Many Islamic countries exhibit similar demographic characteristics to other developing countries (Findlay and Findlay, 1987). Despite the fact that there is a wide range in fertility of young Muslim women, from a very high rate in Bangladesh to a low rate in Egypt (Nagi and Stockwell, 1982), in the 1980s Total Fertility Rates (TFR) for all Muslim countries remained noticeably higher than the world average of 3.8, and much higher than the 4.4 average for the less developed countries. Without exception, the 1980s Crude Birth Rates (CBRs) for the Muslim countries were much higher than for the non-Muslim countries in the same regions of the world, and also well above the regional average (Nagi, 1984). Nine out of the 10 countries in the world with total

fertility rates over 7.0 are Islamic countries and all but three Islamic countries have total fertility rates which are higher than the average for the less developed countries (Findlay and Findlay, 1987). On the whole, all Muslim countries exhibit a very high fertility, despite pronounced diversities in ethnic background, economic infrastructure, and political ideology (Youssef, 1980).

The higher fertility rates of Muslim populations have been recorded by several studies from different parts of the world. For example in Europe and in the former Soviet Union (now Central Asia Republics), Muslims have shown a consistently higher fertility than Christians and other non-Muslim groups. In India and in Malaysia, the similar characteristics for Muslims in comparison with other religious groups have been observed (Beck, 1980; Kirk, 1973). Further, demographic studies in Australia have also revealed that the highest level of nuptial fertility belongs to migrants from the Middle East mainly Lebanon and Turkey (Yusuf, 1986; Yusuf et al. 1995).

In a number of Muslim countries the proportion of the population aged less than 15 was between 40 and 45 per cent in 1983. This is a sign of high rates of dependency which is considered an impediment for socio-economic development (Findlay and Findlay, 1987).

Islamic countries have continued to favor the early marriage of women, large families and high fertility, and consequently are characterized by rates of natural increase above those of their Third World counterparts.

The possibility of a specific pro-natalist force in Muslim cultures is suggested by a comparison of the natality statistics of Muslim populations with those of their non-Muslim neighbors. Although Islam has been introduced as the most pro-natalist religion of the world (Nagi, 1984), it should not be regarded as an exclusive influence on their demographic development. Islam does contribute to the creating of a distinctive demographic environment (Findlay and

Findlay, 1987), but its strong pro-natalist orientation stems less from direct injunctions to procreate than from the support of conditions which make for high fertility (Fagley, 1973).

2.2.5 Family planning and Islam (views on family planning)

The relationship between Islam as source encouraging high fertility and family planning and as the main measure of fertility control is controversial. The lack of doctrinal injunctions against most methods of birth control may prove to be a double-edged sword (Beck, 1980). Whereas some factions of Islam do not accept family planning and birth control methods (El Sharabassi, 1973), there are other factions which believe that Islam has never been dogmatic in such matters.

The first view objects to birth control on the grounds that the prophet urged his people to increase their numbers. Moreover, the advocates of this view argue that God provides for every individual on earth, therefore, it is unnecessary to worry about birth control. The latter assumes that the advocates of family planning are not greatly impressed by the arguments put forward by rigid interpretation (Ammar, 1973). According to Egypt's Mofty (religious leader), it is permissible for either husband or wife, by mutual consent, to take any measures to prevent semen entering the uterus in order to prevent conception (Fagley, 1973).

There is still another interpretation that asserts that under certain conditions Islam allows people to adopt many means of preventing contraception (Razi, 1973). They have confirmed that sometimes birth control could be regarded as a religious duty: for example when conception is likely to endanger the life of the woman. It has been written in the Quran "do not position yourself in a life threatening situation. God is kind to you" (Khalifa, 1973). These instances point to the flexibility of relationship between Islam and family

planning (Mossavar, 1983). Recent interpretations of Muslim law make it clear that the use of birth control techniques is not forbidden (Findlay and Findlay, 1987), but some religious and national leaders are hostile and the belief persists that control is contrary to Muslim ethics (Fahs Beck, 1973; Nigar Aziz, 1973; Beck, 1980).

However, it has been asserted that family planning as a scientific measure to ensure the happiness of a family and hence cannot be un-Islamic (Zuhrol Haque, 1973). Whatever the views, in reality most Islamic countries advocate population control policies and have conducted nation-wide family planning programs for this purpose. Egypt, Tunisia, Indonesia, and Iran are the examples.

2.2.6 Contraceptive methods and Islam

It has been asserted that empirically Islam has been a more effective barrier to the diffusion of family planning than Catholicism. The monolithic character of Islam in this regard is overlooked because of its enormous territory, its linguistic diversity, its political authoritarianism, and the absence of a central religious hierarchy (Kirk, 1973). It is assumed that the Pro-natalist practices of Muslims make them less likely to favour contraception and cessation of child-bearing. Their pro-natalist behaviour generally ties them to the use of an inefficient method of birth control or promotion of large families in other ways. Women of these faiths are, therefore, more likely to have shorter birth intervals (Sakyia and Heaton, 1993; Coal, 1986).

With respect to family planning in particular, the texts do not present a major obstacle. And in reality not only traditional methods of fertility control have been approved by the Islamic doctrine, but also the modern methods of pregnancy prevention have been adopted by several Islamic countries' governments as fundamental instrument of population control policy (Beck,

1980). For example Tunisia has been cited as one of the success stories of family planning with rate of contraceptive use of over 50 per cent (Obermeyer, 1994)

Withdrawal or coitus interruptus or 'Azl' -as expressed in the Islamic teachings-together with 'spacing of child birth', and "rhythm" -safe period- appear to be advised by the prophet and seem to be quite justified according to the spirit of Islam (Zuhrol Haque, 1973; Mossavar, 1983; Darabi, 1976). The Quran has historically been interpreted as justifying coitus interruptus to protect the male's property, to preserve the wife's health, and to allay anxiety over numerous children (Beck, 1980). This method was used during the time of the prophet. He came to know of it, but he did not forbid it. According to some Islamic scholars, the consent of wife for practising this method is necessary (Khalifa, 1973).

Abortion and permanent sterilization are still problematic and sometimes met with strong opposition from religious authorities (Fahs Beck, 1973; Beck, 1980). The permissibility of abortion has been the subject of debate, because while most schools of law agree that abortion is acceptable before "ensoulment" and unacceptable afterward, the question of when this change takes place has been as difficult to resolve as it has in other theological traditions. Islamic schools of law (except Maliki school) generally agree that ensoulment is indicated by quickening, which happens at about the end of the first trimester, and consequently abortions are allowed up until that point (Obermeyer, 1994). However, despite lack of a unanimous view, abortion has been approved for purely health and medical reasons (Faour, 1989), and has been opposed when economic or other non-medical factors operated (Baer, 1973; Population Reports, March-April 1981)

It has been asserted that sterilization poses a greater difficulty, because the finality of the method is seen as interfering with divine will, and therefore, Muslim authorities have not condoned its use (Obermeyer, 1994). Moreover, the legal status of voluntary sterilization in Muslim countries is unclear because most religious authorities interpret Islamic law as forbidding sterilization. However, in recent years sterilization as one of the most effective methods of birth control has been legalized and now it is available and is practised for both men and women in a number of Islamic countries such as Tunisia, Indonesia, and Iran (population reports, March-April 1981).

2.2.7 Socio-economic environment and fertility

Despite the fact that socio-economic development has been proposed as the most essential and influential factors on fertility trends, findings of studies have revealed that some of developmental factors such as education, occupation and percapita income have not had the expected fertility inhibiting effects in some developing as well as Islamic countries. For example, surveys in Amman, Jordan, and United Arab Republic show that in both countries education did not have a pronounced effect on fertility (Nagi and Stockwell, 1982; Tsui and Bogue, 1978; Ajami, 1976; Mamdani et al., 1993).

However, it has been suggested that cultural factors such as the “status of women” might be responsible for the higher rates of fertility among Islamic nations. The following section will explore and discuss about this issue.

Status of Women and Fertility Behaviour

2.3.1 Introduction

In this section the significant roles and functions of women and their status in health and fertility related studies are discussed. The different approaches towards the concept of women's status as well as its measurement and indicators in general are reviewed. Thereafter, major assumptions about the status of women in Islamic countries, Iran both before and after the Islamic revolution are critically examined. At the end, a summary is presented.

Women and their position in health, fertility and fertility control studies are multifaceted, and essentially significant for a variety of considerations. Given current contraceptive development, women are likely to remain the principal users of contraceptive programs (Zeidenstein, 1988). Furthermore, the absence of a physiological male menopause, determines that the female menopause is the end of reproductive life for a couple (Santow, 1991). Most social systems rely on women to provide unpaid social services as mothers, wives and volunteer health workers (WHO, 1985). The health of women in developing countries is a matter of fundamental to human rights and dignity (Graham and Campell, 1992).

2.3.2 Indicators and measurements

The literature reveals a lack of agreement about the indicators and measurements of women's status (Mason, 1985). Mauldin and Berelson (1978) have discussed the percentage of young women never married in the 20-24 years age group, while Aghajanian (1992) puts forward three indicators (educational attainment, occupation and access to health services) and (Kumar, 1993) points out that the status of women is often measured by using

only one or two indicators such as education or labour force participation (particularly in non-agricultural labour markets). Youssef (1980) suggests that women's status is indicated by five measurable indicators: female literacy rate, the sex differential in literacy rates, the female activity rate in income-earning economic activities, the timing of marriage and the incidence of marriage. Moghadam (1990), states that sex ratio may be considered as an indicator in this regard. She spells out that an adverse sex ratio probably indicates a low status of women, which, within the overall resource constraints, would mean more nutritional deficiencies suffered by women than men. Other studies have suggested different indicators (Ward, 1984).

There is some agreement that the position of women in society is significantly related to the level of fertility (Mauldin and Berelson, 1978). A number of studies have confirmed that women's status has distinctive effects on fertility (Rompaey and Edward, 1994), and that women's place in society must be included in any overall consideration of the demographic situation of a country (WHO, 1993b).

Women's status, as reflected in their legal rights, education, health, employment, position in the household and family decision-making power, affects behavior such as age at marriage, fertility, and infant, child and maternal mortality. These in turn have an impact on the improvement of women's status and their participation in the development process (Caldwell, 1982). The important point is the relationship between women's status on the one hand and fertility levels and fertility control on the other.

It is apparent that women's status is a relative concept and is comparable to that of men in the same society, that of women in different society, that of women within social classes and in different times. Wherever an inequality between the positions of two sexes exists, beneficial to men, a gender

inequality is characterized. The status of women in a society with gender stratification and gender inequality is usually assumed to be subordinate.

Women's dependence upon the good will of their husbands and older family members make them hesitant to practise contraception, and, because their opportunities for self-support in case of divorce and widowhood are limited by labour market restrictions and wage discrimination, they run a great risk of becoming dependent upon their children (Boserup, 1990).

In fact, within a society with a rigid gender system, the only available channel to women for improving their status is through their reproductive ability and particularly bearing sons who are considered more beneficial to the male elders of the family/household organization. There is no motivation to limit the number of children until the family has a certain number of sons (Aghajanian, 1992).

It has been assumed that improving the status of women may make it possible to delay the age of the first birth and consequently to reduce fertility (WHO, 1993b). In line with this, studies have shown that women's social and economic positions are improved most directly by their involvement in paid work (Moghadam, 1990).

Women's participation in the labour force, and their acquisition of high-paying jobs are economic incentives for them to desire smaller families. On the other hand, their participation in the paid labour force is considered a sign of disintegration of traditional family obligations and domination by non-familial economic activities. Within a non-familial economy, women are more likely to enhance their status outside the home than within it (Caldwell, 1982; Youssef, 1980).

Despite the fact that women's status as a relative concept has several dimensions, in recent years, economic aspects have had closer attention prior to them. Accordingly, the concept has been defined in economic terms. For example, Ward (1984) has pointed out that the status of women is primarily determined by women's access (relative to men's) to economic resources. Secondary components of women's status consists of women's access to educational, political, and organizational resources. Regarding the significance of the status of women, (Bernhart, 1993) as (Cain, 1983) has pointed out that reproductive behaviour is an adaptive response to material conditions; and fertility outcomes reflect women's struggle to make the best of their lives given a set of external circumstances completely beyond their control. He introduces the most important factors in modern fertility decline as:

- 1- economic conditions or employment opportunities that conflict with childrearing and;
- 2- women's access to material resources independent of men and children.

2.3.3 Women's status in Islamic countries

The task of assessing the "status of women" as an influential factor in fertility behaviour in Islamic countries, encounters certain difficulties. There are a number of assumptions about both the Islamic countries and about the status of women in these countries. In literature, the concepts of Islamic and Arabic are used interchangeably (Findlay and Findlay, 1987), whereas there are non-Arabic but Muslim countries or minorities as well. Moreover, the socio-economic and cultural environment of Islamic countries are introduced as stationary, unchanged and timeless. Further, no rural-urban or social classes differences are pointed out in this respect. And finally, Islamic countries are assumed to behave similarly under the rules and ideology of Islam. However,

major assumptions and characteristics attributed to the status of women in Muslim countries are as followings.

1)-The first assumption that women's legal status and social positions are worse in Islamic countries than anywhere else is common. Many discussions of women's health and fertility in Islamic countries link adverse outcomes to the oppression of women. The prescribed role of women in Islamic theology and law is often argued to be a major determinant of women's status (Aghajanian; 1992; Obermeyer, 1994).

2)- There is a belief that women in Muslim societies are fundamentally different from men, and this difference is often translated into inferiority, which may strengthen social barriers to women's achievement. Women's reproductive function is used to justify their segregation in public and their isolation to the home, as well as their lack of civil and legal rights (Mossavar, 1983).

3)- Muslim women are fully aware of the need to attain marital position and motherhood to command respect and status in their own kin group and community. Their positions are stabilized by child bearing in general and son birth in particular. In line with this, children, as the outcome of marriage, represent much more than a form of social insurance against the threat of divorce or polygamy, for women derive status from motherhood even when divorced or rejected for a second wife. Offspring guarantee to the woman status and respect that extend far beyond her position in the conjugal home and reaches into the heart of her own family and the community's valuation of her. Therefore, women might continue child bearing activities throughout their reproductive years-whether they are happy in their marriage or not. When Muslim countries report an average of seven live births per married woman and the extension of reproductive behaviour to more advanced ages

beyond thirty-five years, we should appreciate the importance of maternal-related roles (Youssef, 1980; Cain, 1984; Darabi, 1976). In turn, high fertility rates limit women's roles and perpetuate gender inequality. Where the state's policies and rhetoric are actively pro-natalist, and where official and popular discourses stress sexual differences rather than legal equality, an apparatus exists for the production of stratification based on gender. The legal system, educational system, and labour market are all sites of the construction and reproduction of gender inequality and the continuing subordination of women (Moghadam, 1990).

4)- "Expectant wives" is a dominant perception of women themselves. Whereas economic provision is the responsibility of men, women must marry and reproduce to earn status. Only men have the unilateral right of divorce; a woman can work and travel only with the written permission of her male guardian; family honor and good reputation, or the negative consequence of shame, rest most heavily with the behaviour of women (Pakizegy; 1980).

5)- Muslim societies are characterized by numerous and highly effective institutional mechanisms that preclude contact with the opposite sex. Gender segregation is customary, if not legally required. To mention only a few: sex segregation in most public and private schools, rigid sex segregation at work, and formal/informal separation of the sexes in most recreational and often familial activities (Youssef 1980).

Generally speaking, a distinct gender gap is observed among Muslim countries of the Middle East . Clearly in the region as a whole, educational levels of women lag behind those of men, female employment is low, fertility is high, contraceptive use is relatively low and maternal mortality is high in a number of countries. Not only the work, but the recreation of the people in an Islamic society, is organized for the male population (Nigar Aziz, 1973).

6)- It has been spelled out that male family members in Islamic societies receive the full institutional support of the religious and judicial systems. It means that the sanctions invoked against women can be very strong, particularly when the principle of legitimacy is couched in terms of family honour.

Wives are secluded and related to home care and children. This division of labour is supported by the age gap (typically 8-10 years) and the educational disparities between husband and wife. The health implications of gender-based discrimination could be high rates of maternal mortality, lack of appropriate knowledge about health, when pregnant and therefore, greater chances of complicated pregnancy and delivery (Women's health and development resource centre, 1994).

7)- With regard to these assumptions and other attributed characteristics, it is then concluded that by twentieth-century standards, the religio-legal sanctioning of polygamy; the husband's unilateral power in divorce, in custody over his children, and in enforcing the return of a rebellious wife; unequal female inheritance; and unequal weight to a woman's testimony can hardly be viewed as bases of equal position of married women's. Although not all Muslim take advantage of these privileges, their mere legal endorsement may function as a constant source of anxiety to many married women (Youssef, 1980).

However, the low status of women and its impact on fertility trend are often attributed to the prevalence of Islamic law and norms in the Islamic societies. These attributes are not relevant to Islam and Islamic ideology for several reasons (Obermeyer, 1992; Mogahdam, 1990).

In the first instance, the view of women as wives and mothers is present in other religions. For example the orthodox Jewish law of personal status bears many similarities to the fundamentals of Islam law, especially with respect to

marriage and divorce. It has been stated that all three monotheistic religions include inegalitarian elements that reflect the temporal context of patriarchy in which the religious emerged (Obermeyer, 1992).

Secondly, the demographic patterns (high fertility) are not unique to Muslim countries. Similar high fertility rates are found in sub-Saharan African countries today and were common in western countries at earlier stages of their development and demographic transition (Caldwell, 1976).

The adherence to Islamic principles and the applications of Islamic legal codes varies throughout the Muslim world. For example, Tunisia and Turkey are considered formally secular states. Moreover, women's legal and social positions are quite variable in the Islamic societies. For example, gender segregation is the norm and the law in Saudi Arabia, and not so in Syria.

Gender relations in Muslim societies are determined and affected by such factors as level of economic development, the extent of industrialization and urbanization, and integration into the world system (UN, 1987; Ward, 1984). Moreover, sex ranking is not specific for Islamic countries. It is a universal problem. Some countries place more emphasis on ranking the sexes than others, but no society ignores it. And finally, regarding religion as the only dominant factor in explanation of women's status, seems methodologically inadequate, as it exaggerates religion's influence and disregards/overlooks other factors (Mogahdam, 1990).

2.3.4 Women status in Iran

The legal and social positions of women in Iran have changed dramatically through time. In twentieth-century Iran, from the reign of the shahs to the post-revolutionary era, changing visions of the social order have been reflected in conflicting views of women's roles supported by different

regimes. The links between states goals, gender issues, and reproduction are dramatically illustrated in the remarkable reversals of policy that took place during these periods.

Early twenty century, the Reza Khan had attempted to redefine the role of women and initiate modernizing reforms. In the 1920s, Reza Khan enacted laws to raise the minimum age of marriage to 14 years for girls, passed a compulsory education act, and tried to force women to abandon the veil. However, these policies were ignored or resisted by the majority of the population, and there was not much change in reproductive patterns (Obermeyer, 1994).

Forty years later, another attempt at changing women's status was made by Mohammad Reza Shah, with the Iranian Family Protection Act. The aim was to reform the family code by limiting the practice of polygyny (Pakizegi, 1980), extending to women the right to apply for divorce, and entitling them to child support and custody rights in the event of a divorce. Amendments to the code were ratified in 1975 and 1976, raising the minimum age at marriage to 18 and liberalizing abortion laws (Momeni, 1981). Socio-economic changes in Iran during this period (economic growth, industrialization, urbanization, and the increase in education) supported the onset of fertility decline. In addition, the family planning program implemented during this period was associated with some success in increasing the use of contraceptives (Lieberman, 1979). Between 1966 and 1976, the total fertility rate declined from 7.7 to 6.3 children per woman, the mean age at marriage increased from 18.4 to 19.7 years, and modest rises occurred in education and employment levels for women (Aghajanian, 1991).

Most of the changes, however, occurred in urban centres and among the privileged segments of the population (Moore et al. 1974). The emphasis was

on changing Iranian society to make it conform closely to Western models, and the population policy showed little sensitivity towards local traditions or to the prevalent notions about women, reproduction, and health. For a large part of the population, the Shah's policies were little more than the centralizing efforts of an autocratic ruler, and the religious opposition rejected all his reforms as un-Islamic (Moghadam, 1990).

The strength of religious opposition in Iran was mainly due to religion (Islam) domination over social customs and laws which are intricately interwoven with the *sharia* or Islamic law. In almost all Islamic countries of the Middle East, personal status laws based on *sharia* still regulate marriage and family relations even though all states have introduced secular codes to regulate economic transaction (Obermeyer, 1994; Mirhosseini, 1993). Therefore, any successful change in the legal situation of women was and seems to be in need of religious agreement.

Because of the religious structure of social law and customs in Iran, the attributed characteristics for the status of women in Islamic nations might seem similar to those of Iranian women. Gender discrepancy, the large gap between the legal system and social customs, polygyny and son preference, early marriage and child bearing, sex segregation and the hierarchical structure of family and consequently low and subordinate status of women through all major stages of women's life (birth, adolescents, and marriage) are examples of the attributes (Moghadam, 1990; Pakizegi, 1980) most of which have been explained in previous sections.

In summary, it has been stated that before the Islamic Revolution the Iranian woman was valued and valued herself for her sexual appeal and the services that she rendered to the family. She was also seen, and often saw herself as dependent, irrational, submissive, and in need of protection. Moreover,

pressure for child-bearing, chastity and modesty as important qualities of women, real division between the husbands and wives' roles and obligation, as well as the view that sexual pleasure's importance only for men, have been documented (Pakizegi, 1980; Darabi, 1976).

The gender system and sex segregation as they exist today in Iran, are only partly "new" for many of their features are legacies of the past and inherited from the previous regimes (Mohammadi, 1976). Female physical mobility was not extensive in pre-revolutionary Iran, and there were many legal and customary restrictions on women. A woman could not travel, obtain jobs, or rent apartments without the permission of her father or husband. The beneficiaries of Pahlavi-style modernization were primarily middle and upper-class women, while the majority of women from working-class and peasant households remained illiterate and poor. From this, the 3.2 annual population growth rate resulted. The veil was not enforced, but rather characteristically worn by poor working-class, and traditional/lower middle-class urban women. Most secondary schools were gender-segregated, though universities and workplaces were not. Men could be taught by female instructors, but the matter of "appropriate dress" was always an issue. Thus there are some continuities, and some breaks, in the gender system.(Moghadam, 1990).

2.3.5 Women status in Iran after the Islamic Revolution

The woman who has been portrayed for so long in her traditional or pseudo-modern status was coming out of seclusion and on to the streets, not as a sex symbol, but as a socio-political force (Touba, 1991). In post-revolutionary Iran, women were encouraged to participate in the political processes, paramilitary activities and administrative affairs that were transforming their society. At the same time legislation was enacted to promote women's domestic roles (Ramazani, 1993).

The revolutionary regime's attitude towards women was part of a broad political-cultural project directed against the westernized modern middle class. Therefore, regulations for public appearance were made and sex segregation in work and other public places was implemented (Moghadam, 1988; Touba, 1991). Moreover, strong encouragement was adopted for marriage and having children, in accordance with Islamic ideology regarding the family and procreation. Many young men and women rushed into marriage and soon began their families. Hence, the number of marriages jumped from 184,000 in 1979 to 280,000 in 1980 (Aghajanian, 1991).

As previously mentioned, an important indicator of women's status is urban labour-force participation in general and the type of work and professionalization in particular. It has been said that in the first two years of revolution, policies were enacted that adversely affected women's participation in public sphere. The revolutionary regime passed a number of laws to encourage women to return to home. This resulted in the loss of occupation by women. This process is not historically unprecedented; nor is it unique to Islam (or the Iranian Shie variant). It is basically linked to socio-political structure of the societies (Moghadam, 1988).

Although a decrease in job availability for women after the revolution has been pointed out (Touba, 1991), the available statistical data suggest that the female share of the labour force has not changed since the revolution. In 1976, the total employed urban female population (which includes wage earners and the self-employed) was 460 000. This constituted 11.2 per cent of the total urban employed population. In 1983, this had not really changed: employed women made up 11.1 per cent of the urban employed population. But after the war, without regard to the reasons, the rate of female participation in paid labour market was increased (Moghadam, 1988) which in

itself could be a sign of improvement for the status of women, according to labour force participation criterion.

In general, the available literature about fertility patterns among Middle East and Islamic countries indicates the status of women as an influential factor in high levels of fertility. It has also been understood that under-development usually has operated to lower women's status in developing countries as measured by women's access to economic, educational, political, and organizational resources. The lower status of women, then, has been introduced as one of the most important factors on high fertility (Aghajanian, 1992; Ward, 1984).

Although, it has been asserted that "laws of most countries being made by men generally are severe on the women" (Nyland, 1991), and the structure of economic opportunities generated by the sexual division of labour for women determines women's fertility behaviour (Ward, 1984), in some Islamic countries a resentment against the work participation of women has been expressed by women themselves (Touba, 1991; Youssef, 1980).

Son preference

In this part, the significance of sex preferences, together with indicators and methods of measurement, are explained. The role of children and sons in particular are reviewed from different points of view together with health and social implications of sex preferences. Also sex preferences and their impacts on fertility and fertility control behaviour of parents in developing countries with focussing on Iran are studied.

2.4.1 Introduction; the significance of sex preference

Studies that attempt to identify the determinants of sex preferences are very worthwhile, especially in countries where highly unbalanced preferences seem likely to act as a drag on fertility decline, if and when demographic modernization occurs (Mason, 1985). It is basically important to be familiar with the cultural, social, behavioural and even historical context of a society in which fertility and health transition are to be examined or to be manipulated.

Sex preference is recognized as a consequence of low and economically dependent status of women. Recent studies in developing countries such as Bangladesh, suggest that it is the seclusion of women and hence their inability to be economically productive, along with the breakdown of the extended kin network as a source of economic support for widows, that lies at the root of a very strong preference for male children among women (Mason, 1985; Cain, 1984).

2.4.2 Roles and value of children

A desire for a baby may be fueled by many different motives; they may include identification, the fulfilment of various narcissistic needs such as the

wish to be complete and omnipotent, the desire for fusion and oneness with another, the wish to mirror oneself in the child, fulfilment of lost ideals and opportunities, and attempts to recreate old ties in the new relationship to the child (Brazelton and Cramer, 1990).

From the anthropological point of view, having children affirms one's link with a society and strengthens that network as well. Moreover, procreation and birth demonstrate that one has life inside to give and that one's vital essence or life blood will persist in strengthening one's network. Fecundity's symbolic value reaches outward from the immediate family into the greater social realm of community and the kin network. The person who does not reproduce his or her family circle only serves to work and an infertile individual may be compared to the mule that his or her blood disappears from the society (Sobo, 1993).

Children are considered as a passport to social adulthood, without them, self-esteem and the respect of others cannot be attained. Having children is the simplest way to increase self-esteem and to establish adulthood. Childbearing provides a person with a chance to demonstrate responsibility and social commitment and so to achieve social adulthood. Children are valued for other reasons as well. For one thing, they bring joy: they "lively up the place" and, in addition to serving as a source of hope for future socioeconomic "uplift" in the lives of "down-pressed" and impoverished people, children provide extra pairs of hands for work (Sobo, 1993; Good, 1980).

Although children of both sexes work for family at young ages, in some developing countries the division of labour is such that boys are far more productive than girls (Cain, 1988). Economically, son preference is considered as the consequence of such a situation.

In literature son preference is mainly linked to patriarchal structure of developing countries as well as gender inequality which exists in such countries (Cain, 1984; Moghadam, 1988). This is a usual assumption in the demographic literature that various aspects of gender inequality influence the perceived net value of sons and daughters and hence determine parental fertility behaviour and affect their preferences for children of each sex (Mason, 1985).

Son preference in many developing and less developed countries exists and persists due to economic, social, cultural and religious purposes. One important economic factor stems from the higher labour-force participation rates for males particularly in countries which women are not economically active in labour market (for example, Middle Eastern countries). Working children contribute directly to family income and for this reason, they may be less costly to rear. It has been pointed out that families with an unusually high proportion of sons have higher incomes and thus do not feel the economic pressures of large families as those families with many daughters (Keeley, 1976; Cain, 1988). In addition, a number of studies have emphasized the economic role of sons in societies where there exists a substantial pension motive for having children. These studies have introduced sons as an important source of security for the old age, for the widowhood and indeed for the family assets (Niraula, 1993; Mc Nicoll, 1980). Moreover, societies may place great pressures to have a son to carry on the name of the family or to inherit the family's business and wealth (Aly and Shields, 1991; Park and Cho, 1995).

Religion may also be another factor influential in son preference. For example, a study in the United States has revealed that son preference among Catholics is higher than in the general population of this country. Also, in India, where

the population is largely Hindu, sons are considered indispensable (Keeley, 1976).

Findings reveal that influence of son preference on fertility and fertility control (contraceptive use) behaviour varies widely by socio-economic factors such as rural-urban status and educational attainment. Recent multivariate research supports the suggestion that the influence of son preference is greater in rural areas and among less educated women (Li and Cooney, 1993). But, according to some studies, the intentions for a dead boy replacement were stronger in urban than in rural population. (Sufian and Johnson, 1989). This may reveal the point that there might be a relationship between the structure of family, family size and son preference. However, sex preferences may have little immediate impact on fertility in certain developing countries (Ghana) (Takyi, 1994), whereas in the long run, they are potentially relevant to any country that undergoes demographic modernization (Mason, 1985).

2.4.3 Son preference, fertility and family planning

Sex preference has also been introduced as an influential agent on fertility, family size and fertility control behaviour of parents and as “the status of women”, it is a multidimensional phenomenon with a variety of roles, functions and characteristics which are attributed to it (Keeley, 1976; Niraula, 1993).

Due to sex preference effects on fertility, a central concern of demographers and population planners has been the impact on family size of parental preferences for the sex of their children, especially in patriarchal developing societies in Asia. It has been pointed out that if parents continued to bear children until they reached their desired sex combination of children, or their

desired number of sons, sex preference would be a major barrier to fertility reduction (Park and Cho, 1995; Rahman, 1991).

While daughter preference has been documented for some Caribbean countries (De Silva, 1993), in many Asian societies sons are preferred over daughters. Strong son preferences are generally thought to result in higher fertility. Families with a higher proportion of daughters may have additional birth in order to have some targeted number of sons. Consequently, the proportion of families having another child might be higher for families with many daughters (Aly and Shields, 1991; Park and Cho, 1995).

Studies have revealed that women without a son are less likely to use contraception or undergo abortion (Shain, 1987). Also continuation of contraceptive use, according to some studies, has been affected by son preference and sex composition of families as well. In Matlab, Bangladesh, a strong relationship between family sex composition and contraceptive continuation has been observed (Ross and Frankenberg, 1993). Among four- and five-child families, no women lacking sons were continuing contraceptive use at 60 months, while for women with at least one son, the rates were 46 per cent and 50 per cent, respectively. Researchers calculated that eliminating preference for sons would increase contraceptive use by 10 per cent and continuation rates by 15 per cent. These increase would avert nearly one birth for every two couples (Population Reports, July 1994).

Despite the fact that there are exceptions (Rahman, 1991), it seems that in general, the fertility impact of son preference appears to be closely related to family size norms and to the availability of contraceptive and sex-choice technologies. When large family size is the norm, son preference probably does not matter, as couples keep bearing children anyway, whether they prefer a son or not. When the family size norm is moderate and only

contraceptive methods are available, son preference can play an important role in deciding whether to stop or continue child bearing. In a society with son preference, at the arrival of each baby, couples may “calculate” consciously or unconsciously, the sex distribution of their children and decide whether or not to accept family planning, weighing their need of another son against their desired family size. When the family size norm has become small, by choice or by force (such as in the case of China), son preference distorts the sex ratio of children through the use of sex-preference technology or some other means, such as a failure to report female birth or selective infanticide at the other extreme (Park and Cho, 1995; Population Reports, July 1994; Shain, 1987).

2.4.4 Health and social implications of sex preference

Health implications of the son preferences can be studied in terms of child mortality replacement, female mortality as an index of parental care, female infanticide, failure to report female births and sex-selected abortion. Studies have revealed that attempts at replacement of a dead child in some societies are sex-selective, therefore, replacement for a dead boy in some populations is quicker than that of a girl (Keeley, 1976).

The World Fertility Survey demonstrated that the age range most affected by differences in parental care was 1-4 years of age, presumably because infants of both sexes receive similar nutrition and protective antibodies from their mothers’ milk, while beyond that age children are assuming part of the responsibility for looking after themselves. At this most sensitive age, World Fertility Survey found in the countries it surveyed, excess female mortality in all of North Africa and the Middle East with the exception of Tunisia, all South Asia, all East and South East Asia with the exceptions of Indonesia and Malaysia, and in much of mainland Central America and northern South America, but almost nowhere in Sub-Saharan Africa. These findings were

considered as the consequences of the better position of women compared with that of men in these countries (Caldwell, 1993).

As it is apparent the differential impact of parental behaviour and care upon child survival appear on sex differentials in mortality, which exhibited marked geographical, and hence cultural patterns. The higher female infant mortality, reflects the desirability of and preference for male offspring in patriarchal societies such as those in South East Asia and in the Middle East (Kishor, 1993). High fertility and poor access to health care services during pregnancy and in childbirth have also been recognized as effective factors on female mortality (Moghadam, 1990).

Failure to report female births (Darabi, 1976), as well as female infanticide have been found among a number of developing countries namely in China (population Reports, July 1994). Sex selected abortion as an indicator of son preference has been reported for Korea and India. For instance, only in Bombay in 1990, about 100 per cent of aborted fetuses were female (7999 out of 8000.) However, the process of sex-selected abortion in the long run distorts the sex ratio of the population. If preference is given to male offspring, it would make the sex imbalance worse for young men while alleviating it for older women; if a switch were made favouring female offspring, there would ultimately be a generation of women suffering a mate famine (Davice and Over, 1986; Park and Cho, 1995). Given other circumstances constant, sexual problems and sexually transmitted diseases are predictable as consequences of distorted sex ratio.

2.4.5 Indicators of son preference

Various types of questions have been asked in surveys to measure sex preferences. These questions are mainly grouped in four basic categories :“the sex of next child” category, “desired sex composition” or “over

again”, category which asks the respondents to state their desired sex compositions if life could be lived over again. The 3rd category is named “ordering” category in which respondents are generally asked to rank-order a series of family compositions. In the “projective” category as the last method, respondents are asked to state their ideal family composition for their ideal family size (UN, 1987).

Other indicators such as excess female child mortality, sex of first birth, and contraception have been advised and operationalized in sex preferences studies either separately or in integrated form with one of the above four categories (Li and Cooney, 1993; Aly and Sheilds, 1991; De Silva, 1993). There is still another question relevant to sex preference which seems capable of measuring attitudes of respondents toward sex preference more precisely. Thi question is : “if you were to have only a child and you had the right to choose her/his sex, which sex would you choose for your child”. This question focuses on attitudes on sex preferences and by eliminating volatile socio-economic and cultural factors, appropriately explains the issue.

2.4.6 Son preference, Islam and Iran

It has been stated that Islam provides pronatalist pressure and an ideology which values sons over daughters (Sufian and Johnson, 1989). Also it has been pointed out that the strength of both family and lineage among Muslims depends on the number of its males, since daughters usually join a different family upon marriage. A mother gains status and power through her sons, whom she attaches to herself and who support and protect her. On the whole, a son is recognized as an essential requirement for family life particularly for women (Beck, 1980).

Although these explanations may contribute to understanding the institutional context of high fertility, they are largely based on studies in

South Asia. Given the differences in marriage and residence patterns between that region and the Arab world as major part of Islamic realm, it is not clear to what extent these explanations are applicable to the latter context (Obermeyer, 1992). However, underlying these studies are the effects of Islam on the status of women, son preference and high fertility, which have been explained in the previous section, therefore only some important points about son preference in Iran are explored.

Studies carried out in Iran both before and after the Islamic revolution in 1979 have indicated son preference in Iranian society. Pakizegi (1980) has pointed out and analyzed sex differences in all stages of life in detail for the period of pre-revolutionary Iran, and Sheykhi, (1995) affirms that son preference is still highly prevalent in Iran. He concludes that repeated child bearing is seen to be necessary to ensure that the desired number of sons is born. According to Aghajanian (1992), this is the way that an economically dependent woman inevitably follows in order to gain status and support particularly for old age and widowhood. A study among nomads has revealed that the ideal number of children for them was 6.2 (4.3 sons and 1.9 daughters), which indicates a clear son preference among the nomads (Mohseny, 1976).

Families without sons, or with a high proportion of daughters, generally tend to have more children, while the fertility of families with a high proportion of sons tends to be lower. In fact, psychologically speaking, sex preference is a decisive factor in inducing couples to produce more children, many of whom are of the undesired sex (Sheykhi, 1995). Therefore, it can be concluded that son preference adversely affects contraceptive use.

Occupation and labour force participation

2.5.1 Introduction and importance

These pages explain the importance of labour force participation of women in terms of policy implications and its effects on fertility behaviour of families. The complexity of the issue is proposed and a variety of frequently used factors and variables influential on women's work participation are indicated. In line with this, two major perspectives are discussed and dominant assumption as well as the relationship between types of work and fertility with regard to the perspectives are explained. Finally, the relationship between women's labour force participation and development is reviewed.

Increased labour force participation of women has been proposed repeatedly in both the demographic literature and population policy statements as a means of promoting development and reducing fertility in developing countries. The World Population Plan of Action formulated at Bucharest in 1974 as well as the International Conferences on Population, held at Mexico City in 1984 (Ghazi and Deborah, 1988), and at Cairo in 1994, have emphasized women's active participation in development and fertility decline processes. In addition, the population policies of many developing countries directed to improving the "status of women", which often includes encouraging women's employment (Ward, 1984).

2.5.2 Factors, variables and incentives

Timing of work both before and after marriage, which could affect age of marriage (Komalig, 1992; Moore et al., 1974), groups of norms and beliefs governing child care practices and family life particularly those concentrated

on women as mothers and as workers, parents' desire for schooling and child labour which may increase or decrease the amount of time mother allocate to child care and increase or decrease the costs of children (Reddy, 1986; Moghadam, 1990), familial or non-familial production (Caldwell, 1982), rural or industrial production as well as paid and unpaid work participation (Standing, 1993) of women have been introduced as factors important in the determination of the work-fertility interrelationship. Further, fecund women may attempt to limit their child bearing in order to work away from home. Subfecund women may tend to engage in outside activity because they have fewer home responsibilities. For older women with many children, it may be easier to work when older children can care for the younger ones. And finally, women with large numbers of children may feel economic pressure to work (Aly and Shields, 1991; Keeley, 1976; Day, 1984).

2.5.3 Dominant hypothesis

Two major hypothesis have been developed in this respect. The first hypothesis emphasize the diverse roles, particularly as mother or worker, that women play in daily life. The more incompatible these roles,, the more negative the employment-fertility relationship will become. In other words, if economic and social life are structured such that it is difficult to combine both child rearing and employment, an inverse relationship will emerge between fertility and work . When no such constraints are present, there will be no relationship (UN, 1987).

The second hypothesis focuses mainly on opportunity cost of children and is based on the micro-economic theories of household decision-making. The concept of opportunity costs derives from the economic theory of time allocation, in which the value or cost of time allocated to a particular activity is determined by the value of its best alternative use, which in many case can be

approximated by determining the relevant market wage. According to this hypothesis, as the opportunity cost of children increases due to increased labour market opportunities for women, fertility will decrease (Becker, 1986; and see Chapter three).

These perspectives have been criticized as inadequate explanations for what seems to be a more complex relationship.

1-In addition their applicability to developing countries is uncertain;

2-There is no explanation for a positive relationship between work and fertility;

3- They do not take into account variations in child care practices and standards.

An alternative framework has been proposed based on “household opportunity structure”. According to this framework, a household’s opportunity structure is argued to be the determinant of its child-care standards, fertility and internal division of labour, which in turn, determine the employment-fertility relationship. Mother-versus-child contribution to household income, the importance of individual wage-earning versus joint economic enterprise and the emphasis placed on the formal schooling of children are three important aspects of this perspective (UN, 1987).

2.5.4 Work and types of work

A multitude of empirical studies have been conducted which attempt to document both the direction and the strength of the relationship between women’s work and fertility. These studies not only contribute to the more general understanding of the determinants of fertility in developing countries, but may be useful for policy-makers in understanding the potential

implications of women's increased labour force participation. However, they may have made it difficult to identify the findings that are analytically useful and methodologically sound, since, these studies deal with only a very few variables selected from extremely complex, open, and changing system. Therefore, the direction of causation cannot be established easily and empirically, but can only be assumed (Standing, 1993; Collver, 1968). It has been pointed out that female employment status may change over the entire lifespan, a feature which poses severe problems of interpretation for cross-sectional survey data. Because of this characteristic, except for a few interesting country-specific findings, WFS has failed to establish in a decisive manner an individual-level effect of female employment on fertility (Cleland, 1985).

The dominant assumption in the literature is that fertility is inversely related to women's labour force participation. It can reduce the proportion of women marrying, or postpone the age of marriage and thus shorten the child bearing period. It has been stated that work is, to some extent, an alternative to marriage, since it enables a woman to support herself instead of becoming dependent on a man. Secondly, it can reduce the fertility of married women by providing non-domestic sources of emotional satisfaction and status. Thirdly, employment contributes to a woman's self-confidence, knowledge and power within her own family. This status directly affects fertility reduction by enabling women successfully to resist their spouses' desire for more offspring (Shain, 1987).

Studies have revealed that while some types of work are incompatible with child bearing and child rearing some other types are compatible. Participation in professional or white-collar work may be particularly conducive to diminished fertility, because the higher salaries, prestige, fulfillment and educational requirements involved in such work act as greater incentives to

family size limitation. Women employed in these positions have more to lose, if forced to sacrifice their jobs in order to raise children. She not only loses the wages she would have earned but also may have more difficulty in reentering the labour force later because of lost skills (Standing, 1993). Moreover, the greater demands made by this work on women's time and psychic energy make it more difficult for them to combine career and domestic roles (Shain, 1987).

On the other hand, it has been suggested that the fertility levels of women working in "cottage industries" were similar to those of the "economically inactive" and that only women who worked "away from home" had lower average fertility. It has been pointed out that the opportunity cost of children is lower for women doing agricultural work, in particular for those on family farms where work schedules have been assumed to be flexible and child care can be combined with work rather easily (Keeley, 1976).

It has been proposed that women's participation in the labour force, and their acquisition of high-paying jobs are the economic incentives for them to desire smaller families. In societal level as the familial economy is reversed, women are more likely to enhance their status outside the home than within it (Sakyia and Heton, 1993; Caldwell, 1982). It has been asserted that when women gained more independence and control of resources, as the principal basis of power, that was the driving force behind a fall in the fertility rate (WHO, 1993b).

However, a number of studies particularly in Latin America and in Africa have found positive or no relationship at all between fertility and female labour force participation. In these studies (former ones), working women have been introduced as a group who has higher fertility and who wants more children than economically inactive women, despite the fact that these women in

Africa (Ghana) tend to be among the highest users of contraceptives (Takyi, 1994; Standing, 1993; Ghazi and Deborah, 1988).

2.5.5 Development and work participation of women

To summarize, it can be said that the relationship between fertility and work participation of women is not conclusive. In industrialized countries, a negative relationship is generally observed but the causal mechanism is not well understood. In the developing world, results seem to vary greatly across countries and there appears to be little firm ground for generalization (Ghazi and Deborah, 1988). It has been suggested that a negative association between women's work participation and fertility does not indicate that the employment of women depresses the fertility of a population, rather a high rate of work participation and a low birth rate could well be the result of a common antecedent variable, such as economic development and industrial structure which are accompanied by a decline in the agricultural labour force and a shift to industrial labour force (Collver, 1968; Bridesall, 1977; Caldwell, 1982; Coal, 1986).

Some studies have focused on husbands' work and its relationship with the fertility behaviour of family. A number of these studies have found positive relationships between husbands' work status and the number of children ever born, as well as the number of children desired, while, other studies failed to indicate such a relationship (Ajami, 1976).

The explanations presented above, indicate the complexity of the relationship between labour force participation and fertility on one hand (Podhista et al., 1990), and retain room for further studies on the other. However, labour force participation of women, particularly types of their employment, is to a large extent, a function of their educational attainment. A world wide fertility survey (UN 1987) has shown that in developing countries the most educated

and the least educated women were most likely to work, whereas women in middle educational categories were least likely. This issue is discussed in the following pages under the heading “education”.

Education, fertility and family planning

The following pages consider the education of women and the relationship with fertility behaviour. The socio-economic and cultural-attitudinal aspects of education and their effects on fertility and fertility control are discussed. The empirical findings of studies and researches relevant to education and fertility, particularly in developing countries, are reviewed and summarised.

2.6.1 Introduction: The importance of education

Education has been recognized as a factor which influences all demographic components, particularly women's status, fertility and fertility control behaviour (Mukerji, 1988; Mason, 1985). In conjunction with fertility, two major aspects of education have been introduced as more determinant than the others; formal massive education and female education. It has been asserted that the important engine of demographic change seems to be formal schooling rather than the widespread attainment of literacy without mass schooling, as occurred in the West prior to the mid-nineteenth century. Furthermore, demographic change is unlikely if the movement toward mass schooling is largely confined to males, as has been the case in parts of Middle East (Caldwell, 1982).

Female education attainment has received a great deal of attention in fertility research, due to the relatively strong evidence of its importance and due to the feasibility of affecting education through government policy and action (Ghazi and Deborah, 1988). It affects women's fertility goals and behaviour in almost all features of their life.

2.6.2 Multidimensional effects of education on fertility:

2.6.2.1 Social effects

Socially, the functions of education promote later marriage which, in turn, usually decreases the number of children a woman bears (by shortening fertility span)(Cleland, 1985). It is argued that better educated women are more willing to engage in innovative social behaviour than lesser educated women, and as well, in many "Third World Countries", the use of contraception remains innovative. Better educated women tend to have more knowledge of contraceptive methods, or how to acquire them, than do lesser educated women because of their literacy, and their greater familiarity with modern institutions. There is good evidence that, for whatever reason, women's education promotes the use of contraception in most developing countries (Mason, 1985, Shain, 1987).

Moreover, education creates aspiration for upward social mobility and the accumulation of wealth. Where social mobility is related to educational achievement, individuals are encouraged to improve themselves by this route. At the same time, they may seek fewer children to increase their material consumption, to improve their children's opportunities, and to further invest in both themselves and their children (UN, 1987). In addition, education provides women with power and autonomy, and leads to effective participation in the process of decision-making and perhaps to a shift in the power relationship within the marriage-to-come, if the husband's education is more than his wife's (Chowdhury, 1992).

Child survival mortality, as well as health transition programs, are strongly affected by educational attainment of parents, particularly by that of mothers. It has been well understood that the chief stimulus to health transition

programs has undoubtedly been the demonstration of major differentials in the survival of children by the education of their mothers. A study has shown that the strongest correlation with health success to be the educational level of women of maternal age, closely followed by the practice of family planning and the education of men, and more distantly, by the density of doctors and nutritional levels, while there was weak correlation with per capita income (Caldwell, 1993). In some countries such as Nigeria, studies have revealed that the single most important determinant of a child's chance of survival is the mother's level of education (Caldwell, 1982; Cleland, 1985).

2.6.2.2 Economical effects

Economically, it has been argued that the primary determinant of the timing of the onset of the fertility transition is the effect of mass education on the family economy. It has been pointed out that education provides women with the requisite skills needed to enter the labour force. This is recognized as indirect influence of education on fertility (UN, 1987). It directly, reduces the child's potential for work inside and outside the home. The compulsory education of children is a cost factor, which tends to lower fertility. Time spent in education reduces the opportunity for a child to work and contribute to the family income on the one hand and increases the cost of children (far beyond the fees) on the other. Higher voluntary educational expenses have usually had an association with a decrease in the number of children (Keeley, 1976; Caldwell, 1982; Shain, 1987). Even if women do not work, higher educational levels open up new nontraditional activities, which challenge the exclusive use of women's time for childrearing.

Education also increases earning ability. In other word, market-productivity, which refers to the fact that educated people command higher wages and thus higher potential income. Furthermore, higher wages mean that individuals

value their time more highly in other activities. Consequently, it increases the opportunity cost of women's time and enhances the likelihood of their employment outside the home. In the absence of schooling, all members of the family are clearly producers. Therefore, it is concluded that schooling creates economic dependency, both within the family and within the society (Keeley, 1976; UN, 1987).

2.6.2.3 Cultural effects

Culturally, education affects and may directly change attitudes, values and beliefs towards a small family norm and towards a style of child-rearing that is relatively costly to the parents in time and money (Shain, 1987). Higher "child quality" or "quality-versus-quantity" which is discussed in New Home Economics Theories, meets this issue (see Chapter three). It has been stated that the potential for education to diffuse non-traditional values does not end in the classroom, since the educated are likely to continue to be exposed to modern or Western ideas through newspapers and books, and through ownership of radios and television sets, which they typically acquire earlier than couples of lower socio-economic status (UN, 1987).

Freedman's thesis suggests that with increased education and literacy, the population becomes involved with the ideas and institutions of a larger modern culture. If the individual is, or believes s/he is, part of a larger non-familial system, he begins to find rewards in social relationships for which large numbers of children may be irrelevant (Darabi, 1976). In line with this, Caldwell (1982), points out that schooling speeds up cultural change and creates new cultures. In the contemporary developing world, the school serves as a major instrument for propagating the values, not of the local middle class, but of the Western middle class.

Education influences women's self-images and increases their ambitions for themselves and their children. The educated mother is more successful in investing in the quality of her children, for example, in health and education. (Shain, 1987; Keeley, 1976). Moreover, it has been pointed out that a higher level of education is associated with more modern attitudes towards fertility (Muthal, 1992).

2.6.3 Education and fertility in empirical findings

The results of empirical researches have fairly consistently indicated a negative relationship between education level and fertility, but the strength and form of the relationship vary widely. In a number of studies, the evidence suggests that the relationship may not be linear, because women with only a few years of education may have higher fertility than women with no education, while fertility declines with higher levels of education (Ghazi and Deborah, 1988). A study about fertility and contraceptive use in poor urban areas of developing countries, has revealed that in very low income populations, small improvements in female education are often associated with a rise, rather than a fall in fertility (Mamdani, et al., 1993). Also according to another study conducted in the central part of Iran, the reproductive goals of university-educated women in Isfahan (Iran) were no different from those of working-class people, although the former seemed to be more successful in child-spacing. (Darabi, 1976). Moreover, in many places, women with primary-level schooling have more children than either those with no education or those who have gone to secondary schools or universities (Ross, 1982). These phenomena, non-linear patterns of child bearing in relation to education, have often been attributed to a reduction of breast feeding and less adherence to the traditional practice of post-partum abstinence, as well as better living conditions among groups of women with some education (Ghazi and Deborah, 1988; Ross, 1982).

2.6.4 Education, fertility and fertility control

The hypothesis that as a woman's education increases she has fewer children, has been confirmed in numerous studies (Cleland, 1985). Freedman has stated that the only index examined whose movement seems almost universally to parallel that of fertility measures, is illiteracy in each case fertility and illiteracy decline together (Darabi, 1976). Warren et al., (1992), in their study in Swaziland found that there was a strong negative association between fertility and educational level, the value was 5.5 for women with no formal education and 3,1 for those who had completed high school or further education. Moreover, the World Fertility Survey has revealed that on average, when not controlling for other factors, women with seven or more years of schooling gave birth to three fewer children than did women with no schooling (Ghazi and Deborah, 1988). Other studies revealed that this negative association also holds when some of the other relevant variables are held constant (Keeley, 1976).

Caldwell argues that with increased formal education, the “flow of wealth” from children to parents is reversed as the younger cohorts are more likely to spend much of their productive time in school and also accept longer birth intervals. Consequently, fertility declines. This view links education to a broader context of socio-economic circumstances, social classes and regions of residence where their effects on fertility vary according to socio-cultural settings. For example, while fertility behaviour differs significantly between the regions of the residence in Nigeria, in the United Arab Republic, a study reveals the absence of any significant differences in fertility by socio-economic factors including education (Englama, 1993; Ajami, 1976).

However, as in the case of fertility, education poses a determinant effect on fertility control and contraceptive use. It has been asserted that among socio-

economic variables, female literacy exerts the strongest direct and indirect influence to increase contraceptive prevalence (Sirirangsi, 1994; Cleland, 1985).

2.6.5 Education of male and female

Education may have different effects on the fertility behaviour of the families. Since the raising of children usually is the responsibility of the wife, where men share less in child bearing, male education represents more of a "pure income" effect and is likely to have a positive effect on fertility. Some studies approve of this proposition. For example, in Nigeria, research has revealed that male education is positively associated and more significant than female education (Englama, 1993). However, because men generally spend little time on childrearing, an increase in the value of their time makes children less costly relative to other activities. For the wife, education is expected to represent mainly a "price" effect and thus encourage her to enter the labour force or other activities away from home at the expense of more children (Keeley, 1976).

2.6.6 Summary

In summary the impact of education on fertility behaviour is well documented in the case of women. Moreover, an association between schooling and fertility has been widely observed (Aly and Shields, 1991; Keeley, 1976). But it is an uneven and non-linear association and does not occur or obvious in similar pattern. Nor is the causal relation invariably free of ambiguities. In some instances, schooling would appear to affect fertility through its effect on, for example, the extent of one's knowledge of the more effective techniques of birth control, one's levels of aspiration, or the range of behaviour over which one feels capable of exercising some degree of control. In other instances, schooling appears to be more an indicator of the existence of

certain elements of some presumed causal significance to fertility, such as social class and income, the status of women, or feelings of personal independence. In most populations, this association is doubtless of both types simultaneously (Day, 1984).

Age at marriage

In this section, age at marriage is discussed as a significant variable in fertility, fertility studies, and fertility regulation. The consequences of early and late age at marriage, as well as social and health implications of early marriage, are introduced. Age structure, population policy and relationship between age and contraceptive use are discussed. Finally, age at marriage and fertility behaviour in the socio-economic context of societies are reviewed.

2.7.1 Introduction: Age at marriage and its importance

Age at marriage is related to fertility in various ways. It includes certain factors of potential significance to fertility which can come into being only over time such as, changes in physiology, status, values, attitudes and self-concept (Day, 1984; UN, 1987). Age at marriage is frequently used as an explanatory variable in fertility studies, and its effects on population fertility are determined by the population's fertility related characteristics. For example, in a population with a high degree of heterogeneity in age at marriage, it can be an important explanatory factor. In a population with a fairly universal low age at marriage of women and a high proportion marrying, as in Bangladesh for example, age at marriage is unlikely to contribute significantly to individual differences in fertility, but can strongly affect the aggregate or cumulative level of fertility of the society (UN, 1987; Ghazi and Deborah, 1988).

2.7.2 Population with an early age at marriage

Significant negative relationships between age at marriage and cumulative or lifetime fertility have been observed as common research findings. This includes both developing (e.g., Nigeria) as well as developed countries (e.g.,

Australia). According to findings of a study in Australia, the fertility of wives who commenced their current marriage at age 20 was consistently higher than that of those who married at age 21, and lower than that of those who married at age 19. Similarly for each age, fertility in the next higher age was consistently lower, and in the next lower age consistently higher (Day, 1984; Nwakuze, 1992), .

It is assumed that early marriage produces more children for at least three important demographic reasons. If women marry young,

- they are likely to have sexual intercourse frequently throughout their most fecund years;
- they begin having sexual intercourse at an earlier age and thus live through a longer period of exposure to conception; and
- they shorten the interval before the next generation is born and begins child bearing.

Each of these factors means more rapid population growth. Moreover, women who marry young, tend to have less education and fewer opportunities to take a job or roles other than motherhood. Bearing and raising children then becomes the major source of their status in the family and community. This may influence their incentive to limit family size (Ross, 1982).

2.7.3 Health and social implications of early marriage

Early age at marriage may be accompanied by higher maternal and infant mortality, abortion, intellectual deficiencies for children, and other social and health implications such as divorce, poor spacing, and poor contraceptive use

even in a more advanced country, such as the USA (Mosher, 1988; UN, 1987; Pressat, 1985; Ross, 1982).

Teenage pregnancies as a consequence of early marriage are associated with significantly worse prenatal health care and vaccination behaviour, lower birth weight, earlier weaning, and especially during the second year of life, higher infant mortality (LeGrand and Mbacke, 1993). It has also been related to maternal and pregnancy-related mortality which has thus become the dominant issue in women's health just as infant mortality is in child health. This fact is more pronounced in developing countries. For example, whilst the average lifetime risk of dying of maternal causes is estimated to be one in 15 in some developing countries, at the other extreme the risk is one in 10,000 in parts of northern Europe (Graham and Campell, 1992).

A study in Nigeria has revealed that 71 per cent of induced abortions were among primary and secondary school students, of whom only 9.8 per cent were married (Ross and Frankberg, 1993). Intellectual deficiencies of teenage mothers' children also have been documented (see Chapter one). In terms of divorce and its relationship with age at marriage, different studies have demonstrated different results. While in the USA an increased likelihood of divorce has been noted among women marrying at a young age, (particularly during the teens), (Pressat, 1985), an inverse pattern has been observed in Iran (Aghajanian, 1986).

2.7.4 Population with a later age at marriage:

The wife's age at marriage is interesting because of the implication in Malthusian population theory that delayed marriage reduces fertility in a population not practicing effective contraception (Aly and Shields, 1991). It has been asserted that a population with a later age at marriage is likely to have a higher average level of education, to be more urbanized; and to have a

higher level of socio-economic development. Moreover, late marriage in itself may allow women the opportunity to develop career or personal interests which compete with the child bearing role when they do get married. These characteristics are associated with higher contraceptive use; thus, in the aggregate, populations with later ages at marriage may show quite low levels of fertility, not only because of their lost reproductive years but because of deliberate limitation of marital fertility (UN, 1987). The potential effect of delayed marriage in reducing fertility, however, may be limited by universality of marriage which is a common practice in a number of developing and Islamic countries in the Middle East (Nagi, 1984).

2.7.5 Age at marriage and policy:

The strong association between age at marriage and aggregate fertility measures which has been supported by empirical research suggests that age at marriage can be used as a policy tool to influence fertility (Ghazi and Deborah, 1988). Most developing countries, such as China, India and sub-Saharan African countries, have attempted to raise age at marriage since it is considered as assistance in reducing fertility and in achieving other social and economic objectives (Mukerji, 1988; Mauldin and Berelson, 1978).

Age composition of a population determines needs, requirements and affects morbidity and mortality patterns (Zwi, 1993; Mc Namara, 1991; Freedman, 1975). An aged population, as a population with youthful structure, may have certain policy implications. It has been stated that continued low fertility produces a population with relatively few young people and relatively many old people, whatever the mortality condition, which may cause import high fertility migrants in the case of more advanced countries (Coal, 1987), or to implement a very restrictive birth control policy, if it would otherwise be, such as in case of China (Li and Cooney, 1993).

2.7.6 Age and family planning

The age of girls at marriage together with better provision of family planning services and activities, in particular may affect fertility. This pattern is changed since the effects of age differ markedly in different settings. Sometimes only two age groups show substantially lower use of contraception, and sometimes age at marriage itself is known as a factor with minor importance in the acceptance of family planning (WHO, 1993b; Yusuf, 1980; Caldwell and Ware, 1973). It has been stated that the two groups consisted of women near the end of their reproductive life span; obviously for such women, their use of contraceptives is a function of their perceived capability to get pregnant (Yusuf, 1980). On the whole, as World Fertility survey shows, women who marry early are less likely than others to use contraception before the first birth. In contrast women who marry later usually demonstrate a shorter first birth interval than those who marry at younger ages (UN, 1987). Findings of studies among Muslim women also indicate a faster pace of childbirth between marriage and first birth for the recent birth cohorts than for the older cohorts. After the birth of the first child, younger women generally have longer birth intervals than the older women (Youssef, 1980). However, some studies in developing countries have revealed that age at first marriage had no or little effect on spacing births. (Sakyi and Heaton, 1993).

2.7.7 Age at marriage and socio-economic circumstances

Studies in the developing world have revealed that the demand for children is positively related to parents' age levels and inversely related to their education level (Wang, 1989; Mason, 1985). It has also been asserted that there is a fairly strong relationship between level of development and the likelihood of young women delaying their first marriage (UN, 1987). Therefore; it is assumed that early marriage and child bearing are characteristic

of the poor and low social classes over the world rather than the countries. Moreover, it has been advised that the age effects need to be considered in conjunction with other socio-economic factors' effects (Pressat, 1985).

In India, brides as young as 14 are urged by their mother-in-law to produce a first child, well before their own bodies are mature (Nursing Times, 1987). Lazarus (1994), in her study about choice, control, and class in pregnancy and childbirth in the U.S.A, found that poor women who used the public clinics' facilities were 19 years old on average at the birth of their first child. Most had dropped out of school before they became pregnant (Lazarus, 1994). In Australia a study shows that Median age at marriage among Turks and Lebanese migrants was 19 (Yusuf et al, 1995). In the case of pre-revolutionary Iran as a developing country, early teenage marriage (13-15) was recognized as the characteristic of both migrants and natives (Gulick and Gulick, 1976).

The advantages of early marriage for a girl's family in the context of a developing country in the Middle East (Iran) have been indicated, as a safeguard of her chastity, relief from further support expenses, and receipt of money in the form of the "bride-wealth (mehr)"'. Darabi, (1976), suggests the economic advantages of early marriage and states that, there is little else for girls to do except get married as soon as possible or to continue to incur expense for their parents by living at home.

However, today the influence of age at marriage on fertility and population growth is reduced because, on a worldwide basis, deliberate use of methods of birth control have become the dominant factor in determining family size (Ross, 1982).

Other important variables and fertility behaviour

2.8.1 Modernization

Modernization as a determinant of fertility behaviour has been defined in various ways. Broadly it is considered as the outcome of industrialization and economic development which took place in Western European countries after the industrial revolution, and in a measurable way meaning it is determined by ownership and utilization of “modern goods” by households. In the broad meaning it is accompanied with “Urbanization”, “Non-familial production”, “Nuclear family” and “Individualism”. In a limited sense modernization focuses on household’s economic and fertility preferences together with quality viz. a viz. quantity of children. Demographic transition theory is partly the explanation of modernization process and its effect on fertility in a macro-level, while ‘new home economic’ theory explores its influence on fertility behaviour of households.

Findings of studies about modernization and fertility conflict due mainly to different definitions or measurements employed. While some evidence suggests that in some part of the world, particularly in the Arab countries of North Africa and Middle East, natural fertility may actually increase during the earlier stages of modernization.(Nagi, 1984; Darabi, 1976), there are studies which have demonstrated that modernization plays a strong inhibiting role in fertility preference (Tolnay et al., 1980).

A study in Nigeria (Nwakeze, 1992), has documented that families who owned modern household items such as radio and television sets, cars and motorcycles tended to have in general higher probability of births during the

two- and five year recent fertility periods compared with those who did not own those items. Respondents with modern household items also tended to have higher cumulative fertility than those without such household items. On the other hand, according to Tolny et al., (1980) and their analysis of reproductive motivation in Shiraz, Iran, even wife's education loses significance, while ownership of consumer goods gains prominence. Consequently, those households owning more consumer durables report lower recent fertility. This interesting finding partly confirms 'new home economic' theory's approach and suggests that some couples are sacrificing child-bearing in order to purchase items of convenience and luxury (see Chapter three).

There are still studies which have indicated that modernization, ownership of modern goods, has no significant effect on the number of children ever born and has no explanatory power for fertility change (Pribadi, 1994). Findings from World Fertility Survey also do not support that the driving force of fertility decline is a reduction in parental demand for children, induced by modernization (Cleland, 1985).

However, fertility, modernization and cultural factors are interrelated (Vidal and David, 1994). The process of modernization, which is frequently termed westernisation, leads to new perceptions of husband-wife relations in marriage, changes in parent-child interaction, re-evaluation of number of children desired, and an emerging phenomenon of "unwanted children" (Sakyia and Heaton, 1993; Caldwell, 1982). It has been pointed out that modernization affects not only parents' desired family size but also their ability to achieve it. Rising opportunities for women, higher investments in children, reduced value of children's production, changes in institutions and culture, and the preferences of parents all lead to a reduction in desired family size. The difference between the biological maximum and desired family size

widens because of this decreasing desired family size and because of elimination of maternal and child wastage, even actual fertility may rise initially (Keeley, 1976).

2.8.2 Urbanization

Urbanization is the main component of modernization and represents the move from rural areas to more densely populated and industrialized ones. The main assumption underlying an investigation of urbanization and its relationship with fertility and fertility differences is that fertility behaviour is a function of the social structure. Hence, changes in that social structure or changes in the distribution of individuals within that structure are the principal causes of changes in fertility. Urbanization is one of these structural shifts (UN, 1987). The process and implications of urbanization are broad. It certainly is not just numbers of people living or residing in places labeled urban that is important for fertility behaviour; rather, it is the process of transforming types of social organizations and individuals' psychological characteristics (Khalifa, 1972; Keeley, 1976). Therefore, it is considered as a process of development and social change as well as the alteration of preferences, expectations and attitudes in individual level.

Urbanization is accompanied not only by fewer productive opportunities for children but also by sanctions against child labour and pressure for compulsory and massive education. On the other hand, urban modern work involves a more rigid schedule of time away from home and is associated with the breakup of the joint family, which formerly provided child care. Exposure to nontraditional ideas as development proceeds can reduce fatalism and encourage new opportunities not associated with children. The proliferation of consumer goods and the increasing possibility of social mobility induce parents to shift away from children to raise their own standard of living. The

rising status of women gives them more voice in societies where women were previously subservient to the wishes of their husbands. Patterns of marriage and family that encourage large families, such as early permanent marriage, joint families, and polygamy, are succeeded by nuclear families, and perhaps, a greater prevalence of impermanent consensual unions. Inheritance patterns such as primogeniture or subdivision among all children also change during development and affect desired family size (Nagi, 1984).

2.8.3 Income

Economic factors such as income influence parents' child-bearing decision making, (Wang, 1989). Income is of particular importance since it is recognized as the crystallized variable which determines and indicates socio-economic status of families. At the same time it is too difficult to be measured accurately since it is considered very personal and most of the time as a matter of confidentiality. Attempts have been made in order to determine indices for the level of income as well as its effects on fertility behaviour of families. Modernization, in terms of, modern goods consumption, could partly be considered as the level of families income and their socio-economic status as well as their preferences.

However, the relationship between level of income and fertility is complex. While it has been stated that "the higher the income of a family, the more modern is its attitudes towards fertility" (Muthal, 1992), occasionally a strong positive association between fertility and income has been reported, (Tolnay et al., 1980). Some studies have revealed that a similar association exists between levels of fertility and households' income among the poor in rural Bangladesh and South East Asia (Cain, 1988). Yet there are others who have found no significant relationship between parents' income level and their demand for children (Wang, 1989) (Tolnay et al., 1980).

The positive association between fertility and per capita income sometimes is limited for certain age-groups and sometimes is considered as an indicator of the early stages of development which influences fertility positively (Keeley, 1976). In some cases, parallel to economic growth and improvement in living standards in general, parents gradually shift their emphasis from the quantity to the quality of children (Wang, 1989). The “new home economic” theory basically explains the relationship between household economic situation, which is mainly summarized in households’ income level, and fertility.

However, there is some evidence of increasing family planning effectiveness with rising income since a direct correlation between ability to obtain contraceptives, and income has been observed particularly in areas which family planning services were mainly being provided at a cost by private sources. The tendency of parents to the effective control of child bearing and limiting family size, may indicate changes in attitudes of couples for the quality of children and improving the living standards of themselves as well.

Family planning and fertility

The following pages focus on the importance of family planning services as a fertility inhibiting and population growth control instrument. The findings of the studies will be reviewed and the use of contraceptives in different socio-economic and cultural settings will be explained. The definition and classification of contraceptive methods and their perceived side effects are discussed, as well as the health and policy implications of family planning programs.

2.9.1 Introduction: General view and importance

An ongoing debate in the literature of health and demography concerns the relative importance of family planning programming (supply-side factors) and necessary changes in the motivations (or demand) for children, as stimuli for fertility transition in developing societies (Dodoo, 1993). In fact since Malthus, demographic studies have attributed fluctuations in population growth mainly to two factors: positive and preventive checks. In recent years, positive checks such as famine or war have been less emphasized, in contrast to a greater concentration on preventive checks such as late marriage, celibacy and fewer children per family (Zhou, 1993).

It has been asserted that the future course of world fertility may be determined in large part by the size, quality and spread of the family planning campaign. (Ross, 1982). However, the findings of empirical studies are conflicting. While the results of a number of studies suggest that organized family planning efforts have been a major contributing factor in the fertility decline in the developing world (Mukerji, 1988; Nagi, 1984; Ward, 1984; Tsui, and Bogue, 1978), there is evidence that in some countries such as India, Bangladesh and Pakistan organized programs appear to have had relatively little impact on

fertility regulation (Freedman, 1986; Ajami, 1976). It is also possible that contraceptive use increases without any effect on family size as couples become aware of the reliability of modern contraception, they may use it simply to space children in a better way without changing the total number of children they desire (Keeley, 1976).

2.9.2 Family planning, socio-economic and cultural context

The influence of family planning effort on fertility, has occasionally been reported net of investment, dependency, and other specified variables (Ward, 1984). But most of the time its influence is shaped by socio-economic and cultural circumstances. For example it has been pointed out that family planning is more important when there is a demand for small family size and low level of fertility which is accompanied by awarding children higher priority within the family (Caldwell, 1993; Mc Namara, 1991). Because of such circumstances, it has been suggested that these programs should be implemented as part of a diverse strategy for fertility reduction. As Coal notes (Ward, 1984), the provision of family planning is only one of the three factors necessary to bring about a fertility decline. The other two factors are conscious choices over fertility and a perception that the reduction of fertility is socially and economically advantageous. Sobo (1993), in his study about family planning in rural Jamaica, points out that contraception is practiced when circumstances make it necessary and desirable. For example, girls with “ambition” or the desire for upward social mobility through education may use birth control because schools expel pregnant students.

Women’s use of contraception is influenced by the social context in which they live (Cleland, 1985),. Studies have identified that women who are unable or unwilling to use family planning services may limit themselves to less

effective over-the-counter coitus dependent methods or rhythm methods which may cause unwanted pregnancies (Lethbridge, 1991).

The problem of unwanted child bearing is severe among women living in poverty. On the other hand, the prevention of unwanted births through the provision of family planning services would achieve economic benefits that are far greater than the costs of the programs. Very conservative estimates show that the child care costs avoided by poor families would be at least 19 times higher than the program costs. Therefore, offering free or low-cost family planning services to the poor is worthwhile from a purely economic point of view (Campbell, 1968; Cleland, 1985).

Women may miscalculate their safe period as it is the case in Pakistan (Nigar, 1973), or be unaware of mistimed ovulation when they become pregnant as rationalization for unprotected intercourse. (Lethbridge, 1991). Unwanted pregnancies are considered as the result of a conscious or unconscious fertility and sex preferences. In countries where the value system emphasizes women's fulfillment through motherhood, women have many reasons for wanting to become pregnant. Sometimes a pregnancy is sought to force a marriage, or as a means of strengthening a deteriorating relationship, or as an expression of rebellion against societal values (Toro, 1989; Palmore and Concepcion, 1981).

2.9.3 Methods, definitions, classifications, and perceptions

From Bongaart's point of view any deliberate parity-dependent practice-including abstention and sterilization undertaken to reduce the risk of conception is considered contraception (Bongaarts, 1978). The World Health Organization defines family planning as the use of contraceptive methods, either traditional or modern, to prevent unwanted pregnancy. According to the organization induced abortion is understood to mean a method used to

prevent unwanted births [rather than unwanted pregnancy] in cases of non-use or failure of family planning (Popove, et al., 1993). In short family planning is defined as a conscious effort of couples or individuals to control the number and spacing of births. The term does not mean merely contraception, since it comprises practices aimed both at preventing births at certain times and at inducing them at others (Pressat, 1985; King and Lond, 1966). Contraceptive use as the main component of family planning programs is probably absent in many traditional societies (Cleland, 1985).

Birth control methods have been categorized into two (Traditional and Modern) (The Population Council, 1972a), or five categories: oral contraceptives, barrier methods, intrauterine devices (IUDs), sterilization and natural family planning (Livingston, 1992). There is a more comprehensive classification which includes implants (Norplant) and injectables (DMPA, NET-EN, and DEPO-PROVERA) as more modern contraceptives which were not included in Livingston's classification (WHO, 1993a).

Contraceptive use can be both complex and demanding. There are relatively few techniques and behaviours to prevent pregnancy, and they vary in effectiveness. They also vary in side effects and difficulties associated with their use which must be carefully monitored and studied. Both birth control pill and the IUD may change women menstrual cycles. The diaphragm may cause cystitis; spermicidal agents and condoms may cause vaginitis (Lethbridge, 1991). The other contraceptive methods may cause weight gain and headache (injectables), or sensitivity (condom) (WHO, 1993a). Anthropological studies about family planning and contraceptive use have indicated that there are perceived emotional side effects, bad odour, changes in blood pressure and libido as well as heart distress, and high stress levels attributed to contraceptives (Sobo, 1993; Good, 1980).

However, two major characteristics of contraceptive use have been well documented through different studies. The first is that using contraceptives before giving birth to at least one child makes little sense to mothers. The second is the studies in developing countries such as Thailand, Bangladesh and pre-revolutionary Iran which indicated that women who had reached or exceeded their ideal family size used contraceptives more than women whose families had not yet attained their ideal family size (Sobo, 1993; Palmore and Concepcion, 1981; Beeman and Bhattacharyya, 1978; Ajami, 1976).

2.9.4 Health and policy implications

Family planning also is related to health and population problems in a multifaceted way. According to intergenerational wealth flow theory (Caldwell, 1993) early contraceptive adoption may well indicate that children are already becoming relatively expensive as a result of family resources being moved from the old to the young. The early spread of family planning may show the relative freedom of women in that there is no obsessive need felt to keep them in the household with reproduction as their central role. Once family size declines, there is an added incentive to ensure the survival of children. Infant welfare movements in the West at the turn of the present century frequently cited the national fertility decline as a reason for their need, and individual parents both then and in the contemporary Third World exert themselves to a greater extent with at least some success to reduce the risk of death in small families.

Birth control programs will not achieve their objectives, except in the context of broader social change, whether it be deliberately engineered by governments or arise spontaneously as the by-product of the spread of education (Cleland, 1985). On the other hand, it seems that the objective of meeting individual needs, by enhancing the quality of family planning

services, is consistent with the objective of reducing fertility and therefore reducing the rate of population growth (Jain, 1989).

A review of existing literature and analysis suggests that improvement in the quality of family planning services by enhancing the choice of contraceptive methods available in a country would increase the overall practice of contraception and thus would result in fertility reduction (Jain, 1989). However, criteria have been developed in order to assess the quality of family planning services, contraceptive methods and their effectiveness on fertility prevention. For example, in terms of contraceptive methods it has been pointed out that : 1-It must be reversible, 2- It must have no ill effects on health, 3- It must be constantly active: to be switched off rather than on. 4- It must not impinge on intercourse. 5- It must be under female control. 6- It must be applicable on a population basis. 7- It must be suitable for different societies. 8- It must act before rather than after the fact of pregnancy, and 9- It must be reliable (Popov et al., 1993; Kumar et al., 1989; Ross et al., 1989; Newton, 1987; Mukerji, 1988; Kloppe, 1987; Rodrigues, 1978).

In this respect and for the purpose of provision of a more effective family planning services and population control, incorporating the male factor into the services has been advised. It has been suggested that males participation in the family planning programs particularly in developing countries presents a rich potential for better understanding of the dynamics of reproductive decision making (Dodoo, 1993).

The effectiveness of contraception is measured as the proportion by which the monthly probability of conception (i.e., fecundability) is reduced as the result of contraceptive practice (Bongaarts, 1978).

It has been indicated that nowadays despite financial difficulties and rightist opposition, safe, effective and convenient contraception is what men and

women have come to expect and soon will demand, even in the developing world. Consequently, the dawn of the third millennium will witness a wide variety of highly acceptable methods from which individuals will choose, according to their personal and cultural dictates and to their particular life-cycle needs (Shain, 1987).

Family size

2.10.1 Introduction

Family size is determined at the intersection of two opposite forces; inducive and preventive. While inducive force includes a variety of socio-economic, cultural, and attitudinal factors, preventive force is basically limited to family planning services provided by private or public sectors. It has been stated that the effect of contraception on fertility depends not only on its prevalence but its efficiency and use-effectiveness (UN, 1987). In the previous sections of this chapter several aspects of family size formation were explained as the outcome of these contradicting forces. This part attempts to review family size and its impact on children, couples and their social life.

The number of births per person (or couple) by the end of their productive life is called the completed family size (Pollard et al., 1990). Today in relevant literature ‘parity’ as a technical term is used synonymously with ‘family size’ particularly in the case of desired or intended family size (Pressat, 1985). However, many researchers have investigated how the number of children affects life in different sized families (O’ Hara, and Berman, 1984).

2.10.2 Family size and health implications

It has been stated that family size has had certain consequences for children, family unit, and spouses themselves. There are a variety of infant and child physical and mental health and developmental problems that appear to occur more frequently in larger families than small ones and more to children of higher birth order than low order. The effects associated with family size on the well-being of individuals in a family are varied, but serious: increased illness, including malnutrition, serious enough in younger children to increase

mortality rates; less satisfactory growth and intellectual development; increased illness in the parents, as well as clear-cut economic and emotional stresses. Family size is not the only cause of these effects, but it is clearly implicated as an important element in the interacting network of causal factors (Watson et al., 1979). Moreover, it has been asserted that children from small families are more motivated to achieve, small families enjoy a higher standard of living than large families, and couples with few children living in the household are most likely to be satisfied with their marriages (O' Hara, and Berman, 1984).

Apart from individual level, family size is considered as an influential factor in household level relations and behaviours. It has been pointed out that the pattern of human relationships in a family depends on its size; therefore, families of different size will have different patterns of human relationships (Hindershot, 1969).

Family size as the cornerstone of demographic structure of the family of orientation conditions its norms; the norms are accepted and retained by the children of the family, the extent depending upon their satisfaction with the family and their own need to conform; the norms shape the attitudes of the children toward their own families of procreation; as well as their preferred family size and future fertility behaviour, since children in happy families tend to reproduce the similar family size of families of procreation (Hindershot, 1969; Tashakkory et al., 1987).

2.10.3 Social implications

The fluctuation of family size as the outcome of fertility has essentially been influenced by socio-economic and political circumstances. Until recent times, the need for defence against economies motivated not only parents, but also governments, local and national, to be pronatalist. The social pressure on

parents to maximize family size was bolstered by giving a high status to fathers, and mothers of large families and a low status to the unmarried and infertile, especially women. Under these circumstances, family organization was based on the institution of early and universal marriage for girls with men tending to divorce or abandon infertile and subfecund women (Boserup, 1990) But today having no children has become as much of a viable choice as having one, two or more children. However, the issues of family size constitute the core of population policies of most countries particularly in developing world (Cleland, 1985; O' hara, and Berman, 1984).

2.10.4 Family size and family planning

For most people the only question about having children is not whether to have any, but how many and when to have them. There is a strong belief that when one marries he/she should have children, which is based on widely-held ideas about the importance of having children, so there are clear-cut beliefs about the desirable number and to a lesser extent, the desirable spacing of births within a family (Busfield, and Paddon, 1977).

In all societies, there are families who are not satisfied with their existing family size because of unwanted pregnancies and/or who do not wish more children than they already have or who wish to delay a pregnancy to a later time. The lack of availability of, or access to, effective family planning services could be a major obstacle for those couples who wish to space or limit pregnancy (Watson et al., 1979). Here, the policy implications of family planning services appear because of its well-known inhibiting effects on fertility as socio-economic and demographic factors such as education and age at marriage (Findlay and Findlay, 1987).

Such policies are usually implemented by means of national family planning programs, ordinarily conducted through the public sector, but also frequently

supported by the private sector. Despite advances, though, particularly in Asia and Latin America, the delivery of family planning services has been impeded by socio-economic and cultural obstacles that have faced the health care system in general (Watson et al., 1979). However, efforts have been made in order to limit family size and population growth as an objective which is considered the base of structural development in all aspects of social life, including health services.

CHAPTER THREE

Theoretical Framework:

3.1 Introduction: Complexity of the fertility study

Fertility may be considered as one of the most sophisticated phenomena of human life. The birth performance of a female is influenced not only by physiological factors, but also by social, political, economic, cultural and psychological determinants which interact with each other as well as with the physiological factors. The one certainty is that these numerous factors have been determined or proposed in the literature as having an effect on fertility (Krishnan, 1986; Reddy, 1986; Srinivasan, 1986; Mauldin and Berelson, 1978; Mc Nicoll, 1980).

Physiologically some women are fecund and some infecund. Infecundity, in itself, need not be a problem. However, it has affected family life, relationships between husbands and wives and produced sometimes irreconcilable problems and difficulties for both individuals and societies. These problems can lead to divorce which undoubtedly affects both partners' lives emotionally and socially. In some countries, infertility, or not being able to bear children, is a reason for a woman to be divorced. (Mir hosseiny, 1993; Aghjanian, 1986; Beck, 1980; Seklani, 1973).

The fluctuation of fertility rates in the context of socio-economic factors adds to the complexity of the issue. Most studies have demonstrated that there is a relationship between poverty and fertility, as poor countries are indicated by high rates of fertility (Hugo, 1993). But this relationship is not always direct and sometimes the reverse pattern has been observed. For example, there has been a fertility decline parallel to growing poverty in times of economic depression, particularly after two world wars (Caldwell, 1982), as well as after

the industrial revolution among western societies. Also, among some nations such as Asian Soviet republics, fertility rates have remained high despite their modern macro-structural characteristics (Freedman, 1979). Nowadays, fertility rates have declined among some countries, not as a consequence of socio-economic development achievements, but due to strong population control policy and family planning programs. Indonesia, Thailand and China are examples of such policies (Chikelue, 1992).

The cultural context is recognized as one of the reasons for the persistence of high fertility rates among some nations (Findlay and Findlay, 1987). In some cultures, beliefs systems and religions, populations are encouraged to reproduce more children in order to maintain their dominant power or to achieve perhaps an undeclared goal. Roman Catholicism and Islam are known as pro-natalist religions in this respect (Nagi, 1984). Kinship systems also have influential functions on increase or decrease of fertility rates (Frost, 1993).

Politically, population policies which are planned and implemented in both developed and developing countries, encourage or discourage families to produce more children or control their fertility. For example, Italy under Fascism, the French after World War II, China under Maoism, and Iraq at the present are recognized as advocates of high fertility rates and population growth (Zhou, 1993; Montazer zohoor; 1976; Greenhalgh, et al, 1992). However, China has adopted a more restrictive "one child, policy" in recent times (Li and Cooney, 1993).

Nowadays, psychological factors as proxy determinants of fertility have entered the field of population and fertility behaviour studies and are used frequently by researchers to evaluate or predict the process of related issues. (Ajsen and Fishbein, 1980; Tashakkory, 1987; Risk, 1973; Mukerji, 1988).

The complexity of the subject is doubled if all of these factors are taken into account through the passage of time as the subjects of change and alteration. Perhaps because of this sophistication, some experts in the field of study have acknowledged that " it is widely agreed that we do not have an adequate theory of fertility, if by theory we mean a coherent body of analysis linking a characterization of society and economy, aggregate or local, to individual fertility decisions and outcomes able to withstand scrutiny against the empirical record" (McNicol, 1980; Freedman, 1986; Keeley, 1976; Englama, 1993;).

In order to provide a comprehensive explanation for human fertility, there have been regular attempts by economists, psychologists, demographers, and social scientists to develop theoretical framework and conceptual explanation. In the following pages some of the most important of these theories will be critically reviewed, then an appropriate framework to study fertility and related problems will be introduced.

3.2 Theory of demographic transition.

The industrial revolution was a turning point in human history. It is considered to be the real base of industrial development as well as forging other dramatic changes in the history of social life. In the wake of the industrial revolution came economic development, urbanization and modernization. Although not immediately, these consequences accompanied a reduction in fertility and in mortality rates in the industrialized world and put forward the idea that population growth and fertility rates in the third world could be lowered by a similar industrialization, urbanization and modernization process. The theory of demographic transition is a reflection of this assumption.(Ward, 1984, Caldwell, 1982).

The theory of demographic transition embraces a set of generalizations that describe the historical process by which many societies have moved from a pre - modern regime of high mortality and fertility to a present - day regime characterized by low mortality and fertility (Ghazi and Deborah, 1988).

The basic assumptions of the demographic transition theory seem to be the same as those which had dominated the period of the growth of individualism, rationalism, and freedom in trade, the onset of economic and industrialization development in Europe. Through this theory non-industrialized countries are assumed to have rational economic behaviour to allow them to pursue the way of development that industrialized countries have experienced and left behind (Findlay and Findlay, 1987).

But it should be noted that the contemporary demographic situation of the developing countries, in general, differ substantially from the historical demographic experience of the industrialized countries in at least two fundamental respects:

Firstly, the pre - decline fertility levels in today's developing countries are substantially higher than were those of the pre - transition industrialized world.

Secondly, the reduction in mortality rates that has taken place throughout most of the developing world during the twentieth century has occurred much more rapidly than was the case in industrialized countries in the eighteenth and nineteenth centuries (Ghazi and Deborah, 1988).

After the industrial revolution the relationship between developed (industrialized) and undeveloped countries (non-industrialized) changed dramatically. A relatively horizontal relationship was replaced by a vertical one and the rather isolated circumstances of some remote countries

disappeared. Gradually the world divided into two different categories with different experiences and futures. At the same time because of increasing relationship between countries due to communication and trade developments, a sort of “internationalism” began to grow.

There are certain differences between developing countries and developed countries before the industrial revolution, in terms of fertility and mortality reduction. These differences have emerged some critical points meet the theory’s limitation in explanation of fertility related behaviour. With the presumed effects of industrialization and urbanization on fertility, it has been asked why had fertility fallen steeply between World Wars I & II in almost wholly agricultural Bulgaria while failing to do so during the 1950s in the larger urban areas of Egypt and the Far East (Freedman, 1986, Caldwell, 1982).

In summary, demographic transition theory is conceptualized largely in terms of aggregate level phenomena and variables. The theory has considerable value in terms of generalization of European fertility and mortality (demographic) trends and could readily have been transferred to the third world context to describe their demographic development (Findaley and Findaley, 1987). However, as a predictive and explanatory tool, there are some deficiencies in the theory.

3.3 Theory of wealth flow

In order to obtain a more complete understanding of fertility behaviour and outcomes, theoretical models of fertility must ultimately address the issue of how individual couples determine their family size. These theoretical models are oriented, primarily, towards explaining household differences in fertility. Such models are typically characterized by an underlying assumption of some degree of rationality, in that couples are viewed as making decisions

concerning family size based on a consideration of perceived advantages and disadvantage associated with children. This sort of behavioural framework may be inappropriate in certain situations in which families, women in particular, do not see fertility as an area over which they exercise any choice. On the other hand, one can argue that in many societies, families take economic and other factors into account in the determination of their reproductive behaviour, even in the case of high fertility populations.

Caldwell (1982) in the "Theory of fertility decline" argues that "the fundamental issue in demographic transition is the direction and magnitude of intergenerational wealth flows within families or the net balance of the two flows - one from parents to children and the other from children to parents, over the period from when people become parents until they die. He offers a somewhat different perspective on demographic transition theory and states:

1- Only when the balance has shifted from a regime of net flow of wealth from children to parents to one of net flow from parents to children, is fertility decline economically rational.

2- This shift will not occur unless the social transition to the emotional nucleation of the family has taken place, that is, when the emotional bonds and attendant obligations are stronger between conjugal parents and their offspring than with any other relatives, acquaintances or institutions (Caldwell, 1982). Within the context of the historical experience of European populations, in Caldwell's opinion, families had already undergone this shift before the mortality decline began marking the beginning of the demographic transition.

3- Furthermore, he states that this social transition takes place in today's developing countries as a result of exposure to Western ideas concerning the family through mass education and the mass media.

Therefore, from his perspective, when examining current and expected demographic trends in contemporary developing countries, it is crucial to look not only at levels of socio - economic development and modernization, but also at the extent to which western attitudes have been assimilated at the individual level.

The theory of wealth flow emphasizes the fundamental nature of social and economic relations within the family and how subtle changes in the former can have a profound effect upon the latter. Its relevance to fertility decline is found in the sense that fertility decline is the result of changes in the family's internal economic structure.

The major implication of this analysis is that fertility decline in the third world is not dependent on the spread of industrialization or even other rates of economic development. But fertility decline is more likely to precede industrialization and help bring it about than follow it. It can be concluded that:

- 1- Industrialization is not a necessary condition for fertility decline; and
- 2- Fertility decline starts with the reversal of the direction of intergenerational 'wealth flow' common to all traditional societies in which the flow has been from the younger to the older generation. (Namboodiri, 1986).

Despite the fact that the theory of wealth flow has attempted to take into account the major structural factors' effects on fertility study, such as, balance of male and female influence in fertility, familial or market production system, family structure, women's status, customs and pre and post modern societies' characteristics relevant and influential on fertility, there are a number of shortcomings and ambiguities relative to the theory. For example, 'net wealth flow' is difficult to measure (according to Caldwell himself) and it requires a

great deal of information about pre- industrial societies, considered traditional societies characterized by wealth flow from younger to older generations.

Namboodiri (1986) has stated that "whether the net 'wealth flow' is from younger to older, is an empirical question" and adds that he does not think that "there is enough information to approve that in pre- industrial societies the net transfer is invariably from the younger to the older generation. It has remained economically determinist in two senses (Caldwell, 1982).

Firstly, it explains fertility as declining as soon as net economic lifetime advantages from children are no longer anticipated. Secondly, the analysis predicts that traditional familial production will always be characterized by economic advantage to high fertility and by actual high fertility except in pathological conditions or under pressure from external authorities.(Caldwell, 1982)

Another major proposition of this theory is that, only if the family becomes nucleated will fertility drop. But what could be said about Caldwell's own thesis that nucleation of the family does not guarantee that the intergenerational 'wealth flow' would change direction from younger to the older? (Namboodiri, 1986). Although this theory has been introduced as a model of individual fertility decision - making, it does not make clear whether the focus should be on the familial unit or the society as a whole when intergenerational transfers are considered. This theory also disregards the effects of contraceptive use on fertility decline, whereas many studies consider the organized provision of family planning services as one of the two most important competing propositions (Tsui, and Bogue, 1978; UN, 1987).

Although in the "wealth flow" theory wealth flow between generations is discussed, sex-preferences have not been explained despite its important effects on fertility particularly among traditional families and societies. It

seems that in families and societies with patriarchal characteristics, sex segregation, and son-preferences, wealth flows could follow two opposite directions, one from children (sons) to parents and the other from parents to children at the same time. These two contradictory flows seem to influence high rates of fertility and related behaviour in some developing countries (Cain, 1988). Therefore it seems plausible if children (as the results of fertility), either as an investment for the future or as an expenditure, are regarded by their sex and roles in fertility studies particularly in developing countries.

Wealth flows could also be indicated as a horizontal relationship, between different sexes from the same generation, (husband and wife) and as an influential factor on fertility. Caldwell (1982) himself has stated that in many societies the relation of wives to their husbands is similar to that of children to fathers. Therefore a wealth flow could exist among different sexes of the same generation and affect high rates of fertility. For example it seems plausible that if the direction of wealth flows is from women to men in the third world, as Smith (1989), argues it would be a possible base for polygamy which is known as a base for high rates of fertility, thereafter (Kirk, 1973).

In summary, the theory of wealth flow, emphasis on structural aspects of fertility such as decision making power, familial- non familial production system, and direction of wealth flow from younger to older, or vice versa. At the same time, among all other deficiencies, it occupies an ambiguous situation in determining and explaining fertility in individual and aggregate levels. The theory could be considered as a transition theory in the process of demographic theories development, since it seems that their emphases have been transformed from aggregate level to individual level. The following theory attempts to explain fertility in a more limited, nuclear and Western type family, level.

3.4 The "new home economics models" or "Chicago school micro economic theory"

The "new home economics models" are based on the neo - classical micro - economic analysis of consumption decisions at the household level. Although the models vary tremendously in different aspects, they all derive from a common theoretical foundation. The main elements of this foundation are that households should be considered both as consumers of children and other goods, and also as producers, using purchased market goods and other household resources as inputs, of the consumption items from which they ultimately derive utility. Within this framework, one can analyze the roles of productive factor prices, market prices and income in determining the optimal number of children - family size - in particular. Since raising a child certainly diverts family income that might otherwise be used for purchasing other goods, a "price" of children could be suggested.

In summary, couples deciding about family size face three basic factors:

- 1- Cost of children relative to costs of other goods and services that the household might wish to purchase.
- 2- Couples preferences for children versus other commodities, and,
- 3- The total income of the family unit that is available for all expenditure.

Becker (1986) was one of the first economists to recognize that since children contribute "utility" and since they have a "price", then the fertility decision is in some sense like any other consumer behaviour.

As with other theories, the 'new home economics models' were also the subject of change. Mincer in 1963 put forward the concept of the value of time as a major contribution to the basic theoretical model. Within the context

of fertility determination in particular, it is important to recognize not only the financial costs of raising children, but also the cost of time devoted to child - care, most notably by the mother(Ghazi and Deborah, 1988). The implications of the theory are as follows. The time of mothers, and also of fathers but typically to a much lesser extent, can either be used for producing income or for raising children. An increase in the wife's wage would have two off - setting effects on fertility:

1- First an income effect, presumably positive since the family can now afford more children, and,

2- Second, a negative price effect resulting from the increased value of the wife's time in wage labour.

Empirical findings tend to confirm the hypothesis that the price effect dominates in industrialized countries, resulting in a negative relationship between women's wages and fertility. But in developing countries the results are less clear. Moreover, there are findings which indicate that there is no evidence of a positive relation between income and fertility or indeed a negative association , (Aghjanian, 1979).

A second important refinement of the theory which was formalized by Becker and Lewis is commonly referred to as the quantity - quality trade - off. The underlying concept here is that not only do parents value the number of children they have, they also value the quality of those children, which is normally represented by their educational level. Since quality of children can also be thought of as having a price, in that resources are required to improve quality, parents must decide how to allocate their limited resources between quantity of children and quality of children. Consequently, as income rise, the effect on fertility will depend on whether the demand for numbers of children

increases more rapidly than does the demand for quality of children, or vice versa.

Becker and Barro (1987) state that "the economic approach to fertility has emphasized the effects of parents' income and the cost of raising children". They state that the most important determinants of cost have been:

- 1- Employment opportunities of children,
- 2- The value of parent's time spent on child care,
- 3- Monetary and psychological costs of avoiding births through abstinence and birth - control methods,
- 4- And the interaction between the "quality" and "quantity of children.

This theory has concentrated its attempts on a micro level variable (family income) in an explanation of fertility. This would be considered as an individualistic approach towards a social problem, fertility, and a possible reason of failure to identify the determinants of fertility successfully (Freedman, 1986) particularly in developing countries.

It is also admitted that in many societies at different times there is not a steep economic gradient between different levels of fertility. However, maximum and minimum family size in these societies are determined by personal and social reasons, not economic ones (Caldwell, 1982).

In practice and in terms of empirical tests in developing countries this theory has had some difficulties in explanation of fertility related behaviour. Furthermore the most recent studies have also demonstrated that the new home economic model can not adequately explain either financial practices or fertility in a developing country since it considers the domestic decision-making unit to be a nuclear household with common preference and pooled

resources (Fapohunda, 1988), whereas spousal reproductive goals may not be homogenous and the reproductive decision making unit need not be the household (Leibenstein, 1981). In fact, in most developing countries, the decisions about fertility and child bearing are made under the direct or indirect pressure of socio- cultural institutions outside the household. For example, in Islamic countries, the individual can not, in many respects, disregard the expectations of his/her kinship network and must fulfill his/her obligations towards his/her tribe, and relatives, young and old (Ammar, 1973).

It seems that there are some limitations to this theory in explaining differences in fertility in developing countries. These shortcomings are as followings:

- The theory emphasis as only economic factors in determining fertility and child bearing, which is a mono-dimensional approach towards a multidimensional phenomenon (fertility)
- Western and industrialized countries' circumstances have dominated the theory's basic assumptions.
- There is less consideration about the role of children in families and societies in which western type nuclear family has not yet appeared.
- The static nature of the model is in contrast with the dynamic characteristic of fertility as a volatile phenomenon (Ghazi and Deborah, 1988).

In summary, the theory may explain a nuclear family's fertility behaviour, in an advanced and egalitarian society in which individualism and economic values are dominant. But its application in developing countries may be problematic, since family structure and formation are totally different from those of modern societies.

3.5 Development, population and fertility:

Existing literature demonstrates that, population and fertility change studies have mainly been conducted after the industrial revolution and economic development of western societies. These studies have basically been integral parts of development and Malthus' work (1803), "an essay on the principle of population", as the first theory in the field of population growth and fertility is an example in this respect.

Because of the complexity of fertility behaviour the precise mechanisms by which fertility reduction is initiated and proceeds to fairly stable low levels, are not clear. They undoubtedly vary very widely among societies. However, a few of the factors which would lead one to expect fertility to decline with socio-economic development and modernization are as follows:

- 1- The rise in urbanization and the increasing costs of raising children, particularly education costs, associated with an urban life style;
- 2- The declining production value of children with compulsory education, child labour laws and increasing demand for skilled labour;
- 3- Increasing education and age of women at marriage;
- 4- Changing roles of women in society and greater income opportunities for women outside the home;
- 5- A shift in religious and cultural values;
- 6- The shift in dependence from local, largely self-contained institutions (e.g. the extended family system) to larger social and economic units, allowing for greater individual control of fertility decisions, etc.;
- 7- Lower infant and child mortality;

- 8- Increasing returns to the education of children;
- 9- The institutionalization of old-age support systems and insurance schemes; and
- 10- The greater availability of family planning technology, information and services.

It is worth noting that the relationship between development and population growth or high rates of fertility was not always in a linear direction. Sometimes economic growth has operated as a catalyst for fertility decline and in some occasions, economic depression has had the same effect on fertility and population growth (Cain, 1988; Wang, 1989). For example, after the two World War and at the time of the Great Depression of the early 1930s, fertility fell below replacement level in a number of industrialized countries (Ghazi and Deborah, 1988; Caldwell, 1982).

3.6 Towards a theoretical framework

As is well known, theories are arbitrary constructs designed to organize and explain a range of phenomena. They are neither true nor false but, rather, useful or not useful. Their ultimate utility can only be determined through systematic explanation, including careful measurement of the concepts and appropriate modes of analysis (Hermalin, 1986).

However, while the volume of written material on theories and theory building in fertility has increased, it can not be said that much progress has been made during recent years with respect to building a 'binder' for the accumulating data on population change (Namboodiri, 1986).

Theories discussed on fertility have basically emphasised socio-economic development of a country (demographic transition theory), intergenerational

wealth flow within families (wealth flow theory), and economic (rational) decision making about the costs and benefits of children, and their effects on fertility and family size (new home economics theory).

There is a strong belief that the application of these theories in developing countries would be accompanied by some problems (Ward, 1984) since they have essentially emerged from western (capitalist-industrialized) societies and most likely have been influenced by their circumstances and peculiarities. Whereas these theories focus on economic aspects of fertility, surveys in third world nations have shown that economic improvement is not a necessary precondition of falling birth rates and changing fertility patterns. Among these countries, cultural values have been recognized as more important than any other factors in influencing fertility behaviour (Bryant et al., 1993).

The complex nature of human behaviour when it comes to fertility decisions has naturally led to the co-existence of several theories of fertility, none of which has become fully dominant. It seems that no single approach can possibly include all of the important factors affecting fertility. Therefore, a combination of theories or modification of an specific theory is required in order to explain and discuss fertility behaviour of a certain nation or a group. Taking all into account, a modified transition theory, emphasizing institutional setting and stating that components of development tend to depress the fertility pattern will be employed in this study (Kirk, 1971).

Transition theory itself does not state what aspects of development should be measured or how long lag times should be. Furthermore, it does not specify its units of analysis. But, despite all attributed deficiencies, it is still a commonly used framework for analysis of current and expected demographic levels and trends in the contemporary developing world (Sirirangsi, 1994; Pribadi, 1994;

Rompaey and Edward, 1994). It seems that while modified transition theory includes positive aspects of the theory it excludes the attributed deficiencies.

Several reasons might support this view. First of all it is a multidimensional approach and includes a broad range of socio-economic factors which have frequently been confirmed, although in different degrees, as influential factors on fertility.

Next, the theory's approach towards fertility is a practical approach since it meets the factors which can be manipulated by policies of governments.

Third, nowadays westernization is considered as the dominant pattern of development for developing countries. Therefore, a developmental approach towards fertility and population growth seems plausible.

3.7 Hypothesis

Although few studies have been reported about fertility decline before the onset of the Industrial Revolution and development of Europe, population, fertility, and fertility control (contraceptive use) studies have strongly been woven to socio-economic development. On the other hand developmental factors have not had an identical effect on fertility and population movements in different times and locations, rather, their effects in fact have been considered as function of level, stage, and type of development as well as other socio-economic and cultural characteristics of societies (Kirk, 1971). Consequently conflicting results of studies were provided. However, this does not downgrade the importance of the developmental approach towards fertility, and fertility control studies.

Concerning the effects of developmental factors on fertility behaviour as macro-model approach, the importance of cultural values in the third world

countries, and effectiveness of careful analysis of institutional settings, this survey has intended to investigate the following hypothesis.

Developmental factors such as urbanization, high school or higher education of women, types of occupation and female labour force participation, have a direct negative impact on fertility.

Developmental variables have an indirect negative effect on fertility through the intermediate variables.

Intermediate variables such as son- preference and age at first marriage have a direct positive effect on fertility.

Status of women measured by level of education, and type of occupation have direct negative impact on fertility.

CHAPTER FOUR

Methodology

4.1 Introduction.

This chapter explains the methods of sampling, data collection, and data analysis used in this study. Dependent and independent variables, characteristics of the sample and its site, problems with available data, and statistical techniques of analysis are discussed. The process of the questionnaire design, types of question, level of measurement, and hypotheses are introduced. The pilot study, reliability, validity and operational definition are included in this chapter.

4.2 Selected (survey) method

Survey method was selected as an appropriate approach for this study. This method has frequently been used in studies of fertility and fertility control (The Poulation Council, 1972a). This method is characterised by systematic data collection with no intervention by researchers in regard to the subjects.

Surveys may be descriptive or analytic. A descriptive survey aims to describe a situation in a population in relation to certain characteristics. An analytic or explanatory survey attempts to explain the situation and determine possible relationships which exist between dependent and independent variables (Abramson, 1990). This survey is descriptive-analytical and studies fertility behaviour in the study sample across three regions.

4.3 The site of the survey :

The site of survey was Tehran, capital of Iran. This city was selected because of its distinct characteristics, including :

1- It is a metropolitan city. Metropolitan areas, particularly in developing countries are the focus for rural-urban migration because of socio-economic exigencies such as employment, education and health facilities. This is a well established fact in literature and is true of Iran (Khalatbary, 1979) as well as for other developing countries (Caldwell, 1982). Brody (in Sobo, 1993) has stated that most capital city dwellers are country-born migrants, and continue to perceive themselves as rooted in the country and continue to display cultural characteristics which mainly differ from those of the city.

2- The assumption that rural residents normally develop extended families with a large number of children (Englama, 1993; Keeley, 1976; Paydar-far, 1987) is no longer reliable, since, according to United Nations' estimate in 1980-90, 320 million people were added to rural areas, 481 million to urban areas, and in 1990-2000, the corresponding figure is estimated to be 219 million and 662 million respectively (Mc Namara; 1991).. It has been stated that population increase in capital cities is mainly due to natural increase rather than from migration (Lima and Ebrahim, 1990).

3- Tehran, as pointed out by Mirzaie (1994), has had a higher population growth rate (4.2 per cent) than that of rural areas (2.02 per cent). It has been assumed due to continuous migration from rural areas and small towns to metropolitan areas in developing countries, a rural culture engulfs the margins of the metropolitan areas. Consequently, high rates of rural fertility as well as other non-urban characteristics of immigrants are transferred to the poor and marginal areas in major cities.

4- Different socio-cultural background of a number of ethnic groups in a city, provide an heterogeneous and multicultural environment in capital cities and make them, partially, a sample of a country in its geographical boundaries.

Because of the above mentioned characteristics, Tehran was chosen as the location of the study.

4.4 Population sample characteristics

The population sample for this study was taken randomly from Iranian females of child bearing age, between 15- 45 years living in Tehran at the time of survey, having the following characteristics.

- 1- They had married only once and at the time of survey they lived with their husband. Therefore, they were not divorced or widowed.
- 2- They have had at least one child or were pregnant at the time of survey. Therefore, they were fertile.
- 3- They had chosen to attend clinics run by the Ministry of Health in Tehran in order to receive family planning or other services.
- 4- Most likely they came from a low income population or from middle classes, since the services were provided universally and were free of charge.
- 5- They may have been a group of women with high rates of fertility since poor people as well as poor countries are distinguished by high rates of fertility (Hugo, 1993; Zuhrol Haque, 1973).

The sample with these characteristics was selected since they reflect families, constitute the majority of women in their reproductive ages that are considered to account for fertility, pregnancy, and ultimately, population growth. The women excluded from the study (infecund, divorced, widowed and unmarried) constitute a group that legally are prohibited from being pregnant. Therefore, they can not share in the society's fertility and population growth.

However, it seems necessary to note here that other groups of women fulfil their need for family planning services through the private sector services.

4.5 Sample selection and size

The population of a metropolitan and heterogeneous city (in terms of socio-economic background, ethnicity, language and religion) such as Tehran could be classified in different ways. Socio-economic background and cultural diversity have been recognized as more important and effective factors in population distribution in capital cities and metropolitan areas. Therefore, different parts of major cities include people with different backgrounds. In these cities populations with similar characteristics tend to be grouped in similar districts.

Under these circumstances it is useful to divide the total population into subgroups, called strata (Rossi, et al., 1983), for the purposes of making the sample more efficient. Therefore, in order to be precise in terms of sampling, and in considering most of the factors affecting variation among different groups of residents in Tehran, a proportionally stratified sampling method was used in this study and Tehran was divided into three strata (regions) namely South, Centre, and North.

Traditionally, the South represents a population of low social classes, the North includes high social classes and the Centre is predominantly middle class. In each part of Tehran there are various clinics, private, governmental, and charity. The largest number of these clinics are run by the state and the health services which are delivered through these clinics include, mother and child health, obstetrics and gynecology, ophthalmology, ear, nose and throat dental and family planning services. The type of service differs according to the district's requirements. The services which are delivered in these clinics usually are free of charge or extremely inexpensive. The clinics are known as

public sector services and all people can utilize their services. These clinics have been located in all parts of Tehran and it is assumed that their distribution is in accordance with population density and needs in each stratum.

In order to determine a representative sample of the study population in each stratum, initially a sample was drawn randomly from all clinics in each stratum. 10-per cent of the clinics in each stratum were included in the study. At the second stage 30 per cent of attenders utilizing family planning services of each clinic, in the last two weeks before the start of the study, were determined as interviewees. By this approach the proportion of interviews for each clinic was determined. Also an attempt was made to interview attenders and non-attenders of family planning services as a bias prevention strategy. In this respect, 30 % of attenders was determined as the number of non-attenders and was added to the sample size.

The interviewees in each clinic were then assigned into two groups, named Attenders and Non-Attenders of family planning services. Each person was interviewed on one occasion. The first interviewee in each selected clinic was chosen randomly and the rest at an interval required to obtain the necessary number within the period available.

Each clinic was visited at least five times during the study period, September to November 1994. During each visit, one fifth of the questionnaires were administered. This approach was selected since it assisted in data collection across the widest possible group in each clinic, and thus reduced bias associated with sampling on a particular day or week.

The large sample number was selected, because it contributes to the precision of interpretation from data analysis, particularly in studies using several variables. Moreover, it seemed necessary because of the characteristics of the study population such as possible illiteracy, modesty or uncooperativeness.

Based on these assumptions a 15 to 20 per cent information loss was expected. On the whole 477 interviews were estimated to be required among all clinics included in the sample across three regions (strata).

4.6 Variables:

Various classifications of variables have been utilized for fertility studies in the literature. Most researchers have employed the conventional classification of variables, namely dependent and independent, in their studies. But in some studies, other kinds of classification of variables have been suggested. These studies present three-fold variables, including independent, intermediate, and dependent variables. For example, child loss, marital stability, age at marriage, desired family size, and contraception are introduced as intermediate variables. Terms of intervening, control, and proximate variables have been used interchangeably with intermediate variables (Pribadi, 1994; Li, 1993; Komalig, 1992; UN, 1987).

In general, the biological, behavioural, and attitudinal, factors through which socio-economic, cultural, and environmental variables affect fertility are called intermediate fertility variables. The primary characteristic of an intermediate fertility variable is its direct influence on fertility (Bongaarts, 1978). This assumption has a very close similarity with proximal variables proposed in reasoned action theory. According to this theory, (Ajzen and Fishbein, 1980), the influential variables on behaviour are grouped into two sub-groups named proximal and distal. Whereas more emphasis is placed on the importance and direct effects of proximal, psychological or intermediate variables on behaviour, the indirect effects and influential characteristics of distal factors, socio-economic and demographic variables, on fertility behaviour are also stressed (Tashakkori, et al., 1987). However, intermediate variables are

considered as independent variables and some are included in this study. The present study instrument mainly consists of two groups of variables

1- Dependent variables

2- Independent variables.

Knowledge of any contraceptive method, the practice of contraception, attitudes towards ideal family size, abortion, son-preference and perceptions about the effects of contraceptive usage, constitute dependent variables.

Age and age at marriage, duration of marriage, education, number of living children (children ever born) and their sex, place of birth or origin, duration of residency in Tehran, living district in Tehran, occupation, socio-economic status of family (includes spouses occupation and educational attainment, ownership of residency and modernization), status of women (including both occupation and educational attainment of the respondents together), and son-preference are considered as independent variables.

4.7 Methods of data collection and research instrument development:

4.7.1 Problems with official data

In studies of this kind, the traditional sources of information are census, birth registers or other sorts of official records. However, for the purpose of this research, there are at least two areas of concern in the use of material derived from these sources (UN, 1987; The Population Council, 1972a).

1- Official data in the third world is not always reliable (Ward, 1984). This can be aggravated when data is sought on sensitive issues such as fertility behaviour, and about sensitive groups, particularly women, in Muslim societies.

In such a society, questions related to the reproductive system are very personal and private, and people, socially, culturally and religiously are not permitted (unless under some circumstances such as problems related to health or medical areas) to reflect their behaviour openly in this regard. Therefore the available data for this part of society might be only partially provided. There is significant evidence about the miscounting or under-counting of the number of children particularly girls, as well as unreported deaths, accurate age as well as underreported female labour force participation because of a reluctance to indicate low social status, or for other purposes. (UN, 1987; Ward 1984; Darabi, 1976).

Despite the fact that the use of official data is sometimes unavoidable, it is assumed that existing data will not meet and fulfil the study requirements. Moreover, accessibility to data, even unreliable, is not always an easy task and usually requires considerable paper work and energy.

2- Official data are used for retrospective studies and seem to be inappropriate for the purposes of the present study as a prospective study.

4.7.2 Problems with face to face interview with the respondents

According to some studies respondents, mainly female subjects, may have considerable difficulty in talking about themselves and their experience (Devault, 1990). Therefore, this is recognized as a general social problem and is not specific to Iran as a Muslim society. However, these circumstances seem to be more intense in a male dominated and highly sex segregated society, such as the field of the study. To compensate for these differences, a number of men (five) sterilized through vasectomy were chosen for interview as their perceptions about fertility seriously affect fertility decision making among families (Doodoo, 1993; Tolnay et al., 1980).

4.7.3 Methods of data collection

Data collection was done mainly through a random, cross-sectional, self reported survey conducted among the clinics attenders. The main instrument for collecting data was a questionnaire which was developed through a pilot study. Other methods of data collection were also employed supplementary to the main method. For example, a semi-structured interview was prepared with 20 experts and professionals such as midwives and family planning instructors. This interview contributed to the design and content of this document, since in face to face communication with these groups as the participants' confidants and informant groups, attitudes and restrictions could be detected, and concepts in the questions could be explained more explicitly and more valid answers achieved (Beeman, and Bhattacharyya, 1978).

4.7.4 Questionnaire development

The Human Experimentation Ethics Committee of the University of Wollongong issued approval for the study proposal on 23/December/1993 (Appendix E). Based on this agreement a questionnaire was designed and developed. Through the pilot study it was revised according to primary findings, then prepared to be distributed among the study population. The major steps in developing the questionnaire were as follows:

- 1- Initially guidelines were developed to define clearly the concepts employed and to explore some ambiguities related to them and their intended definitions.
- 2- A covering letter explaining the purposes of the questionnaire, emphasizing the need for co-operation and the anonymity of replies was provided in order to assure participants of confidentiality of the study. Rights of respondents in acceptance or refusal of answering to the whole or part of questions were clearly indicated through the letter.

3- Iranian authorities in the Ministry of Health and three Universities of Medical Education in Tehran, fully supported the study and the data collection (Appendix A, B, C, D).

4.7.4.1 The structure of the questionnaire

The questionnaire, as the principal study instrument, consists of questions divided into four categories.

4.7.4.1.1 Demographic variables

This category includes questions about regional distribution as well as age, age at marriage, place and date of birth, duration of marriage and residency in Tehran for spouses, sex and number of existing children, birth and attender/non-attender of contraceptive use.

4.7.4.1.2 Socio-economic variables

Questions in this category, were related to the educational attainment of the respondents as well as that of their husbands, the occupational situation of husband and wife, together with ownership of residential place and the level of modernization as measured by score of modern goods utilization by the respondents.

4.7.4.1.3 Attitudinal variables

The desired number of children by the respondents as well as by “other families” (from the respondents’ point of view), with and without regard to children’s sex, the respondents and their husbands’ opinion about pregnancy prevention, desired educational attainment and age of marriage for children of both sex separately, attitudes toward abortion, perceptions about the effects of contraceptives and son -preference are considered as attitudinal questions and as such are included under this category.

4.7.4.1.4 Policy oriented variables

Under this heading questions about knowledge, influential groups on information and accepting family planning programs, preferred contraceptives, purposes of contraceptive use, and reference groups for reproductive problems are included.

4.7.4.2 Questionnaire design and level of measurement:

The questionnaire consisted of three types of questions:

- 1- Closed questions.
- 2- Open questions.
- 3- Scaled questions.

Closed questions are of two kinds. The first kind are questions offered to respondents with clear and predetermined answers and respondent puts his/her response in the relevant box or space. The second kind of closed question is the form in which the researcher tries to categorize the answer for certain questions which have openly been expressed.

The advantages of closed questions are that they are easy to use and analysis relative to open questions and they also permit comparability between respondents' answers. However, they also restrict the response into a fixed answer. They also may suggest responses that have not been thought about by respondents previously (May, 1993; Rossi, et al., 1983).

Following almost all closed questions, room has been left for comment by the respondents in order to let the respondents express themselves freely and at the same time provide easier data processing, .

The third kind of question was the scale form question. Within question design attitude scales play an important role. They consist of a set of statements which the researcher has designed and the respondents were asked to agree or disagree with the pre-coded answers (May, 1993). These sort of question is useful since it makes it possible to test a series of attitudes around a particular topic and not to rely upon one question as an indicator.

Attitudinal questions usually are sets of statements about the attitude object followed by rating scales which are either numeric (e.g. 1, 2, 3, 4, 5, or -2, -1, 0, +1, +2) verbal (e.g. 'Strongly agree', 'Agree', 'Neutral', 'Disagree', 'Strongly disagree'), face (e.g. lines of faces with expressions ranging from sad through neutral to happy) or line (e.g. lines with labels at each end) rating scales. Respondents are instructed to tick the response option that best reflects their position on each item. Individual respondents are then given total scores on the basis of the sums of their ratings. These total scores are taken to indicate the respondents' position in respect to the attitude object. Such sets of rating scales are usually called either 'Likert' scales or 'summated scales'. (Foddy, 1993; May, 1993; Rafi pour, 1985).

This approach (having many items) reduces the effect of one sided responses and increases the reliability of responses in contrast with the single item questions which are designed for measuring an attitude with a particular direction (May, 1993).

Regarding the above mentioned characteristics of scaled questions, respondents' attitudes toward fertility and fertility control related issues measured by five-point Likert scales from extremely positive to extremely negative. Between these two poles, a free response is possible.

- 1- extremely positive
- 2- positive

- 3- indifferent
- 4- negative
- 5- extremely negative

4.8 Pilot study

Pilot tests are an important stage in the development of survey instruments. Rossi et al. (1983) have recommended 20-50 cases as a sufficient number in order to discover the major sensitive points in a questionnaire before the main study is conducted.

Initially 20 questionnaires consisting of 65 questions were distributed among Iranian women in Wollongong, 20 in Sydney and 40 in Tehran in order to test the questions, detect wording problems, gather respondents' opinions as to appropriate questions and to reword questions before preparing the last draft. This pre-test was very helpful in terms of the study goals. Whereas some items and questions changed or were dropped out completely, additional questions were added to the questionnaire.

4.9 Reliability

Reliability may be said to be that criterion of successful scientific measurement in which it can be seen that the measuring instrument yields stable responses under conditions of repeated observation (Watts, 1978).

In test-retest method of reliability measurement, it has been assumed that the persons (respondents) and the testing situation (the field of study's circumstances) have not been changed during the two different time points across which the instrument was utilized. This method is indexed by a correlation coefficient and could be misleading particularly for measures of volatile phenomena or those prone to short-term changes (e.g., attitudes)

(Wright, 1979). But there are other methods of establishing reliability (Carmines and Zeller, 1979). They include:

1- Equivalent items method of reliability: by this approach a concept is measured at a single point in time by several equivalent items. The consistency of the items as well as their correlation with each other indicates the estimated reliability.

2- Split-half method where items are divided into two sub-sets and each subset is treated as a separate set. The correlation between them is then computed.

3- Another method for finding reliability, also utilizing a single administration of a single form, is based on the consistency of responses to all items in the test. For this purpose a generalized formula has been derived, known as coefficient alpha or Corenbach alpha (Anastasi, 1990). This method was used in order to measure the reliability of all scales in the present study. The results were highly reliable (Tables, 6.1.1.1- 6.1.4). The complete formula for coefficient alpha is given below:

$$r_{tt} = \left(\frac{n}{n-1} \right) \frac{SD_t^2 - \Sigma(SD_i^2)}{SD_t^2}$$

In this formula:

r_{tt} is the reliability coefficient of the whole test,

SD_t^2 the standard deviation of total scores on the test,

SD_i^2 the sum of the variance of item scores, and

n is the number of items in the test (Anastasi, 1990).

4.10 Validity:

The general problem of validity is the problem of how much the research or its instruments accurately reflect the nature of the research objects. In determining validity, the researcher is concerned with the principles of verification of:

- the relevance and precision of research goals.
- the worth of the research instruments (e.g. questionnaire).
- the worth and representativeness of the sample or study group.
- the worth and coherence of the analytical procedures used to collect and interpret the material.
- the confidence with which inferences about the sample can be spread to the population, in other words "generalizability".
- the validity of measured associations between variables (Watts, 1978).

Since there is no direct evidence of the "true", value of the concept under measurement, validity assessment is a complex issue. In fact attaining a perfectly valid indicator is unachievable since validity is a matter of degree (Carmin and Zellar, 1979). The underlying logic of the various validation methods is that the results obtained with the measurement instrument must be compatible or consistent with other relevant evidence.

Among different methods of assessing validity, content validity is of great importance (Wright, 1979). For the purpose of assessing content validity, the preferred method is to examine the literature carefully in order to find efficient ways in which other researchers have measured the concept under investigation.

The following sources and aids were used to refine and develop the validity of the questionnaire. World Fertility Survey (UN, 1987), the Population Council Short KAP Survey Questionnaire, The IUSSP Model Questionnaire for Comparative Fertility Surveys (The Population Council, 1972a), An Annotated Questionnaire to Explore the Socio-economic Consequence of Family Size in Thailand (Knodel et al., 1988), Ajzen and Fishbein's experience on family planning surveys (Ajzen and Fishbein, 1980), literature review, consultation with Wollongong University, Illawara Public Health Department and Iranian scholars and experts in the Ministry of Health, University of Tehran and Statistics Centre of Iran in personal communication about the subject, as well as pilot study results have been employed to develop and refine the questionnaire as a valid and reliable instrument of study.

4.11 Statistical techniques for analysis of data:

Statistical analysis of the collected data were conducted in three stages. At the first stage descriptive statistics (frequency, mean, mode and standard deviation) of variables was explored. Through this stage differences between groups mainly in terms of statistical mean are revealed and an over view of results is attained.

At the second stage, the relationship between two variables and effect of an independent variable (class, age, or level of education on a dependent variable (abortion, desired family size was investigated studied. Tests of significance as well as association between variables were conducted at this stage.

A test of significance tells us, that whether observed relationship between two variables whether is due to chance, and to what extent the results can be generalized (Hindle, 1994; May, 1993; Wright, 1979). Tests of significance together with tests of association allows us to infer whether one variable is related to another. Statistical methods for measuring significance were Chi

square, F test, and for the purpose of association, contingency coefficient, and pearson's correlation coefficient.

At the third stage, multivariate analysis determined the relationship between combined variables (two or more), as independent on one hand and dependent variables, on the other hand. Analysis of variance, together with simple, multiple, and stepwise regression, were the statistical methods for the purposes of this stage.

Data analysis used both SPSS and Statview graphic packages

4.12 Operational Definition

Any word as a concept might reflect a different meaning in different positions and cause ambiguity. This characteristic reveals that concepts are both dynamic and in need of definition and determination at any time particularly in time of investigation. Among well known philosophers, Martin Heideger and M, de Voltaire have stated and emphasized the above characteristics respectively. Accordingly and as the research requirement (Rossi, et al., 1983) the main concepts of the study were operationally defined as follows.

1- Field of study

Tehran as the field of study was divided into three regions : North, Centre, and South. The Central part of Tehran includes, civic administration, governmental institutions, bazaars (major traditional shopping centre), and culturally religious foundations such as Jameh Mosque. According to urban sociology, these peculiarities, have been recognized as criteria for centre of cities across the Islamic Civilization (Adibi, 1980; Ashraf, 1979), therefore, this part of Tehran selected as the Centre of the city. Motahhary street in the north and Molavi street in the south of this region were considered as its boundaries.

From Motahhary St. toward Alborz Mountain, and from Molavi St. toward the South were considered as the North and South regions.

2- Place of Birth.

A threefold classification scheme (Tehran (1), Other cities (2), and Rural (3)) was used in order to determine and categorize the place of birth of the respondents and their families' members. The same categorization (by minor changes) has been employed in (UN, 1987), where relationship between Place of Residence and Fertility is explained.

3- Duration of Residency.

Duration of Residency in Tehran was asked and the answers were recorded in terms of years of residency. Then they were categorized in two stages. At the first stage they were grouped in groups of five year interval, and at the second stage they were categorized in three main groups as followings:

- (1) - Less than 10 years
- (2) - Between 10 to 19 years
- (3).- 20 years and more

4- Educational level.

Educational levels were defined and determined in six categories (0 for Illiterate, 1, for Elementary, 2 for Secondary, 3, for High School, 4, for Under bachelor degree, 5, for Bachelor degree, 6, for Master and Doctoral degrees. In some cases that the respondents' educational attainment was not ended to a certain level of study, their years of schooling coded as the same as the closest and defined level of education. All levels of educational attainment, then were classified in three main classes as Low (illiterate and elementary), Middle

(secondary and high school), and High (tertiary), in order to make possible some sort of computation. The same classification was used for “desired level of education” for children of both sex.

5- Marital Status.

Marital status was asked for other members of the respondents’ families rather than the respondents themselves. The situations coded as (1) singles and never married, (2), married, (3), widows, and (4), divorced. All respondents assigned into group (2), since singles were excluded from the study population.

6- Occupational Situation and classification

The Australian Standard Classification of Occupation or ASCO was used to classify the occupation of the respondents and their husbands as well (Australian Bureau of Statistics (ABS), 1990). There are eight major groups with a ninth additional code as followings:

1. Managers and administrators
2. Professionals
3. Para-professionals
4. Tradespersons
5. Clerks
6. Salespersons and personal service workers
7. Plant and machine operators, and drivers
8. Laborers and related workers
9. Student/house-wife and pensioner

7- Family Size.

Family size was defined as the number of existing children in the respondents’ families as it has been stated in (Pollard, et al., 1990).

8- Knowledge of Contraception methods.

Methods of contraception were presented in **Yes/No** questions form and the respondents were asked to state whether or not they were familiar with each method. At the end all responses were categorized into three categories:

- 1- Traditional
- 2- Modern,
- 3- Both methods.

12- Modernization

Modernization was defined and measured according to the rate of modern goods consumption among the respondents' families.

In literature "modernization" has been measured by creating an index consisting of the number of modern equipment in a respondent's residence and used by her or her family. In this study a similar index has been employed. The index included ten items of household equipment and presented as **Yes/No** questions in order to indicate that the item whether or not existed and was used.

In some studies all modern goods have received the same weight (Aghajanian, 1979), but since there were obvious differences among the assigned goods in terms of their prices and required skills to utilize them, therefore, different weight must be allocated for each item according plausible criterion. For this purpose frequency distribution and rareness of the modern goods among the study population is considered as an appropriate criterion. The more an item was used by the respondent the less the score it attained and vice versa. The total score which then calculated for each respondent, considered as a base to group them in three main levels of modernization as: 1- Low, 2- Moderate, 3- High.

CHAPTER FIVE

Descriptive Statistics Analysis

This chapter deals with univariate descriptive statistics: distributions, rates and ratios, and measures of central tendency and dispersion. The statistics will be presented for all demographic, socio-economic, attitudinal, and policy-oriented variables. At the end an overview of the characteristics of the study population resulting from the statistical procedures will be presented.

5.1 Demographic characteristics of the study population.

This category includes regional distribution as well as age, age at marriage, place and date of birth, and duration of marriage and residency in Tehran for spouses. Existing children, if any, their gender, and number are also variables which have been taken into consideration under the heading of demographic characteristics.

TABLE 5.1.1
Regional distribution of the sample

Residential area	Frequency	Percent
North	122	30
Centre	124	30.5
South	160	39.5
Total	406	100

According to Table 5.1.1 about 40 per cent of the total study sample live in the Southern region of Tehran. Higher population density is main characteristic of Southern part of Tehran.

TABLE 5.1.2
Age distribution of the spouses.

Age-groups	<u>Husbands</u>	<u>Wives</u>
	No (%)	No (%)
15-19	- (-)	18 (4)
20-24	17 (4.2)	100 (25)
25-29	106 (26.1)	110 (27)
30-34	98 (24.1)	78 (19)
35-39	78 (19.2)	67 (16.5)
40-44	60 (14.8)	30 (7)
45-49	31 (7.6)	3 (.3)
50-54	9 (2.2)	-
55-59	5 (1.2)	-
60-64	2 (.5)	-
Total	406 (100)	406 (100)

Respondents:

Mean = 29.3 Mode = 25 Minimum = 17 Maximum = 45 Median = 29 Std. Dev = 6.8

Husbands:

Mean = 34.6 Mode = 28 Minimum = 22 Maximum = 61 Median=33 Std.Dev= 7.5

As Table 5.1.2 demonstrates, the mean and mode for age of the respondents are 29 and 25 respectively. These two measurements indicate that, whereas the most frequent age among the study sample is 25 year, the mean age (29.3) for respondents is at the peak of their reproductive span. The mode, median and mean age of the respondents all fall in age group 25-29. In sum 29 per cent of the respondents are between 15 and 24, 46 per cent between 25 and 34 and 25 per cent between 35 and 45 years . On the other hand this Table displays that the mean age of the respondents' husbands is about 34.6 years, five year older than the mean age of the respondents.

TABLE 5.1.3
Place of birth

Place of Birth	<u>Wife</u>		<u>Husband</u>	
	Frequency/	Percent	Frequency/	Percent
Tehran	221	54.43	172	42.4
Other cities	174	42.85	216	53.2
Rural	11	2.70	18	4.4
Total	406	100	406	100

Table 5.1.3 displays the distribution of the sample and their husbands according to their place of birth. The Table indicates that, whereas most of the respondents (54.43 per cent) have been born in Tehran, the respondents' husbands mostly come from other cities, large and small, across Iran.

TABLE 5.1.4
Duration of residency in Tehran

Duration of Residency	<u>Wives</u>		<u>Husbands</u>	
	No	(%)	No	(%)
< 4	57	14.07	30	7.44
5-9	35	8.64	31	7.69
10-14	36	8.88	35	8.68
15-19	32	7.90	35	8.68
20-24	72	17.77	50	12.40
25-29	75	18.51	77	19.10
30-34	51	12.593	63	15.63
35-39	34	8.395	41	10.17
40-44	12	2.963	28	6.94
45-49	1	.247	11	2.73
50 >	-	-	2	.493
No response	1	-	3	--
Total	406	100	406	100

Respondents:

Mean = 21 Mode = 25 Minimum = 1 Maximum = 45 Median = 22 Std.Dev=12

Husbands:

Mean = 24 Mode = 20 Minimum = 1 Maximum = 53 Median = 26 Std.Dev=2.1

As Table 5.1.4 indicates about 22 per cent of the respondents have lived for a period of 10 years in Tehran. The corresponding per cents for duration of 10-19 and more than 20 years residency are 17 and 61 respectively. Accordingly a major proportion of the sample have lived in Tehran in excess of 20 years. On the other hand, the Table demonstrates that about 32 per cent of the husbands have lived in Tehran for less than 20 years, 31.50 per cent between 20-29 years and the remainder (36.50 per cent) for more than 30 years.

TABLE 5.1.5
Age at marriage

Age at Marriage	<u>Wives</u>		<u>Husbands</u>	
	No	(%)	No	(%)
< 14	25	6.2	0	0
15-19	192	47.3	20	4.926
20-24	135	33.3	170	41.872
25-29	45	11.1	155	38.177
30-34	7	1.7	48	11.823
35-39	2	.5	9	2.217
40-44	--	--	2	.493
45-49	--	--	1	.246
50-54	--	--	0	0
55-59	--	--	1	.246
Total	406	100	406	100

Respondents:

Mean = 19.7 Mode = 19 Minimum = 11 Maximum = 36 Median = 19 Std.Dev=4.1

Husbands:

Mean = 25 Mode = 25 Minimum = 16 Maximum = 57 Median = 25 Std.Dev = 4

As Table 5.1.5 shows, about 53.5 per cent of the respondents were married under 20 years of age. This indicates that early (teenage/adolescent) marriage is one characteristic of the study population. Mean Age at marriage for their husbands is 25 years, despite the fact that the higher proportion of husbands (42 per cent) have married between 20- 24 years.

TABLE 5.1.6
Number of children in the respondents' families

Number of children	<u>Boy</u>		<u>Girl</u>	
	No	(%)	No	(%)
1	151	58.8	163	64
2	77	30	61	24
3	21	8.2	24	9.4
4	6	2.3	5	2
5	2	.8	2	.8
Total	402	100	387	100

Boy:

Mean = 2 Mode = 1 Minimum = 1 Maximum = 5 Median = 1 Std.Dev = .8

Girl:

Mean = 2 Mode = 1 Minimum = 1 Maximum = 5 Median = 1 Std.Dev = .8

As is apparent from the Table 5.1.6, 59 per cent of the respondents have had one, 30 per cent, two, and 11 per cent three or more male offspring at the time of the survey. The Table also indicates that the proportion of the respondents which has had only one female child at the time of the survey is 64 per cent. The corresponding figure for the respondents with two, three, and four girls has been calculated as 24, 9.4, and 2 per cent respectively.

TABLE 5.1.7
Distribution of existing family size

Number of children	No	(%)
1	113	32
2	125	35
3	70	20
4	27	7.5
5	14	4
6	4	1
7	2	.5
Total	789	100

Respondents:

Mean = 2.2 Mode = 2 Minimum = 1 Maximum = 7 Std.Dev = 1 Median = 2-3

According to Table 5.1.7 there are 789 children ever born for all respondents. Nearly two thirds of the respondents' families had two or more children at the time of survey.

TABLE 5.1.8
Duration of marriage

Duration (Years)	No	(%)
1-5	143	35.2
6-10	106	26
11-15	76	18.7
16-20	53	13
21-25	21	5.2
26-30	7	1.7
Total	406	100

Mean = 9.51 Mode = 1 & 3 Minimum = 1 Maximum = 31 Std.Dev = 6.90 Median = 8

Newly married mothers constitute 35.2 per cent of the respondents. However, the mean of duration of marriage among all respondents is 9.51 years.

Respondents under 15 years duration of marriage constitute 80 per cent of the study sample.

5.2 Socio-economic characteristics of the study sample.

Under the heading of socio-economic characteristics, educational attainment of the respondents as well as that of their husbands is included. Occupation of spouse, together with ownership of residence and level of modernization, are also regarded as socio-economic characteristics of the sample.

TABLE 5.2.1
Educational attainment of the sample and their husbands

Educational Attainment	<u>Wives</u>		<u>Husbans</u>	
	No	(%)	No	(%)
Illiterate	28	6.9	16	3.9
Primary	82	20.2	76	18.7
Secondary	97	23.9	77	19
High school	141	34.7	139	34.2
Post diploma	18	4.4	21	5.2
Bachelor	32	7.9	51	12.6
MS & >	8	2	26	6.4
Total	406	100	406	100

Wife: Mode = High school

Median = Secondary

Husband: Mode = High school

Median = High school

According to Table 5.2.1, educational attainment among the respondents falls, on average, between level two (secondary) and level three (high School). Only 14.3 per cent of the respondents have enjoyed higher education. On the whole the study population's educational level is characterized as:

- 1- Low Level (Illiterates + Primary) = 27.1 per cent.
- 2- Middle Level (Secondary and high school) = 58.5 per cent.
- 3- High Level (Undergraduate and postgraduate) = 14.3 per cent.

The mode for husbands' educational attainment is level three (high school). Low, middle and high level of educational attainment for the husbands are reported by 22.6, 53.2., and 24.2 per cent respectively.

TABLE 5.2.2
Occupation

Type of Occupation	<u>Wives</u>		<u>Husbands</u>	
	No	(%)	No	(%)
Managers /administrators	0	0	9	2.3
Professionals	48	11.8	79	20
Para-professionals	11	2.7	21	5.3
Tradespersons	0	0	6	1.5
Clerks	17	4.12	72	18.3
Salesperson & personal service workers	1	.25	119	30.2
Plant & machine operators, and drivers	0	0	47	11.93
Laborers & related workers	4	.98	40	10.15
Students, house-wife/pensioner (not in the paid labour force)	325	80.50	1	.25
No response			12	
Total	406	100	406	100

Wife: Mode = Students, house-wife, pensioner
pensioner

Median = Students, house-wife,

Husband: Mode = Salesperson and service workers

Median = Salesperson and service workers

Table 5.2.2 demonstrates that 80.50 per cent of the respondents have unpaid work, in other words they are out of formal labour market. Moreover, only 14.50 per cent of them work as professionals and para-professionals and none of them occupies a managerial or administrative position. On the other hand, Table 5.2.2 indicates that almost all husbands are employed. A considerable difference is observed between spouses' types of occupation. Whereas only 14.50 per cent of the respondents are classified as professional and para-professional, the corresponding figure for husbands is 25.3 per cent.

TABLE 5.2.3
Home modernization

Home Modernization	No	(%)
Low	117	29.18
Moderate	214	53.37
High	70	17.46
No response	5	—
Total	406	—100

Median = Moderate level

As it has been indicated in Table 5.2.3, about 53 per cent of the respondents enjoy a moderate level of modern equipment utilization. Twenty nine per cent of the sample are classified as low level equipped respondents, while 17 per cent are classified as high level equipped families.

TABLE 5.2.4
Ownership of residence

Ownership	No	(%)
1-Private	174	43.392
2-Rental	176	43.89
3-Organizational	14	3.491
4-Free of Charge	15	3.741
5-Other	22	5.486
6-No response	5	—
Total	406	100

Mode = Rental

The content of Table 5.2.4 makes it apparent that the respondents are divided into two main groups in relation to ownership of a residence. Whereas 43.9 per cent (mode) of the study population live in rental accommodation, 43.40 per cent own their residence. The other categories, particularly four and five, belong to the respondents who chiefly live in their parents' home or in property owned by "in - Laws' "usually free of charge.

5.3 Attitudinal characteristics of the study population.

Desired number of children of the respondents as well as of “other families”, the couple’s opinion about pregnancy prevention, desired educational attainment and age of marriage for children of each sex, attitudes toward abortion, contraceptives’ effects and sex-preference are considered as attitudinal measures, for which descriptive statistics have been reported.

TABLE 5.3.1
Number of children (sex specific) desired by the respondent

Number of children	<u>girl</u>		<u>boy</u>	
	No	(%)	No	(%)
0	29	11.6	18	7.2
1	159	63.8	152	60.8
2	49	19.7	67	26.8
3	12	4.8	10	4
4	--	--	3	1.2
Total	322	100	346	100

Girls:

Mean = 1.2 Mode = 1 Minimum = 0 Maximum = 3 Median = 1 Std.Dev = .70

Boys:

Mean = 1 Mode = 1 Minimum = 0 Maximum = 4 Median = 1 Std.Dev = .7

As Table 5.3.1 displays about 64 per cent of the respondents wish to have at least one girl. Only 11.6 per cent do not wish to have a girl and about five per cent (4.8%) desire to have three girls. Having two girls is the second favored choice among the respondents.

According to Table 5.3.1 having one boy is preferred by 60/8 per cent of the respondents about . Only about seven per cent of the sample has revealed that they do not want to have a boy.

TABLE 5.3.2
Total number of children desired by the respondents by sex and
irrespective of sex

Desired Number	<u>sex-specific</u>		<u>irrespective of sex</u>			
	No	(%)	No	(%)	No	(%)
1	17	6.8	13	8.8	30	7.5
2	149	59.6	106	71.6	255	64
3	41	16.4	22	14.9	63	15.8
4	35	14	6	4	41	10.3
5	5	2	1	.70	6	1.5
6	3	1.2	--	--	3	.8
Total	621	100	320	100	941	100

Sex specified number of children desired by the respondents

Mean = 2.5 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 6 Median = 2

Number of children desired by the respondents irrespective of their sex

Mean = 2.2 Std.Dev = .7 Mode = 2 Minimum = 1 Maximum = 5 Median = 2

Total:

Mean = 2 Std.Dev = .9 Mode = 2 Minimum = 1 Maximum = 6 Median = 2

It is necessary to note that the total number of sex specific desired children of Table 5.3.1 is different from the corresponding figure in Tables 5.3.2 (668 vs 621). The reason is that, in the previous Table the respondents with no desire to have a child of either sex were included whereas in the present Table they are excluded because there were no respondents that desired to be childless. Therefore, the subtraction of the respondents of the first category (no boy {(18)+no girl (29) is equal to =(47)} from the total number in Table 5.3.1, (668-47= 621) will provide balance between the sums.

Tables 5.3.1 and 5.3.2 indicated one girl and one boy as most frequently desired number of children. Table 5.3.2, also demonstrates two children as the preferred number for about 60 and 72 per cent of respondents.

Table 5.3.2 also indicates that about 72 per cent of the respondents are merely interested in the number of children rather than their sex and that they wish to have two children. The mean number of desired children for this group of the respondents is lower than that of the other group with sex determined desirous for children (2.2 Vs 2.5).

Table 5.3.2 indicates that two children is the most preferred family size. The mode in this Table, together with mean, indicates that wish for two - three children dominates attitudes of the respondents regarding family size.

TABLE 5.3.3 - Number of children (boy and girl) desired by “other families”

Number	girl		boy		sex- selected		non-sex selected		Total	
	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)
0	18	7.8	3	1.3	-	-	-	-	-	-
1	166	71.9	142	61.5	6	2.6	4	2.5	10	2.6
2	44	19.	71	30.7	142	61.5	110	70.1	252	65
3	3	1.3	9	3.9	31	13.5	26	16.6	57	14.7
4	-	-	3	1.3	46	19.9	12	7.6	58	15
5	-	-	1	.4	2	.9	5	3.2	7	1.8
6	-	-	1	.4	1	.4	-	-	1	.2
7	-	-	1	.4	3	1.3	-	-	3	.8
Total	281	100	344	100	604	100	375	100	979	100

Desired number of girl by “other families”

Mean = 1 Std.Dev = .5 Mode = 1 Minimum = 0 Maximum = 3 Median = 1

Desired number of boy by “other families”

Mean = 1 Std.Dev = .8 Mode = 1 Minimum = 0 Maximum = 7 Median = 1

Desired number of children by “other families with respect to their sex

Mean = 2.6 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 7 Median = 3

Desired number of children by “other families irrespective of their sex

Mean = 2.4 Std.Dev = .798 Mode = 2 Minimum = 1 Maximum = 5 Median = 2

According to Table 5.3.3, nearly 71.9 per cent of the respondents perceive that “other families” desire to have one girl on average. Also Table 5.3.3 indicates that a high proportion of the respondents (61.5%) believes that desire for one boy is the dominant attitude of “other families”.

As Table 5.3.3 indicates, the mean perceived number of children desired by “other families” with regard to children’s sex is 2.6. According to Table 5.3.3 about 61.5 per cent of the respondents perceive that “other families” are in favor of two children. This Table also demonstrates that desire to have two children regardless of their sex is perceived as the commonest attitude for 70.1 per cent of the study sample. It has also been indicated in Table 5.3.3 that on the whole, mean desired number of children perceived for “other families” is about 2.5.

Total (Table 5.3.3):

Mean = 2.5 Std.Dev = .9 Mode = 2 Minimum = 1 Maximum = 7 Median = 2

Following table (Table 5.3.4) has been devised in order to reflect the attitude of the respondents as well as that of their husbands about pregnancy prevention.

TABLE 5.3.4
The spouses’ opinion about pregnancy prevention

Attitude	wives		husbands	
	No	(%)	No	(%)
Strongly Agree	276	68	261	64.3
Agree	122	30	110	27
Indifferent	4	1	21	5.1
Disagree	4	1	14	3.4
Strongly Disagree	0	0	0	0
Total	406	100	406	100

Respondents:

Mean = 1 Std.Dev = .6 Mode = 1 Minimum = 1 Maximum = 5 Median = 1

Husbands

Mean = 1 Std.Dev = .7 Mode = 1 Minimum = 1 Maximum = 5 Median = 1

As Table 5.3.4 displays 98 per cent of the respondents are in full agreement with pregnancy prevention. Table 5.3.4 also demonstrates that more than 91.3 per cent of husbands are in favor of pregnancy prevention and contraceptive use.

TABLE 5.3.5
The respondents’ opinion about abortion

Attitude	Frequency	Percent
Strongly Agree	44	10.9
Agree	74	18.3
Indifferent	33	8.2
Disagree	156	38.6
Strongly Disagree	97	24
No response	2	~
Total	406	100

Mean = 3 Std.Dev = 1.3 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

About sixty-three per cent of the respondents do not see abortion as appropriate and strongly/disagree with it according to Table 5.3.5. Their attitudes, however, have been differed when they were asked to respond to questions about abortion in detail. The following Table (Table, 5.3.6) displays frequency and per cent of their responses in detail.

TABLE 5.3.6
Attitudes of the respondents toward abortion

Items	Attitude	Strongly agree	Agree	Indifferent	Disagree	Strongly disagree	No response
1- The necessity of abortion because of mothers' health		226 (56.2%)	125 (31%)	10 (2.5%)	26 (6.5%)	15 (3.7%)	4 (--)
2- The necessity of abortion for deformed foetus		233 (58%)	115 (28.6%)	9 (2.2%)	32 (8%)	13 (3.2%)	4 (--)
3- Abortion as a solution for unwanted pregnancy		88 (22.2%)	84 (21.2%)	39 (10%)	115 (29%)	71 (18%)	9 (-)
4- The necessity of abortion for over- crowded families		84 (21%)	81 (20 %)	37 (9.2%)	130 (32.4%)	69 (17.2%)	5 (--)
5- The necessity of abortion for poor families		90 (22.4%)	86 (21.4%)	36 (9%)	120 (30%)	70 (17.4%)	4 (--)
6- The necessity of abortion for undesired sex		15 (3.8%)	24 (6%)	22 (5.5%)	170 (42.5%)	169 (42.3%)	6 (--)
7- Abortion is permissible when foetus is less than three months		62 (15.5%)	66 (16.5%)	43 (10.8%)	132 (33%)	97 (24.3%)	6 (--)
Total		66 (16.5%)	139 (34.6%)	17 (4.2%)	164 (40.8%)	16 (4%)	4 (--)

Central tendency indices for all items in Table 5.3.6 respectively

1- The necessity of abortion for mothers well-being

Mean = 2 Std.Dev = 1.047 Mode = 1 Minimum = 1 Maximum = 5 Median = 1

2- The necessity of abortion for deformed foetus

Mean = 2 Std.Dev = 1.06 Mode = 1 Minimum = 1 Maximum = 5 Median = 1

3- Abortion as a solution for unwanted pregnancy

Mean = 3 Std.Dev = 1. Mode = 4 Minimum = 1 Maximum = 5 Median = 3

4- The necessity of abortion for over-crowded families

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 3

5- The necessity of abortion for poor families

Mean = 3 Std.Dev = 1. Mode = 4 Minimum = 1 Maximum = 5 Median = 3

6- The necessity of abortion for undesired sex

Mean = 4 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

7- Abortion can be disregarded when the foetus is not beyond three months

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

Total:

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 2

According to Table 5.3.6, 87 2per cent of the respondents are in agreement with abortion because of mothers’ health. Table 5.3.6 also indicates that abortion of a deformed foetus is acceptable to 86.6 per cent of the respondents. On the other hand, the Table displays that 47 per cent of the respondents are opponents of abortion when it is viewed as a solution for unpleasant consequences of an unwanted pregnancy. About fifty (49.6) and 47.4 per cent disagree where abortion should be used for over- crowded (more than three children), and economically poor families. Nearly eighty five (84.8) per cent disagree that abortion should be employed when the foetus is

known to be an undesired sex. Despite the fact that abortion of a foetus under three months old, is religiously tolerated, Table 5.3.6 demonstrates disagreement of a major part (57.3 per cent) of the respondents with abortion before ensoulation.

The last row of Table 5.3.6 demonstrates the division of opinions about abortion. Nearly 51 per cent of the respondents agree with abortion whilst 44.8 per cent disagree.

The following table (Table 5.3.7) displays attitudes of the respondents toward contraceptive usage.

TABLE 5.3.7
Attitudes and beliefs of the respondents about contraceptive usage

Items	Attitudes	Strongly agree	Agree	Indifferent	Disagree	Strongly disagree	No response
1- Contraceptive might damage mothers' health		32 (8.2%)	60 (15.3%)	25 (6.4%)	185(47.3%)	89 (22.8%)	15 (--)
2- Contraceptive might deform foetus		31 (8%)	85 (22%)	54 (14%)	148(38.2%)	69 (17.8%)	19 (--)
3- Contraceptives are unreliable		27 (7%)	80 (20.6%)	49 (12.6%)	170(43.7%)	63 (16.2%)	17 (--)
4- Contraceptives have disease prevention characteristics		54 (13.9%)	143 (37 %)	102(26.4%)	73 (18.9%)	6 (3.9%)	28 (--)
5- Contraceptive usage might cause infecundity		40 (10.2)	90 (23%)	67 (17.1%)	138(35.3%)	56 (14.3%)	15 (--)
6- Total		59 (15%)	205(52.3%)	42 (10.7%)	75 (19.1%)	11 (2.8%)	14 (--)

Central tendency indices for all items in Table 5.3.7 respectively

1- Contraceptive use might damage mothers’ health

Mean = 4 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

2- Contraceptive use might deform foetus

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

3- Contraceptives are unreliable

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

4- Contraceptives have disease prevention characteristics

Mean = 3 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 5 Median = 2

5- Contraceptive use, immediately after marriage, might cause relative infecundity

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 3

Total:

Mean = 2 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 5 Median = 2

According to Table 5.3.7 about 70 per cent of the respondents disagrees with the side effects of contraceptive use over mothers’ health and contraceptive users.

Also the Table displays that about 56 per cent of the respondents’ do not believe side effect of contraceptive use over foetus. Their disagreement with this item, however, is not as strong as that of mothers’ health.

The reliability of contraceptives were approved by nearly 60 per cent of the respondents (Item 3). Only 27.6 per cent of the sample demonstrated a favor attitude toward unreliability of contraceptives.

Among different characteristics which have been attributed to contraceptives, their preventive peculiarities against some diseases, particularly sexually transmitted diseases (STD), is of great importance. In this regard the Table

5.3.7 demonstrates a relatively high degree of agreement among the respondents. According to the Table, about 51 per cent of the sample has accepted the preventive characteristic of contraceptives.

The Table also demonstrates attitudes of the respondents towards another attributed characteristic for contraceptives (Causing a relative infecundity). This peculiarity has been rejected by about 49.6 per cent of the respondents. Among the rest 50 per cent, 33.2 per cent has agreed with such attributed characteristic and 17.1 per cent demonstrated no certain attitude in this respect and remained indifferent.

As it seems apparent from the Table, the general attitude toward contraceptives has been reflected positively. According to Table 5.3.7 about 67.3 per cent of the study sample has positively addressed their attitudes toward contraceptives. Also about 21.9 per cent disagreement, and 10.7 per cent, indifferent attitudes were indicated among the respondents in this regard.

TABLE 5.3.8
Desired level of education for children

Level of Education	<u>Girl</u>		<u>Boy</u>	
	No	(%)	No	(%)
Primary	1	.3	-	-
Secondary	1	.3	-	-
High school	29	8	16	4
Post diploma	15	4	15	4
Bachelor	68	18.7	71	18.3
Ms &>	237	65	272	70.3
Other	13	3.5	13	3.3
No response	42	-	19	-
Total	406	100	406	100

Desired level of education for children (girls)

Minimum = 1 Maximum = 6 Mode = 6 Median = 6

Desired level of education for children (boys)

Minimum = 1 Maximum = 6 Mode = 6 Median = 6

As it has been stated above and indicated in the Table 5.3.8, there seems not to be a major differences between wishes of the respondents for their girls and boys in terms of educational achievement. The highest level of education has been desired for children of both sex as it was expected.

TABLE 5.3.9
Preferred age of marriage for children

Age of marriage	<u>Girl</u>		<u>Boy</u>	
	No	(%)	No	(%)
< 20	37	9.8	9	2.4
20 - 25	283	75	114	30.3
26 - 30	54	14.3	209	55.6
31 >	1	.3	42	11
No response	31	-	32	-
Total	406	100	406	100

Central tendency indices for preferred age of marriage for girls

Mean = 20- 25 Std.Dev = .5 Mode = 20 - 25 Median = 20 - 25

Central tendency indices for girls’ for preferred age of marriage for boys

Mean = 26- 30 Std.Dev = .7 Mode = 26- 30 Median = 26- 30

According to Table 5.3.9, 75 per cent of the respondents indicated ages 20 to 25 as preferred ages of marriage for girls. While, ages 26 to 30 has been indicated as the most preferred ages of marriage for boys. As the Table demonstrates, 55.6 per cent of the study sample advocate boys’ marriage in mentioned ages.

Following Table presents attitudes and beliefs of the respondents toward sex preference.

TABLE 5.3.10
Attitudes and beliefs of the respondents about sex preference

Items	Extremely agree	Agree	Indifferent	Disagree	Extremely disagree	No response
1- Boy keeps family name and reputation	60 (15%)	104 (26%)	54 (13.5%)	127 (31.7%)	55 (13.7%)	6 (-)
2- Boy cost less than girl	20 (5%)	43 (10.8%)	38 (9.5%)	211 (52.9%)	87 (21.8%)	7 (-)
3- Boy is an income source for family but girl not	28 (7%)	70 (17.5%)	42 (10.5%)	183 (45.9%)	76 (19%)	7 (-)
4- Boy is the source of emotional support for his mother and sisters	41 (10.4%)	133 (33.7%)	46 (11.6%)	122 (30.9%)	53 (13.4%)	11 (-)
5- Mothers rely on a boy in the absence of fathers particularly after fathers' death	66 (16.5%)	166 (41.6%)	53 (13.3%)	77 (19.3%)	37 (9.3%)	7 (-)
6- Boy is insurance for old age	46 (11.5%)	131 (32.8%)	60 (15%)	105 (26.3%)	57 (14.3%)	7 (-)
7- Boy is necessary for religious ceremonies and purposes	52 (13%)	136 (34%)	64 (16%)	93 (23.3%)	54 (13.5%)	7 (-)
8- Boy is less vulnerable than girl in society	63 (15.7%)	101 (25.2%)	47 (11.7%)	126 (31.4%)	64 (16%)	5 (-)
Total	36 (9%)	120 (30%)	41 (10.3%)	155 (38.9%)	47 (11.8%)	7 (-)

Central tendency indices for all items of Table 5.3.10

1-Boy keeps family name and reputation

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 3

2- Boy cost less than girl

Mean = 4 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

3- Boy is an income source for family but girl not

Mean = 4 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

4-Boy is the source of emotional support for his mother and sisters

Mean = 3 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 5 Median = 3

5- Mothers rely on a boy in the absence of father particularly after father's death

Mean = 3 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 5 Median = 2

6- Boy is insurance for old age

Mean = 3 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 5 Median = 3

7- Boy is necessary for religious ceremonies and purposes

Mean =3 Std.Dev = 1 Mode = 2 Minimum = 1 Maximum = 5 Median = 3

8- Boy is less vulnerable than girl in society

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 3

Total:

Mean = 3 Std.Dev = 1 Mode = 4 Minimum = 1 Maximum = 5 Median = 4

Table 5.3.10 displays more disagreement (45.5 per cent) than agreement (41 per cent) with the item which indicates boys as an agent which keeps family name and reputation.

The Table also demonstrates disagreement of about 75 per cent of the study sample with state of “less cost for boys than girls”. According to the Table, only 15.8 per cent of the respondents has revealed their agreement with this item (item 2). Moreover, the majority of the respondents, 64.9 per cent, have

revealed their disagreement with considering boy as an income resource for family, in contrast with girl. There are 44.1 per cent agreement and disagreement with boy when son is proposed as a source of emotional support for females of family (mother and sisters).

The majority of the respondents have exhibited their agreement with reliance of mothers on a boy in the absence, particularly after the death of fathers. According to the Table whereas 58 per cent agreement has been indicated this item (Item 5), the corresponding per cent for disagreement is 28.6.

The Table also indicates that a considerable per cent (40.6) of the respondents have reflected their disagreement with son preference when boy is considered as an insurance for old age. A higher per cent of the respondents (44.3) indicated their attitude positively (agreement) toward the item. As it is apparent, there is not a great difference between two extreme attitudes, with regard to calculated percentages.

There is a wider gap between two extreme attitudes in respect of considering boy as a necessity for religious purposes. In positive extreme about 47 per cent and in the other extreme (negative pole) about 37 per cent of the respondents are grouped. But the attitudes were reversed when the respondents were asked to reflect their opinion about the vulnerability of boys and girls in society. As it has been indicated in the Table, more than 47 per cent of the respondents demonstrated their disagreement with the stated item. On the other hand only about 41 per cent of the study sample has displayed their agreement with the item.

On the whole and according to the content of Table 5.3.10, about 50.7 per cent of the study population has revealed their disagreement with son-preference. The remained 50 per cent includes 39 per cent supporter of son-preference and 10.3 per cent indifferent responses.

TABLE 5.3.11
Preferred person to contraception

Person	Frequency	Percent
Woman	151	38.3
Man	166	42
Both	78	19.7
No response	11	—
Total	406	100

Table 5.3.11, demonstrates a remarkable proportion of the respondents (42 per cent) that support, and in fact suggest, men as primary contraceptive users.

5.4 Policy-Oriented Characteristics of The Study Population.

In this part descriptive statistics are presented for knowledge about contraception, sources of information about contraception, preferred contraceptives, purposes of contraceptive use, and influential groups as consultants for reproductive system problems and contraceptive use.

TABLE 5.4.1
Knowledge about contraceptive methods

Methods	Frequency	Percent
Rhythm or Safe Period	128	31.5
Withdrawal	240	59.2
Breast Feeding	190	46.8
Condom	332	81.8
Intera Uterine Device	350	86.2
Injectables	186	45.8
Pill	358	88.2
Minipill	167	42.2
Male Sterilization	303	74.6
Female Sterilization	322	79.3
Norplant	168	41.6

Among all methods which have been introduced to the respondents, two traditional (Rhythm, and Breast Feeding) and three modern (Injectables, Minipill, and Norplant) methods were not well-stated among the respondents. In fact, according to Table 5.4.1, less than 50 per cent of the study sample were familiar with these methods. However, Pill, IUD, and Condom have been recognized as the well known modern methods among the respondents. Also it is worth noting that about 74 per cent of the study population have been familiar with both traditional and modern methods of contraception and at least one method of each category was known to them.

The following table reflects the distribution of the respondents by sources of family planning information, advisors for contraceptive usage, and their first consul/ reference in case of reproduction system's problems.

TABLE 5.4.2
Sources of information, advisors for practice of contraceptive and references in case of reproduction system's problem among the respondents

Sources	<u>Source of Information</u>		<u>Advisors for contraceptive use</u>		<u>Reference in case of reproduction problems</u>	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Husband	58	(14.3%)	99	(35.9%)	224	(56%)
Friends and Peers	88	(21.7%)	35	(12.7%)	13	(3.2%)
Parents	16	(4%)	19	(6.9%)	19	(4.8%)
Health Workers	132	(32.6%)	69	(25%)	136	(34%)
Mass Media	68	(16.8%)	6	(2.2%)	3	(.7%)
Religious Sources	0	(0%)	1	(.4%)	0	(0%)
Educational Centres	32	(8%)	5	(1.8%)	2	(.5%)
Others	11	(2.7%)	42	(15.2%)	3	(.7%)
No response	1	(-)	3	(-)	6	(-)

According to Table 5.4.2, whereas most of the respondents have indicated health workers and health institutions as main sources of information about family planning and contraceptive use, religious sources have not had an effective role in this respect. It is also worth noting that as the Table demonstrates, informal sources such as friends, neighbors, and peer groups have had stronger influence than formal institutions such as family , parents, educational centres and even mass media.

Among the advisors categories, husbands sit at the first place. About 36 per cent of the study population (mode) have introduced their husbands as advisors who have encouraged them to contraceptive use. However, again in this case “religious sources” have been identified as the least determinant factor. Health workers , together with “friends, neighbors and Peers” are defined as the second and the third influential groups in this manner respectively.

Husbands and health workers have been introduced as the two main references in case of confronting with a pregnancy or reproduction system’s problems. These together include 90 per cent of the study population’s references. Next to these two influential groups are parents and friends, neighbors, and peers with about five and three per cent respectively. Religious sources is remained at the lowest rank with no frequency and per cent. Table 5.4.3 displays frequency and percentage of contraceptive methods used and preferred by the respondents.

TABLE 5.4.3
Methods of contraception which are used, and preferred by the respondents

Methods	Methods have been used		First favored choice		Second favored choice		Knowledge of methods	
	No	(%)	No	(%)	No	(%)	No	(%)
Rhythm	1	(.4)	3	(1)	2	(.8)	128	(31.5%)
Withdrawal	1	(.4)	5	(1.8)	2	(.8)	240	(59.2%)
Breast feeding	-	-	-	-	-	-	190	(46.8%)
Condom	62	(23.1)	31	(11.2)	21	(8.4)	332	(81.8%)
Intra.Uterin.Device	109	(40.7)	90	(32.4)	61	(24.4)	350	(86.2%)
Injectables	1	(.4)	1	(.4)	4	(1.6)	186	(45.8%)
Pill	72	(26.9)	78	(28)	53	(21.2)	358	(88.2%)
Mini-pill	8	(3)	4	(1.4)	2	(.8)	167	(42.2%)
Male Sterilization	1	(.4)	28	(10)	43	(17.2)	303	(74.6%)
Female Sterilization	11	(4)	36	(13)	58	(23.2)	322	(79.3%)
Nor plant	2	(.7)	2	(.7)	4	(1.6)	168	(41.6%)
No response	11	(-)	1	(-)	29	(-)	-	-

As it has been indicated in Table 5.4.3, I.U.D , Pill, and Condom are frequently used by the respondents. These three methods are recognized as most reliable, wide spread and available methods of contraception among the respondents and over the world as well (WHO, 1993a). The Table also displays that I.U.D, Pill and Female Sterilization have been indicated as the first favored choices of contraception respectively. These three methods constitute about 73 per cent of preferred methods by the respondents.

Among all methods I.U.D has obtained the highest priority even as the second favored choice. Female Sterilization, Pill, and Male Sterilization have been indicated as the second favored choice of contraception (respectively), next to I.U.D. These four methods constitute about 85 per cent of all preferred methods as the second choice of the respondents.

TABLE 5.4.4
The purpose of contraceptive use

Purposes	Frequency	Percent
No more child	193	69.2
Spacing	69	24.7
Pleasure	0	0
Husband's satisfaction	4	1.4
Health	9	3.3
Other	4	1.4
Total	279	100

As it is apparent from Table 5.4.4, about 69.2 per cent of the study population use contraceptive since they do not want more children. In other words they might have reached to their desired or completed family size. The next and most important purpose has been defined as spacing which includes only about 25 per cent of the responses. Other purposes do not constitute a considerable proportion of contraception acceptance.

5.5 Overview of descriptive analysis

In this part an attempt has been made to describe all important variables included in the study. Initially all variables conceptualized into four categories:

- 1- Demographic
- 2- Socio-economic
- 3- Attitudinal, and,
- 4- Policy oriented variables.

Through out these categories the characteristics of the study population explained by tables and descriptive statistics measurements. A summery of findings at this stage is presented according to the four categories respectively.

1- Demographic characteristics of the respondents.

Tehran as the field of the study divided into three regions : North, Centre, and South. The respondents have been interviewed in all three regions. The highest proportion of the respondents belong to the South since its population is more than that of the others. On the whole 39.5 per cent of the respondents were from the South, 30.5 per cent from the Centre and 30 per cent from the North (Table, 5.1.1).

The Population Study includes respondents from different age- groups particularly from the young. The median, mean, and mode of age of the respondents has been stated as 29, 29.3, and 25 respectively. It means that high proportion of the study population has been centred in age- group 25-29. With regard to this characteristic, and since the study population includes women of 15-45 years old, it can be said that most of them are in the peak of their reproductive life (Table 5.1.2).

The corresponding measures (median, mean, and mode) for the respondents' husbands, were reported as 33, 34.6, and 28 (Table 5.1.2). An almost 5 year age difference between the husbands and wives is demonstrated. This difference has been confirmed through out comparisons in age at marriage, as well as desired Age of marriage for children.

While the high proportion of the respondents (54 per cent) have been born in Tehran , most of their husbands (53.2) have defined their "place of birth" as "other cities" (Table 5.1.3). Apparently these statistics display a migration wave from small towns towards capital cities which is expected particularly among the third world countries.

Duration of residency in Tehran for the respondents and their husbands, in terms of median, mean and mode is more than 20 years (Table 5.1.4). But here again a 5 year difference between these two cornerstones of families is observable.

Perhaps age at marriage is the most important variable which can partly explain the existing differences between spouses in terms of demographic, socio-economic , and other characteristics. Whereas the mean age of marriage for the respondents is 19.7, the corresponding mean for their husbands is reported as 25 (Table 5.1.5). As it has been demonstrated in the above mentioned table, the median (19, and 25), and mode (19, and 25) for spouses have also been characterized by the similar difference .

Regarding the presented indices of age at marriage, together with the fact that almost all respondents have married before 30, early and universal marriage as two main characteristics of developing and Muslim countries could partly be concluded. However these peculiarities might prevent women from labour force participation, higher educational achievements, economically

independence and partly produce low status, high rates fertility, and larger family size.

Among the respondents, families with one girl and one boy (two children) constitute about 35 per cent of the study population (Table 5.1.7). While the mean of children ever born in the respondents' families is 2.2, and at the first look may seem very close to replacement rate, it seems to be necessary to note that according to the age structure of the respondents as well as age at marriage characteristics of the study sample, having 2.2 children does not mean completed family size, and stop child bearing because most of them are still young and capable of delivering few or a few number of children. Duration of marriage (Table 5.1.8) clearly display newly married women as dominant group among the respondents and youthful characteristic of the respondents.

2- Socio-economic characteristics of the study population.

In terms of socio-economic characteristics, the findings reveal a considerable difference between the study population's educational attainment and that of their husbands. The differences about the level of educational attainment is demonstrated in Table 5.2.1. According to the Table, while only about 14 per cent of the respondents enjoy higher educational level, the corresponding per cent for their husbands is about 24. Moreover, despite the similarity between mean and mode of spouses in this respect, median for the respondents and their husbands is (secondary) and (high school) respectively, which in turn indicates the so-called educational attainment difference between two sex or gender. This could partly be because of lower age at marriage for females which involve them with house-keeping duties, child bearing and child rearing and consequently prevent them from higher education and labour force participation as social activities.

The stated difference between the respondents and their husbands is also true in terms of their occupational situation. Whereas more than 98 per cent of the husbands engaged in paid-work market, only about 20 per cent of the respondents has had similar situation in labour market (Table 5.2.2) . Accordingly it can be concluded that in most families among the study population only one of the spouses earns money. This circumstance together with differences between age at marriage, educational attainment, and occupational situation not only does display a male dominated labour force market, hierarchical family structure, and sex segregated social environment, but also certainly affects the families economic situation in provision of basic needs such as housing and utilization of modern life facilities as well.

Level of modernization of the respondents' families have been displayed on Table 5.2.3 . According to the Table only about 17 per cent of the respondents live in highly equipped environment, while 29 and 53 per cent of them enjoy low and moderate level of modern equipment in their homes.

However, ownership of residential area as another indicator of the respondents' socio-economic circumstances is demonstrated in Table 5.2.4. The respondents who have their own private living place or live in a rental area as the main groups, constitute about 43.4 , and 43.9 per cent of the total sample respectively. The remained per cent (about 13) includes mainly the respondents that live free of charge in their parents or in-law's properties.

3- Attitudinal characteristics of the study population.

According to Tables 5.3.1, one child of either sex (two children on the whole) is most desirable for high proportion of the sample. Also having two children is the desire of most of the respondents who have expressed the number of desired children with and without regard to their sex (Table 5.3.2). The same desire is true for "other families" in accordance with the respondents

perspectives (Tables 5.3.3). The main difference between the respondents' desire and that of "other families" is considered to be sex ratio. The respondents desire exhibit a higher sex ratio than that of "other families" (130, and 111 respectively). The higher sex ratio, can be concluded as an index of sex preference. The higher sex ratio the higher son-preference is indicated.

The respondents' desire or expectations about educational attainment and age of marriage of their children have been reflected differently. While there is not a big difference between desired educational level for children of both sex (Table 5.3.8), a substantial difference exists between preferred age of marriage for them (Table 5.3.9). According this table at least a five year delay at marriage for boys has been stressed. This difference could legitimate and help continuity of hierarchical age structure of families and gender differences as well.

The respondents and their husbands according to Table 5.3.4 are almost in full agreement (98 and 91.3 per cent respectively) with pregnancy prevention measures. While an agreement with abortion in case of mother and child health (about 87.2 and 86.6 per cent respectively) has been observed (Table 5.3.6), a reversed attitude has been demonstrated for abortion in case of other reasons such as unwanted pregnancy, overcrowded families, unaffordability of a new child because of being economically poor, undesired sex of foetus, and early stages (less than three months) of foetus development (Table 5.3.6). The highest degree of disagreement has been demonstrated by abortion because of foetus sex (84.8 per cent). In general whereas about 51 per cent of the respondents agreed with abortion practice, nearly 44.8 per cent displayed their disagreement in this regard (Table 5.3.6).

In terms of the respondents' attitudes towards the effects and side effects of contraceptives, the findings state the sample's agreement rather than their disagreement for almost all items. Contraceptives' side effects, over mothers and foetus' health rejected by about 70 and 56 per cent of the respondents respectively (Tables 5.3.7). A high proportion (60 per cent) of the respondents also disagreed with unreliability attributed to contraceptives (Table 5.3.7). Contraceptives' disease prevention characteristics approved by about 51 per cent of the respondents, while relative infecundity as the result of contraceptive usage and their side effect disagreed by 49.6 per cent of the study population (Table 5.3.7). On the whole positive attitude (67.3 per cent agreement) toward contraceptives has been revealed by the respondents (Table 5.3.7).

Tables 5.3.10 represents the respondents attitudes toward sex (son) preference through items developed and in general as well. Among items while keeping family's reputation (item, 1), costing less than girls (item, 2), being a source of income (item, 3), being a source of emotional support for family's females (item, 4) and having lesser degree of vulnerability in society in comparison with that of girls (item, 8) have demonstrated a negative attitude towards son preference, mothers reliance on sons in the absence of father and after his death (item, 5), his necessity for religious purposes (item 7) and boy as an insurance for old age (item, 6), have developed a positive attitude towards the issue. On the whole agrees and disagrees with son preference constitute 39 and 50 per cent of the study population respectively (Table 5.3.10). This disagreement seems to be consistent with sex preference rejection in abortion scale.

4- Policy- related characteristics of the sample

The study has shown a reasonably high level of knowledge of birth control methods among the respondents. Findings reveal that about 74 per cent of the study population are familiar with at least one traditional and one modern method of contraception. While Pill, IUD and Condom were well known by the respondents, two traditional (rhythm and breast feeding) and three modern (Injectables, Minipills, and Norplant) methods were less known (Table 5.4.1).

Among methods Intra Uterine Device, Pill and Condom have frequently (40.7, 26.9, and 23.1 per cent respectively) been used by the respondents while traditional methods include less than one per cent of all responses (Table 5.4.3). Modern methods also have been indicated as preferred methods of contraception by the respondents. I.U.D, Pill and Female sterilization are observed as the first, second and third preferred methods in the first choice. At the second choice I.U.D. retained its top priority but the other two methods' positions reversed (Table 5.4.3).

However, "wanting no more children" together with "spacing" is considered as the main purposes of contraceptive users in this study. Other purposes such as "husband's satisfaction", "pleasure" and even "health" do not include more than six per cent of the responses (Table 5.4.4).

The main sources of information on contraception were health workers (32.6 per cent), friends (21.7 per cent), media (16.8 per cent).and husbands (14.3 per cent). The other sources of information were less effective. The least effective sources have been indicated as "religious sources" with zero, "parents" with four and "educational centres" with eight per cent (Table 5.4.2).

Distribution of the sources of information widely varies with that of the respondents' advisors for contraceptive use and their first consultant in case

of pregnancy and reproductive system's problem. "Husbands", "health workers" and "friends" have been indicated as most promising advisors, while "religious sources", "educational centres" and "media" have remained the least involved agents in this area (Table 5.4.2).

Most of the respondents have stressed "husband" and "health workers" as their first consultants (respectively) in case of a reproduction system's related problems. These two include about 90 per cent of all responses. "parents" and "friends" are the next priorities in this respect. "religious sources" and "educational centres" with (zero and . 5 per cent of all responses) have been regarded as the least and less active reference respectively (Table 5.4.2).

CAPTER SIX

Statistical analysis

This chapter has been designed to present associations discovered in the analysis of data between dependent and independent variables together with possible effects of independent variables on dependent variables. For this purpose, all variables were categorized in nominal, ordinal and interval categories, according to the nature of collected data. This classification helps to determine the required statistical methods for measuring associations and differences between means.

The chapter includes the statistical methods which have been employed to measure reliability of the study instrument and explore collected data. The chapter is arranged as follows:

- 6.1 Reliability measurement
- 6.2 Chi-Square test
- 6.3 Analysis of variance
- 6.4 Multiple regression
- 6.5 Stepwise regression

6.1 Reliability

Theoretically reliability of an instrument is usually considered as a function of the number of independent measures. It seems plausible that the true value of a particular phenomenon should increase as the number of independent variables increase for a given level of reliability of measurement (Rossi, et al. 1983). For this purpose, various independent variables have been taken into account (Questionnaire, Appendix, F, and G).

Three scales have been employed in this study in order to measure attitudes towards abortion (scale, 1), attitudes towards contraceptives (scale, 2), and attitudes towards son preference (scale, 3) in the study sample. For each scale, two Tables have been provided in order to display the internal consistency between its items as well as between the items and the total score, and “coefficient alpha” as a generalized formula for the reliability of each scale. The following Tables display the fore- mentioned computations.

TABLE 6.1.1
Attitude scaled items towards abortion: Intercorrelations (n=406)

Items	X1	X2	X3	X4	X5	X6	X7	X8
X 1- The necessity of abortion because of mothers' health	1							
X2- The necessity of abortion for deformed foetus	.62**	1						
X3- Abortion as a solution for unwanted pregnancy	.20**	.27**	1					
X 4- The necessity of abortion for qver-crowded families	.20**	.28**	.72**	1				
X 5- The necessity of abortion for poor families	.20**	.25**	.63**	.80**	1			
X 6- The necessity of abortion for undesired sex	.03	.02	.33**	.34**	.30**	1		
X 7- Abortion for foetus is less than three months	.21**	.23**	.50**	.60**	.58**	.42**	1	
X 8- Total scaled score	.46**	.51**	.80**	.86**	.82**	.49**	.76**	1
**P<.01	*P<.05							

TABLE 6.1.1.1		
Attitudes towards abortion (Alpha coefficient)		
Number of cases	Number of items	Alpha coefficient
406	7	.87**
**P<.01	*P<.05	

TABLE 6.1.2

Attitude scaled items towards contraceptives : Intercorrelation (n=406)

Items	X1	X2	X3	X4	X5	X6
X1- Contraceptive might damage mothers' health	1					
X2- Contraceptive might deform foetus	.50**	1				
X3- Contraceptives are unreliable	.30**	.24**	1			
X4- Contraceptives have disease prevention characteristics	-.03	.03	-.04	1		
X5- Contraceptive usage might cause infertility	.23**	.24**	.13**	-.03	1	
X6- Total scaled score	.71**	.69**	.58**	-.33**	.58**	1

**P<.01 *P<.05

TABLE 6.1.2.1

Attitudes/perceptions towards contraceptives

Number of cases	Number of items	Alpha coefficient
406	5	.80**

**P<.01 *P<.05

TABLE 6.1.3
Attitude scaled items towards son preference: Intercorrelation (n=406)

Items	X1	X2	X3	X4	X5	X6	X7	X8	X9
X 1- Boy keeps family name and reputation	1								
X 2- Boy cost less than girl	.51**	1							
X 3- Boy is an income source for family but girl not	.49**	.67**	1						
X 4- Boy is the source of emotional support for his mother and sisters	.47**	.48**	.54**	1					
X 5- Mothers rely on a boy in the absence of fathers particularly after fathers' death	.42**	.34**	.40**	.56**	1				
X 6- Boy is insurance for old age	.46**	.49**	.57**	.58**	.57**	1			
X 7- Boy is necessary for religious ceremonies and purposes	.41**	.32**	.41**	.41**	.44**	.55**	1		
X 8- Boy is less vulnerable than girl in society	.33**	.34**	.30**	.29**	.21**	.36**	.19**	1	
X 9- Total scaled score	.72**	.72**	.77**	.76**	.69**	.81**	.66**	.54**	1

**P<.01

*P<.05

TABLE 6.1.3.1
Attitudes towards son preference (Alpha coefficient)

Number of cases	Number of items	Alpha coefficient
406	8	.88**

**P<.01

*P<.05

TABLE 6.1.4
Reliability measurement for all items

Number of cases	Number of items	Alpha coefficient
406	20	.95**

**P<.01

6.2 - Chi-Square test.

Chi- square test is a measure of assessing association between nominal scale variables (Wright, 1979). It is also suitable for other kinds of data (ordinal, interval, ratio-scale) and has a nonparametric characteristic. This means that, it can be conducted regardless of the normality of the distribution of the population from which the sample has been taken (Hindle, 1994). A large value of Chi- Square relative to the degrees of freedom signifies that the observed and estimated matrices differ to a large degree. It is recommended that the .05 significance level be the minimum accepted (Hair et al., 1992).

Chi- Square test has been conducted between socio - economic variables (educational attainment, occupation, modernization and ownership of residence), demographic variables (residential areas and places of birth), and policy oriented variables such as contraceptive usage, as independent variables on one hand, and attitudinal variables including attitudes towards abortion, contraceptives, son preference, existing and ideal family size as well as perceived family size among other families or in society as dependent variables on the other. Moreover, other relevant variables to the three major attitudes scales have been taken into account in this regard. For example Chi-square test has also been implemented between the independent variables and couples' perceptions about pregnancy prevention measurments (relevant to abortion and contraceptive use), ideal age of marriage and level of education

for boys and girls (relevant to son preference), and age at marriage and duration of marriage (relevant to family size).

In the following pages, Table A, as a reference presents the summary of the results of this statistical computation between the above mentioned variables. Then, in order to be concise, associations between selected socio-economic variables as a sample and the attitudes are presented in detail through Tables 6.2.1- 6.2.4.

TABLE A
Chi-Square among independent and dependent variables

Dependent variables:

A = Existing family size
D = Attitudes towards abortion
G = Desired level of education for boy
J = Preferred person to contraceptive usage
M = Age at marriage
P = Education

B = Ideal family size (IFS)
E = Attitudes towards contraceptive
H = Desired level of education for girl
K = Opinion about pregnancy prevention
N = Duration of marriage

C = (IFS) among “other families”
F = Attitudes towards son preference
I = Preferred age of marriage for boy
L = Husbands opinion about pregnancy prevention
O = Modernization

Chi - Square	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Residential area	-	-	*	*	*	*	*	*	*	-	*	*	*	*	*	-
Modernization	-	-	-	-	*	*	-	-	-	-	*	-	-	-	-	-
Respondent educational attainment	*	*	-	-	-	*	-	-	-	*	-	-	-	-	-	-
Ownership of residency	*	*	*	-	-	-	-	*	-	-	-	-	*	*	-	-
Place of birth	*	-	-	-	-	*	-	-	*	-	-	-	-	*	-	-
Contraceptive usage	-	-	-	-	-	*	-	*	-	-	*	*	*	*	-	-
Respondent occupation	-	-	-	-	*	*	-	-	*	-	-	*	*	*	-	*
Husbands' educational attainment	-	-	-	-	*	*	-	-	-	-	-	-	-	-	-	-

*P<.05

As Table A reveals, residential area has frequently been associated with “ideal family size”, “perceived ideal family size among other families”, “attitudes towards abortion, contraceptives, and son preference” as well as other relevant factors as coded G, H, I, K, L, M, N, O. This is because socio-economic characteristics of populations or groups occasionally are summarized in the residential area. In other words, different social groups locate in different parts of a city. This characteristic of population distribution is more pronounced in metropolitan areas, such as Tehran.

6.2.1 Existing, ideal, and perceived family size

Among the variables, respondents’ place of birth, educational attainment, and ownership of residency have displayed significant associations with the number of children in the respondents’ family. The last two variables, educational attainment and ownership of residence, have also shown a significant association with ideal family size. ‘Residential area’ and ‘ownership of residence’ have demonstrated an association with ‘perceived family size’ among other families/society. It can be concluded that ‘family size’ and attitudes towards it in terms of, either ideal, or perceived ideal in society’ are integrated by socio-economic (education, ownership) as well as demographic (place of birth, residential area) variables. Table 6.2.1, as an example, displays Chi-Square test results and significance level for the association between ownership of residence and existing family size.

TABLE 6.2.1

Percentage distribution of number of children of the respondents by their ownership of residency

Owner ship Number of children	Private F & percent	Rental F & percent	Organizational F & percent	Free of charge F & percent	Other F & percent	Totals F & percent
1	(n = 29) 18.47%	(n = 58) 39.73%	(n = 3) 21.43%	(n = 7) 50%	(n = 15) 75%	(n = 112) 31.91%
2	(n = 55) 35.03%	(n = 56) 38.36%	(n = 6) 42.86%	(n = 4) 28.57%	(n = 3) 15%	(n = 124) 35.33%
3	(n = 41) 26.11%	(n = 23) 15.75%	(n = 1) 7.14%	(n = 3) 21.43%	(n = 1) 5%	(n = 69) 19.66%
4	(n = 18) 11.46%	(n = 6) 4.11%	(n = 2) 14.29%	(n = 0) 0%	(n = 1) 5%	(n = 27) 7.69%
5	(n = 9) 5.73%	(n = 3) 2.05%	(n = 1) 7.14%	(n = 0) 0%	(n = 0) 0%	(n = 13) 3.7%
6	(n = 3) 1.91%	(n = 0) 0%	(n = 1) 7.14%	(n = 0) 0%	(n = 0) 0%	(n = 4) 1.14%
7	(n = 2) 1.27%	(n = 0) 0%	(n = 0) 0%	(n = 0) 0%	(n = 0) 0%	(n = 2) .57%
Totals	(n = 157) 100%	(n = 146) 100%	(n = 14) 100%	(n = 14) 100%	(n = 20) 100%	(n = 351) 100%

Total Chi-Square = 57.84

Contingency Coefficient = .376

DF = 24

p = .0001

According to Table 6.2.1 a significant association at 95% level between ownership of residence as an influential socio-economic factor and number of children as an index of fertility is apparent. Ideal family size and perceptions of the respondents about desired number of children among “other families” have been associated significantly with ownership of residence. In order to be concise, only contingency coefficient, degree of freedom (DF), and Chi-square for each variable are presented.

1- The result of Chi-square test for association between ownership and ideal family size of the respondent.

Chi- Square = 34.182 DF = 20
Contingency Coefficient = .283 p<.05

2- The result of Chi-square test for association between ownership and desired number of children by “other families”.

Chi- Square = 42.565 DF = 24
Contingency Coefficient = .167 p<.01

Ownership of residence is an appropriate economic index of household’s economy. It is more reliable than income or other sensitive indices which respondents are usually reluctant to reveal.

6.2.2 Attitudes towards abortion

Residential area is the only variable which has demonstrated a significant association with attitudes towards abortion. Table 6.2.2 displays Chi-Square test and percentage distribution of the respondents by residential area and by their attitudes towards abortion.

TABLE 6.2.2
Distribution of residential areas and attitudes towards abortion

Residential area Attitudes	North	Centre	South	Total
Strongly agree	4.9% n=6	7.3% n=9	.6% n=1	3.9% n=16
Agree	22.9% n=28	21.7% n=26	17.5% n=28	20.2% n=82
Indifferent	24.6% n=30	35.5% n=44	31.9% n=51	30.8% n=125
Disagree	45.1% n=55	30.6% n=38	46.2% n=74	41.1% n=167
Strongly disagree	2.5% n=3	5.6% n=7	3.7% n=6	3.9% n=16
Total	100% n=122	100% n=124	100% n=160	100% n=406

Chi-Square = 18.2 DF = 8
Contingency Coefficient = .207 p<.05

Table 6.2.2 demonstrates a significant association between residential area and attitude towards abortion.

6.2.3 Attitudes towards contraceptives

Attitude towards contraceptives was found to be associated with residential area of the respondents. Husbands' educational attainment also has demonstrated a significant association with the respondents' attitudes towards contraceptives. This in itself may reveal the influence of males over fertility control decision making in the households and their responsibility for family size regulation. At the same time it might be considered as the effect of education in a gender structured household which weakens traditional values and welcomes fertility control as basically a western idea and product

(Caldwell, 1982). Table 6.2.3 displays Chi-Square computations for residential area and attitudes towards contraceptives.

TABLE 6.2.3
Distribution of residential areas and attitudes about contraceptives
‘Please see print copy for image’

Chi-Square=16.7 DF = 8
Contingency Coefficient = 0.2 p<.05

The summary of results of Chi-Square test for husbands’ educational attainment and attitudes toward contraceptives.

Chi-Square= 29.071 DF = 18
Contingency Coefficient = .26 p<.05

Table 6.2.3 demonstrates a significant association between residential area, husbands’ educational attainment and the respondents’ attitudes towards contraceptives. According to these findings, socio-economic variables have significantly affected the attitudes and perceptions of the respondents towards contraceptives.

6.2.4 Attitudes towards son preference.

Attitude towards son preference among the study sample was found associated with the respondents’ residential area, place of birth, occupation and their contraceptive usage. Level of home modernization and spouses’ educational attainment have also demonstrated an association with son preference when this dependent variable has been measured by quartile. Table 6.2.4 presents this association.

TABLE 6.2.4
Distribution of occupation of the respondents and sex-preference

Occupation	Professionals	Para/professionals	Clerk	Salesperson	Laborer	Student/house wife	Total
Attitudes							
Strongly agree	4.3% n=2	9.1% n=1	0% n=0	0% n=0	0% n=0	2.2% n=7	2.5% n=10
Agree	2.1% n=1	27.3% n=3	5.9% n=1	0% n=0	50% n=2	12% n=39	11.4% n=46
Indifferent	25.5% n=12	27.3% n=3	23.5% n=4	0% n=0	25% n=1	38.6% n=125	35.9% n=145
Disagree	53.2% n=25	9.1% n=1	41.2% n=7	100% n=1	25% n=1	36.7% n=119	38.1% n=154
Strongly disagree	14.9% n=7	27.3% n=3	29.4% n=5	0% n=0	0% n=0	10.5% n=34	12.1% n=49
Total	100% n=47	100% n=11	100% n=17	100% n=1	100% n=4	100% n=304	100% n=404

Chi-Square = 33.1

Contingency Coefficient = .275

DF = 20

p= .03

Results of Chi-Square tests on the association of modernization and spouses' educational attainment are as followings:

1 - Respondents' education and son preference,

- Chi-Square= 51.52 DF = 18

- Contingency Coefficient = .336 p<.01

2 - Husbands' education and son preference,

- Chi-Square= 58.119 DF = 18

- Contingency Coefficient = .355 p<.01

3 - Modernization and son preference,

- Chi-Square= 21.022 DF = 6

- Contingency Coefficient = .224 p<.01

Table 6.2.4 shows a significant association between occupational situation of the respondents, their husbands and modernization, with their attitudes toward son preference.

6.3 Analysis of variance (ANOVA)

Analysis of variance (ANOVA) is a procedure for testing the effects of several treatments on different groups simultaneously. The null hypothesis in ANOVA states that the means for different groups are equal in the population. ANOVA is usually conducted to measure differences between means of two or more groups involved in a study. Analysis of variance involves a test statistic referred to as the "F ratio". The larger the ratio, the more likely the experiment had an effect.

Analysis of variance has been conducted to test differences between socio-economic, demographic and policy-oriented variables (as independent variables) on one hand, and existing family size and attitudinal variables, including attitudes towards abortion, contraceptives and son preference, as dependent variables, on the other. Moreover, as it was the case in the Chi-

Square, other relevant variables to the three major attitudes scales have also been taken into account. In the following pages, Table B, as a reference, presents the summary of results of analyses of variance between the above mentioned variables. In order to be succinct, six selected tables of analysis of variance will be presented and, for the rest, only summary of findings are presented. The presented tables will focus on family size, ideal family size, and perceived ideal family size among “other families” as well as attitudes towards abortion, contraceptives and son preference.

TABLE B
Analysis of variance among independent and dependent variables

Dependent variables

A = Existing family size
D = Attitudes towards abortion
G = Desired level of education for boy
J = Preferred age of marriage for boy

B = Ideal family size (IFS)
E = Attitudes towards contraceptive
H = Desired level of education for girl
K = Opinion about pregnancy prevention

C = (IFS) among “other families”
F = Attitudes towards son preference
I = Preferred age of marriage for girl

Analysis of variance	A	B	C	D	E	F	G	H	I	J	K
Residential area	-	*	*	*	-	-	*	*	-	*	*
Modernization	-	-	*	*	-	*	*	*	*	*	*
Respondent educational attainment	*	*	-	*	-	*	*	*	*	*	-
Marriage age cohort	*	*	-	-	-	-	-	*	-	-	-
Respondent occupation	*	*	-	*	-	*	-	*	-	*	-
Ownership of residency	*	*	-	-	-	-	-	-	-	*	-
Place of birth	*	-	-	*	-	*	-	-	-	-	-
Contraceptive usage	-	-	-	-	-	-	-	-	-	-	*
Duration of marriage	*	-	-	-	-	-	*	*	*	-	-
Duration of residency in Tehran	*	*	*	-	-	-	-	-	-	-	*
Husbands' residency duration	*	-	-	-	-	-	*	*	-	-	-
Husbands' place of birth	-	*	-	-	-	*	-	-	-	-	-
Husbands educational attainment	-	*	-	-	-	-	-	-	-	-	-
Husbands' occupation.	-	-	-	-	*	*	-	-	-	-	-

*P<.05

6.3.1 Existing family size

Among all variables, educational attainment, marriage age cohort, ownership of residence, place of birth, duration of marriage and residence in Tehran differentiated existing family size among the respondents. According to findings from analysis of variance, family size of respondents with high and middle level of educational attainment is significantly different from that of respondents with low level educational attainment ($p=.0001$). A similar pattern has been observed between the respondents' marriage age cohort on one hand and their family size on the other. Respondents in all marriage age cohorts have demonstrated a significant difference in terms of their existing family size ($p=.0001$).

The ownership of residence as an index of socio-economic situation of households was also recognized as a differentiating factor for family size of the respondents. Respondents who owned their residence have displayed a different family size from those who rent their residence and those classified as 'other' ($p=.0001$). No significant difference in terms of existing family size was observed between the last two categories.

In conjunction with duration of residency in Tehran, it can be said that the longer the duration the larger the differences in family size. In other words difference in mean family size is significant ($p=.0001$) between the respondent with more than 20 years residency in Tehran and those who have lived there for less than 20 years.

The analysed factors reveal that socio-economic and demographic variables employed in the study significantly interact with the respondents' reproductive behaviour. Table 6.3.1., as an example of the above mentioned relationships, presents the results of ANOVA between ownership of residence and the existing family size of the respondents.

TABLE 6.3.1
Analysis of variance for ownership of residence and family size

Source:	DF:	Sum Square:	Mean square:	F- test
Between groups	2	45.84	22.92	17.42
Within groups	348	457.71	1.31	p = .0001
Total	350	503.54		

Group:	Count:	Mean:	Std. Dev	Std. Error
private	157	2.62	1.29	.10
rental	146	1.90	.95	.80
other	48	1.85	1.18	.17

Comparison:	Mean Diff:	Fisher PLSD:	Scheffe F- test	Dunnett t:
private vs. rental	.71	.26*	14.6	5.4
private vs. other	.76	.37*	8.15	4.04
rental vs. other	.05	.37	.03	.26

*p<.05

As it is apparent from Table 6.3.1, the mean number of children of the respondents' families significantly differ by ownership of residence .

6.3.2 Desired family size

In terms of desired family size, residential areas (regions), educational attainment, marriage age cohort, ownership of residence, occupation, duration of residence in Tehran, together with place of birth and educational attainment of husbands demonstrate significant differences. Table 6.3.2 demonstrates the results of analysis of the relationship between education attainment and desired number of children.

TABLE 6.3.2
Analysis of variance for educational level of the respondents and attitudes
towards Ideal family size

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between group	2	21.97	10.98	15.27
Within group	395	284.2	.72	p= .0001
Total	397	306.17		

Educational level

Group:	Count:	Mean	Std. Dev:	Std. Error
Low	109	2.74	1.11	.11
Middle	233	2.24	.71	.05
High	56	2.14	.80	.11

Comparison:	Mean difference:	Fisher PLSD:	Scheffe F-test:	Dunnnett t:
Low vs. Middle	.50	.19*	13*	5.10
Low vs. High	.60	.27*	9.30*	4.30
Middle vs. High	.10	.248	.30	.77

*p<.05

Table 6.3.2 indicates that there is a significant difference at 95% confidence limit between desired number of children among respondents who attained Middle and High level of education and the respondents with low level of educational attainment on the other. No significant mean difference has been observed between Middle and High level educated respondents in terms of desired number of children. If educational attainment levels are categorized in six categories as it is the norm in Iran, a constant decrease in the mean number of desired children is observed as level of education increases. In this categorization, 3 and 2.6 children respectively have been reported as desired number of children for the respondents with elementary and guidance

educational level while “post diploma” and “diploma” achievers have displayed similar mean for desired number of children (2.2). The same mean number of desired children has also been reported for the respondents with a bachelor degree and higher (2.1).

6.3.3 Perceptions about desired number of children among “other families”, or in “society”

The most influential variable on perception about desired family size in society was residential area. Modernization and duration of residence in Tehran also were recognized as other determinants of this perception (Table B). Table 6.3.3 exhibits findings from an analysis of variance of residential areas and the perception about desired family size in society.

TABLE 6.3.3
Analysis of variance for residential areas and
perception about desired family size among “other families”

Source:	DF:	Sum Square:	Mean square:	F- test
Between groups	2	15.632	7.816	9.087
Within groups	385	331.159	.86	p = .0001
Total	387	346.791		

Summary statistics by residential areas

Group:	Count:	Mean:	Std. Dev	Std. Error:
North	117	2.504	.887	.082
Centre	115	2.252	.647	.06
South	156	2.737	1.114	.089

Comparison:	Mean difference:	Fisher PLSD:	Scheffe F-test	Dunnett t:
North vs. Centre	.252	.239*	2.14	2.10
North vs. South	-.233	.223*	2.11	2.05
Centre vs. South	-.485	.224*	9.05	4.25

*P<.05

According to Table 6.3.3 perceptions of the respondents from different residential areas of Tehran differ significantly in terms of means of desired family size among “other families”. The Table demonstrates that respondents from the North, Centre and South area of Tehran have different suppositions about the ideal family size in their community. As it has been stated in previous pages this can be considered as the result of different socio-economic factors (such as high level of education, occupation, modernization and income) which are recognizable under the heading of residential area. Thses factors are known as basic motives for “social mobility” which is indicated by “local or geographical mobility”(changing residential area) and is recognized as a factor with strong impact on fertility (Zimmer, 1981).

6.3.4 Attitude towards abortion

Residential areas, level of education, occupation and place of birth are four variables which are important discriminators of attitudes towards abortion. Table 6.3.4 displays analysis of variance results and the level of difference in terms of occupation and attitudes towards abortion.

TABLE 6.3.4
Analysis of variance for respondents' occupation
and attitudes towards abortion

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between group	1	4.69	4.69	5.34
Within group	404	354.52	.88	p = .02
Total	405	359.20		

Summary statistics by respondents' occupation

Group:	Count:	Mean:	Std.Dev:	Std.Error:
House wife	314	3.27	.94	.05
Employee	92	3.01	.93	.10

Comparison:	Mean difference:	Fisher PLSD:	Scheffe F-test	Dunnett t:
House-wife vs. Employee	.26	.22*	5.34*	2.31

*p<.05

According to Table 6.3.4 attitudes of the respondents towards abortion differ significantly according to their occupation. In other words, respondents with a paid job outside the home have demonstrated different attitudes towards abortion from those who are classified as housewives. In terms of the effects of type of occupation on attitudes towards abortion among the respondents, an analysis of variance test was conducted using ASCO model of occupation classification. The difference remained significant at 95% confidence level between para-professionals and housewives as well as between clerks and housewives.

6.3.5 Attitudes towards Contraceptives

None of the independent variables was found to produce a significant difference between means of responses on attitudes towards contraceptives. The only intermediate variable which demonstrated a significant relationship with attitudes towards contraceptives, was son preference. Table 6.3.5 demonstrates this difference.

TABLE 6.3.5
Analysis of variance for son preference and
attitudes towards contraceptives

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	4	14.196	3.549	8.357
Within groups	395	167.742	.425	p = .0001
Total	399	181.938		

Summary statistics by attitudinal group

Group:	Count:	Mean:	Std. Dev	Std. Error
Agree	57	2.40	.78	.10
Indifferent	144	2.33	.71	.60
Disagree	199	2.62	.59	.04

Comparison:	Mean difference:	Fisher PLSD:	Scheffe F test	Dunnett t:
Agree vs. Indifferent	.07	.20	.23	.68
Agree vs. Disagree	-.22	20*	2.40	2.20
Indifferent vs. Disagree	-.30	.14*	7.98	4.00

*p<.05

According to Table 6.3.5 the respondents who agree with son preference differ significantly from those who disagree. In a five point scale respondents

who agree very strongly with son preference have demonstrated a significant difference with all four other ranks in terms of perceptions about contraceptives and their usage. Safety, reliability and effectiveness of contraceptives were criteria for specifying the respondents' perceptions about contraceptives (Chapter two).

6.3.6 Attitudes towards son preference

Analysis of variance has revealed that occupation, education, modernization, place of birth of the respondents, as well as occupation and place of birth of the husbands, interact significantly with son preference.

A significantly different attitude towards son preference has been observed among the respondents in terms of their occupation as well as type of employment. "House-wives" vs "employees" in general and professional vs "labourers", and "housewives and student", in particular are as groups with significant difference in attitudes towards son preference.

In terms of husbands' occupation and its relevance to the respondents, attitudes towards son preference, analysis of variance has revealed that the occupation of the husbands is an important factor with respect to attitudes of the respondents towards son preference. According to the analysis, the attitudes of wives of professionals, paraprofessionals and trade persons towards son preference were significantly different from that of wives of salesperson, plant and machine operators, drivers, and labourers. In summary it can be said that the respondents whose husbands have high status jobs have different attitudes from those whose husbands worked in low status jobs towards son preference. Husbands' occupation is a major determinant of socio-economic status of the family and attitudes towards son preference are influenced by socio-economic status.

Place of birth of both respondents and their husbands have been recognized as influential factors in attitudes of respondents towards son preference. The couples who have been born in ‘Tehran’ and ‘other cities’ have demonstrated a significantly different attitude towards son preference from those who have been born in ‘rural areas’. The analysis displays the impact of urbanization on fertility attitudes since even couples born in a small town demonstrate similar attitudes to capital city (Tehran) born couples.

‘Education’ and ‘modernization’ were the other variables which differentiated attitudes of the respondents towards son preference. According to findings from the analysis of variance, low level educated and low level equipped respondents significantly differ from ‘middle level educated and moderately equipped respondents in attitudes towards son preference. The level of significance for all computations was 0.05%. As an example Table 6.3.6 indicates the respondents’ attitudes towards son preference in relation to their occupation.

TABLE 6.3.6
Respondent occupation and attitudes towards son preference

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	6.32	6.32	7.4
Within groups	402	344.05	.86	p=.007
Total	403	350.40		

Group:	Count:	Mean:	Std. Dev:	Std. Error:
Housewife	313	3.4	.91	.05
Employee	91	3.7	.97	.10

Comparison:	Mean difference	Fisher PLSD:	Scheffe F-test:	Dunnett t:
Housewives vs. Employee	-.30	.22*	7.38	2.71

*p<.05

Table 6.3.6 indicates that there is a significant difference between means of respondents on attitudes towards son preference.

6.4 Multiple Regression

Multiple regression analysis can be used to analyse the relationship between a single dependent variable and several independent variables. The objective of multiple regression analysis is to use the independent variables whose values are known to predict a single dependent value (Hair et al. 1992). In the literature the status of women's has been introduced as a highly influential factor on fertility and family size. Various measures and factors have been taken into account as women's status criteria and indices (Chapter two). By convention, educational attainment and occupation have been recognized as determinants of women's status. These two variables, as a compound factor, have been employed to measure the relationship and effect of women's status on a variety of dependent variables. However, since women are the core of this study, and their status constitutes one of the hypotheses of the study. Multiple regression analysis conducted in order to measure and determine the relationship and effects of this factor on dependent variables of the study. The following tables demonstrate the effects and relationship of women's status with dependent variables of the study.

TABLE 6.4.1

Multiple regression for women's status and dependent variables

Dependent variables	Count	R	R ²	Adj-R ²	DF	F-test	P
Existing family size	355	.40	.16	.155	2	33.5	.0001**
Ideal family size	398	.24	.06	.55	2	12.48	.0001**
Attitudes towards abortion	406	.13	.02	.01	2	3.60	.02*
Attitudes towards contraceptives	401	.06	.004	.001	2	.80	.45
Attitudes towards son-preference	404	.26	.07	.06	2	14.68	.0001**

TABLE 6.4.1.1
Beta coefficient of multiple regression for independent variables

Dependent variables	Intercept	Coefficient	Std. Err	t- Value	Probability
<u>Existing family size</u>	3.67				
1- Education		-.40	.05	7.86	.0001**
2- Occupation		-.06	.03	2.20	.03*
<u>Ideal family size</u>	3.03				
1- Education		-.18	.04	4.80	.0001**
2- Occupation		-.03	.02	1.49	.14
<u>Attitudes towards abortion</u>	19.60				
1- Education		-.44	.27	1.64	.10
2- Occupation		.14	.15	.97	.33
<u>Attitudes towards contraceptives</u>	15.87				
1- Education		.12	.18	.68	.50
2- Occupation		-.06	.10	.56	.58
<u>Attitudes towards son-preference</u>	20.50				
1- Education		1.5	.31	4.50	.0001**
2- Occupation		.70	.20	.40	.70

**P<.01

*P<.05

According to Table 6.4.1, 'women's status' as a combined variable has significant relationship with 'existing and desired family size', as well as with 'attitudes towards abortion and son preference'. The significant relationship between these variables is strong for existing family size, desired family size, and son preference ($P < .01$), but not as strong for attitudes towards abortion ($P < .05$), although significant. No significant relationship between 'women's status' and attitudes towards contraceptives was observed through multiple regression analysis ($P > .05$).

Lack of a significant relationship between 'women's status and attitudes towards contraceptives' is probably due to government policy which influences the entire population of contraceptive users, regardless of their position in the social structure. This is partly true for the moderately significant relationship between 'women's status and attitudes towards abortion' since, abortion is influenced by government policy and cultural prohibition as well. It means that despite the fact that contraceptives and abortion are both recognized as means of population control, the government has different and somewhat opposite approach to these methods. While abortion is strongly prohibited and is not permissible except under certain circumstances, contraceptive use gains support by the programs implemented.

However, in Table 6.4.1.1 'Coefficient R', as indicator of correlation between the variables indicates only a linear relationship between them (eg. women's status and abortion or contraceptives attitudes), and there could be a very strong and even perfect nonlinear relationship between correlated variables. The 'Coefficient R' is also understood as a measure of the correlation between the observed and predicted value of the dependent variable (Wright, 1979). Therefore, it can be said that 40% of existing family size, 24% of desired family size, 13% of attitudes towards abortion and 26% of attitudes towards son preference are predictable by 'women's status'. As Table 6.4.1 shows, the

larger 'R' corresponds with larger 'F', and if 'F' is large, we will infer that the straight line is of value in predicting the value of dependent variable (Russel, 1995). The 'F' represents the combined effects of independent variables on the dependent.

The proportion of variance which is explained by the independent variable, for each dependent variable has been indicated by 'R²', and more accurately by 'Adjusted R² in the Table 6.4.1

'Beta Coefficient', which has been demonstrated separately for each independent variable in Table 6.4.1.1, allows for a direct comparison between coefficients as to the relative explanatory power of the dependent variable (Hair et al., 1992). According to this Table, education and occupation negatively influence both 'existing' and 'ideal family size'. In each case (dependent variable) 'education' is recognized as much stronger than occupation (Beta: -.40 vs -.06; and -.18 vs -.03 for existing and desired family size respectively). The effect of education on the existing and desired family size is significant ($P < .01$). Occupation also has a significant effect on existing family size ($P < .05$), but not on the ideal family size.

On the whole, except for the occupation effects on 'ideal family size', education and occupation as components of 'women's status' have had expected (negative) and significant effects on current and future fertility (existing family size, desired family size).

In terms of attitudes 'education' negatively affects 'attitudes of abortion' and 'occupation' does so for 'attitudes of contraceptives' (Beta: -.44 and -.06 respectively). Neither 'education' nor 'occupation' has influenced 'son preference' negatively. The effects of the variables on the attitudes can be disregarded since they are small enough (Beta: and t- Value in Table 6.4.1.1)

and not significant except in the case of 'son preference' in which a significant relationship with 'education' has been developed.

In all equations education appears more powerful and more effective than occupation because normally it is the gate for labour force participation and a factor which strongly affects age of marriage and preferences. But basic attitudes (the ones which not depend on policies and short run programs), such as sex preference, may resist in spite of educational development.

In order to take into account the possible influence of husbands' status (education and occupation), on attitudes of the respondents towards abortion, son preference and their perceptions about contraceptives, multiple regression has been conducted between those variables. The results indicate a significant relationship between the husband's status and attitudes towards abortion and son preference, but not to contraceptives.

6.5 Stepwise regression

The stepwise method is an alternative to the simultaneous approach. It involves entering the independent variables into the discriminant function one at a time on the basis of their discriminating power. The stepwise approach begins by choosing the single best discriminating variable. The initial variable is then paired with each of the other independent variables, one at a time, and a second variable is chosen. The second variable is the one that is best able to improve the discriminating power of the function in combination with the first variable. The third and any subsequent variables are selected in a similar manner.

This method is useful when a study intends to consider a relatively large number of independent variables for inclusion in the function. Through this

method the variables which are not useful in discriminating between the groups are eliminated and a reduced set of variables is identified. The reduced set typically is almost as good as, and sometimes better than, the complete set of variables (Hair et al., 1992). This method has been employed for the purpose of recognition of the most powerful discriminant variables for dependent variables of the study. The following tables present the results of this approach.

TABLE 6.5.1
Stepwise regression for desired family size

Summary Information	
F to Enter	4
F to Remove	3.996
Number of Steps	3
Variables Entered	3
Variables Forced	0...0

Number of variables in the equation	R	R ²	% added	F
1 - Existing family size	.46	.21	.21	89.25
2 - Ideal family size of other families	.54	.29	.08	67.78
3 -Opinion about pregnancy prevention	.56	.31	.02	48.50
Total		.31	.31	

P < .05

Desired number of children, or ideal family size has always been difficult to measure (Pollard et al., 1990). However, among all variables, three influential variables have had distinct influence on desired family size of the study sample. As Table 6.5.1 shows, the existing family size is the first variable which has entered into the equation. This variable accounts for 21.5 per cent of variation of desired family size among the respondents. In this step, duration of marriage, opinion about pregnancy prevention, educational

attainment, perceptions about desired family size of “other families” and preferred person (wife or husband) to use contraception, did not enter into the equation.

In the second step, perception of the desired number of children among “other families”, was recognized as a more effective variable and entered into the equation. This variable adds eight per cent to the power of the former variable in explaining variation of ideal family size among the respondents. Together, these two variables explain 29.4 per cent of variation of ideal family size among the sample study. Duration of marriage, opinion about pregnancy prevention, educational attainment, and preferred person to use contraception, did not enter into the equation.

In the third (last) step, opinion about pregnancy prevention entered into the equation and increased explained variation to 31 per cent. The other variables did not enter into the equation.

In summary, ideal family size among the respondents has been influenced by their existing family size and their perceptions about ideal family size among “other families”. In fact, as it has been stated in the previous section (Chapter five), their ideal family size is more than their existing family size and at the same time, less than that of perceived family size among “other families” or “society” It can be seen in moving from the actual family size to the attitudinal context at the individual, and then, at the societal level, that at each step more children are favored. All these characteristics reflect a potential for high fertility that would be a matter of great concern, particularly in the absence of family planning services.

TABLE 6.5.2
Stepwise Regression for Attitudes towards abortion

Summary Information

F to Enter	4
F to Remove	3.996
Number of Steps	3
Variables Entered	3
Variables Forced	0...0

Number of variables in the equation	R	R ²	% added	F
1 - Ideal family size	.21	.04	.04	15.81
2 - Attitudes towards contraceptive	.24	.06	.02	10.43
3 - Residential area	.27	.07	.01	8.60
Total		.07		

P< .05

According to Table 6.5.2 desired number of children sits in the first step and explains 4.4 per cent of variation on attitudes towards abortion among the respondents. In the second step, attitudes towards contraceptives entered into the equation and increased explained variation to 5.8 per cent. In the third (last) step, residential area, as a dummy variable, entered into the equation and the total variation explained by these three variables equalled 7.1 per cent. It was supposed that, existing family size might be an influential variable in determining attitudes towards abortion, particularly when the actual family size exceeds ideal family size. But existing family size did not enter into the equation and the supposition was not supported.

The issue of abortion has been treated very differently from other medical issues related to fertility and fertility control behaviour in the literature. It has been considered as a matter of conscience, politics, crime and clandestine activities. It has been prohibited in some cultures, religions and laws. Therefore, most of the time, it has been performed in backyards (Holt, 1992;

Ghazi and Deborah, 1988). Since most of the factors indicated above are influential at a societal level, all individuals are affected by them. Consequently, differences in individual level are minimized. However, these peculiarities, seem to be persuasive enough to prevent attitudes of abortion to be expressed freely and impartially, particularly in a society with strong religious values.

TABLE 6.5.3
Stepwise Regression for Attitudes towards son preference
 Summary Information

F to Enter	4
F to Remove	3.996
Number of Steps	2
Variables Entered	2
Variables Forced	0...0

Number of variables in the equation	R	R ²	% added	F
1- Educational attainment of the respondent	.40	.16	.16	46.59
2 - Attitudes towards contraceptive	.45	.20	.04	30.85
Total		.20		

P< . 05

According to Table 6.5.3 the educational attainment of the respondents, has displayed a great effect on the attitudes of the study sample towards son-preference. This variable, when enters into the equation as the only variable, explains 20.2 per cent of variation of attitudes towards son preference, but together with attitudes towards contraceptives, as an intermediate variable, explains 16.2 per cent of variation at the first step. In this step, neither existing family size, ideal family size, ideal family size of “other families”, nor having a son and attitudes towards contraceptives, entered into the equation.

In the second step, attitudes towards contraceptives entered in the equation and added 4.3 per cent to the explained variation. On the whole, 20.5 per cent of variation of attitudes towards son preference is explained by these two variables. The other variables did not enter into the equation.

TABLE 6.5.4
Stepwise regression for attitudes towards fertility (existing family size)

Summary Information	
F to Enter	4
F to Remove	3.996
Number of Steps	3
Variables Entered	3
Variables Forced	0...0

Number of variables in the equation	R	R ²	% added	F
1 - Duration of marriage	.79	.62	.62	563.44
2 - Educational attainment	.81	.66	.04	340.55
3 - Ideal family size	.82	.68	.02	244.73
Total		.68		

$P < .05$

As Table 6.5.4 demonstrates, duration of marriage is the first variable which entered into the equation. This variable merely represents 62 per cent of the variation in present size of the respondents' families. The strength and importance of this variable is due to its specific characteristics which include early age of marriage and prolonged coexistence in wedlock boundaries. The exclusiveness of sexual activities for married life, and the early marriage which include almost the whole period of child bearing ages, can explain a major part of the variation in existing family size of the respondents.

At the second step education, which can affect age of marriage and consequently duration of married life, has displayed an important function and

has increased explained variation to 66.4 per cent. As is apparent, education itself has only added 4.4 per cent to the power of duration of marriage in explaining variation in existing family size among the respondents.

In the last step ideal family size entered into the equation and 68.1 per cent of variation in existing family size of the respondents was explained. It is worth noting that, by adding son preference as an intermediate variable to the three above mentioned variables, 69 per cent of the variation of existing family size has been explained.

CHAPTER SEVEN

DISCUSSION AND CONCLUSION:

7.1 Introduction

Human fertility is a complex process responsible for the biological maintenance of society, since in almost all societies the birth of a baby as the outcome of fertility process, symbolizes the regeneration of the community (Kitzinger, 1989). Levels of fertility vary across different societies. A high level of fertility persists among the developing countries and an unprecedented increase in the population of the developing countries is causing much alarm in the world because of its potential threat to economic resources and human survival in the long run. Understanding of the factors associated with fertility levels and behaviour is a pre-requisite in order to regulate fertility levels in developing countries. A comprehensive knowledge of the determinants of fertility will help in effective implementation of programs facilitating the promotion of a small family norm, and consequently, making achievable an appropriate balance between population growth and resources (Reddy, 1986).

The problem is not that fertility behaviour is mysterious or inaccessible to rational analysis. It is that its determinants need to be understood in specific settings: social, economic, institutional, and cultural. The course of fertility over time needs to be related to changes in those settings (Mukerji, 1988).

Most studies have considered urban population as a single unit without stratifying the population into groups with distinct and similar characteristics. Also not much attention has been paid to the study of psychological correlates of urban fertility in the Iranian context. The present study has been

undertaken to bridge some gaps in our knowledge of urban fertility. In this study, urban refers to Tehran: the capital city of Iran.

The aim of the present study was to investigate the common determinants of fertility behaviour of the sample in different regions of Tehran. The study focused on testing hypotheses, most connected with the relationship of social or psychological factors to both practice of contraception and the size of the family. Demographic, socio-economic and attitudinal factors were employed in order to investigate and determine the strength and importance of these factors in affecting fertility and fertility control behaviour of the respondents. Attitudinal and intermediate variables were emphasized because of their direct effects on the behaviour of the respondents (Tashakkory, et al., 1987; Ajzen and Fishbein, 1980; Bongaart, 1985 and 1978).

Three major attitudinal scales were included in the study: abortion as signifying the strongest attitude and as an instrument of fertility control, son preference as one of the most pronounced desires for fertility, and contraceptive acceptability as a mediator between fertility and fertility control. For each of these subjects, a specific scale was developed and altogether 20 items were employed to measure the attitudes of the respondents relevant to the scales. Strong correlation was observed between items of these scales ($P < .01$) (see also Reliability in Chapter Six).

Modernization, as it was measured by level of modern goods consumption (see methodology), was also included in the study as an indicator of socio-economic status and psychological characteristics of the respondents (Reddy, 1986). Further, socio-economic and demographic characteristics of husbands, such as educational attainment, occupation, 'place of birth' and 'duration of residency in Tehran' were taken into consideration for three reasons. The first reason is that the study of couples in the analysis of fertility behaviour has

been advised (Dodoo, 1993). The second is that these variables are known as important in decisions about 'family size' particularly in developing and patriarchal societies (Boserup, 1990). And thirdly, they have been indicated as the most influential variables in the respondents' fertility control and contraceptive behaviour (Table 5.4.2). Therefore, according to 'reasoned action theory', they were recognized as 'subjective norms' that strongly affect attitudes and behaviour (Ajzen and Fishbein, 1980).

The relationships between independent variables and fertility were examined one by one. Since fertility behaviour is determined by the simultaneous operation of a wide range of psychological, socio-cultural, economic and demographic factors at a given point of time, the relative contribution of each of these factors in the explanation of fertility behaviour and relevant attitudes cannot be assessed correctly unless they are examined together. Therefore, multiple step-wise regression analysis was conducted in order to estimate the amount of variance in fertility behaviour that can be explained by each of the independent variables separately and collectively.

Statistical results of the study have been organized in three levels. At the first level the association between dependent and independent variables was studied. The second level utilized to Analysis of Variance to determine mean differences among attitudes and family size of the respondents. At the third level, multiple and stepwise regression were conducted in order to predict and measure the effect of independent variables on dependent variables.

In this chapter, the focus is on the analysis and explanation of the independent and dependent variables' relationships in conjunction with empirical findings of the study, literature and hypotheses.

7.2 General outlook

The present study has been conducted in Tehran, the capital city of Iran. Iran has experienced two distinct, pre and post revolutionary periods in this century. The first was the period which is called the period of Westernization in which the first stages of socio-economic development occurred. This period was ended in 1979 by the Islamic revolution victory over the Pahlavi regime. The second period is known as the post-revolutionary era (since 1979 onward) in which Islamic teachings and values govern the society. In both periods Islam has been considered as dominant religious power and has played a determining role in almost all of the historical events of the country.

The most important result of this study has been to advance our understanding of the relationship between demographic, socio-economic, attitudinal and policy oriented variables with fertility behaviour of the sample in terms of current fertility, future fertility, and family planning or fertility control strategies. This is of great significance since understanding fertility increases our knowledge about a universal institution, the family, and is likely to enlarge our understanding of not only a major portion of all demographic behaviour, but a fundamental element in social structure and the human condition generally (Day, 1984; UN, 1970). Moreover, a better understanding of fertility behaviour may result in insights relevant to a wide range of social and economic behaviour, patterns and changes such as labor force participation, income distribution and educational aspirations for children (Ghazi and Deborah, 1988).

Despite the existence of a civil code before the Islamic revolution, family formation was highly influenced by Islamic rules. A patriarchal, hierarchical, sex segregated and male dominated structure has been attributed to family of Islamic countries including Iran. It has been argued that within such a

structure, women, as the core of family, are positioned with lower status are economically dependent and are socially secluded. Powerful norms of seclusion extended to labor markets and educational systems, limiting women's opportunities for independent income generation. On the whole, families are characterized by sex, age and social status hierarchies which interact with each other and affirm patriarchal structure (Cain, 1984; Moghadam, 1990; Aghajanian, 1992; Youssef, 1980).

It is believed that within this structure early, universal and fruitful (productive) marriage is expected, encouraged, and marriage itself becomes the ultimate goal for women (Pakizegi, 1980). Therefore, celibacy is prohibited (see literature review, Islamic section). In addition, because of economically dependent positions of women they prefer to deliver sons rather than daughters since economic opportunities are more adequately provided for males than females. It has been asserted that, in reality, a woman's progression through life in these societies is marked by the successive transfer of her dependency from one category of male to another: father, husband, and finally son (Cain, 1988). However, sex preference is also recognized as a factor providing higher fertility. Considering these characteristics together, it is assumed that effective contraceptive usage in such communities is less likely or might be observed after having the desired number of children particularly sons (Aghajanian, 1992; Beeman and Bhattachayya, 1978; Mohseni, 1976).

In the literature, sex segregation as sex preference is linked to women's status and fertility. Although sex segregation does not merely belong to Islam and Iran (Mohammadi, 1976) and nor does it conceptually and necessarily mean gender inequality, it has synonymously been used by this term in relevant literature (Moghadam, 1990). As well, it is believed that structural - hierarchical differences between sexes in socio-economic aspects such as

occupation and education introduce a patriarchal society as a split society with two separate halves.

However, as it has been stated in previous chapters (Chapter 2), socio-economic development within these structural characteristics led to a population growth, rural-urban immigration, and urbanization development in Iran during the first period (Lieberman, 1979). Urbanization development and population growth in urban areas have reportedly been high after the 1979 Islamic revolution (Adibi, 1989, Zanjani, 1993; Mirzaie, 1994).

Iran's population is distinguished as a population of an Islamic and developing country. The young includes more than 40% of the total population according to almost all censuses (Statistical Centre of Iran, 1991a). Early and universal marriage are practiced, and marriage in earlier teens is not legally prohibited. A five year difference in age of marriage between spouses has been documented in three successive censuses (Statistical Centre of Iran, 1992) and educational attainment of couples are at different levels. The same imbalance between the sexes is observed in labor market participation (Aghajanian, 1992; Moghadam, 1988). Family pressure with its formal and informal intervention in marriage, divorce and child bearing are reported (Mirhosseiny, 1993). Despite the fact that the nuclear family has physically been developed at least in metropolitan areas. The term physically is used here, since the nuclear family is defined as an egalitarian unit with equal rights and authorities in decision making. In this ideal type of nuclear family, there are fewer differences in terms of educational attainment, occupation, and age of spouses, or the differences are not as marked as in other types of families (pressat, 1985).

The major event in recent history of Iran is the eight year, full scale war with Iraq. It has been well established in literature that the war has had a

depressive and destructive effect on the economic structure of the society and on the population's fertility behaviour (Caldwell, 1982; Demeny, 1990).

Considering the cultural and socio-economic context, there has been a favourable bed for higher rates of fertility, and population growth as its consequence, particularly in the absence of family planning services as it was in the first years after the Islamic revolution (Moghadam, 1990). Neither infanticide nor war nor epidemics are considered as approved and effective way of population growth control. Only family planning services are advised (nationally and internationally), and implemented for this purpose,

Family planning in Iran was implemented for the first time in 1967, but it was repealed by the revolutionary regime immediately after the Islamic revolution (Agajanian, 1991; Nashat, 1983; Mossavar, 1983). It was reimplemented by the revolutionary government in the last months of the war in 1985. At this point, the population of Iran had reached 50 million (an increase of 14 million in eight years) (Obermayer, 1994).

7.3 Empirical findings and characteristics of the sample

Most socio-economic and demographic characteristics of the sample are similar to those which have been documented in both censuses and relevant literature. Similarities between sample characteristics and those of censuses have been used to validate the studies and their results in some Australian studies (Yusuf, 1986; 1980).

However, the mean age at marriage for the study population is mid-19 while for their husbands, it is mid-twenties (25) (Table 5.1.5). The hierarchical age structure of the family and early marriage are some of the demographic characteristics of the respondents' families discovered through survey.

The modal age at marriage among the respondents is very close to the modal age of the last year of schooling (high school). High school students in Iran's educational system finish their course at the age of 18. Apparently, most of the respondents after finishing their high school course get married, become housewives, and start a family. Tashakkory et al. (1987), in his study about desired family size among adolescents in Shiraz has stated that it is not usually desirable for women to stay unmarried for any extended period of time after finishing high school. This process prevents married individuals from continuing higher education, entering a labor market, obtaining an appropriate job, and becoming economically independent. As Table 5.2.2 displays about 80 percent of the respondents are not in the paid work force and none of them occupies a managerial or administrative position. In contrast, Table 5.2.2, reveals that almost all husbands are in the paid work market and occupy much higher positions than those of their wives.

Hierarchy and age-gap between spouses in terms of their age at marriage is an institutional and structural characteristic of the families which most likely will remain as a dominant aspect for family formation as well as a potential threat for higher fertility. The analysis of the responses for the questions about the preferred age of marriage for children of both sexes has revealed that the sample clearly determines and accepts at least five years differences between age of marriage of their offspring and their partners (Table 5.3.9). This partly reflects the strength of traditional attitudes towards family formation among the sample. In general, age difference itself reveals an authoritarian structure of the family as well as a potentially powerful means of male control over women, which is further indicative of the kind of control that derives from the interaction of sex and age hierarchies. Such a difference is recognized as an agent which places a woman in a subordinate position relative to her husband at the outset of marriage. (Cain, 1984; Sheykhi, 1995).

7.4 Implications

Early marriage has demonstrated certain social, health and policy implications. Socially it may cause divorce and family breakdown with their well known socio-psychological effects for both mothers and children. From the health point of view, adolescent mothers' children may suffer from physical and mental problems at a rate higher than children of older women. Moreover, divorced mothers' daughters most likely experience divorce during their life. All these cases increase socio-economic burden and place development barriers in the way of both individuals and society.

The most important side effect of early marriage is its effect on fertility behaviour and population growth which nowadays is an important and an international concern in terms of environment, health, poverty and social crisis. Ozone layer depletion, higher infant and maternal mortality, female infanticide among poor families of developing countries, and higher rates of widowhood because of higher life expectancy of women in almost all countries, are examples in this respect (Mc Namara, 1991; Watson et al., 1979; Suzuki, 1993; Bongaarts, 1993; Warren et al., 1992; Cain, 1984; Davis and Over, 1986).

An early start to child bearing may mean an interruption in education resulting in low future income through decreased labor force options and larger completed family size (UN, 1987). Low birth weight of new born babies, intellectual deficits in the babies, failure in social achievements for the mother, and the potential reproduction of a new generation of adolescent mothers (Manlove, 1994), are consequences of teenage marriages. Thus overall, populations with later ages of marriage may show quite low levels of fertility, not only because of their lost reproductive years but because of deliberate control over marital fertility.

As mentioned above, differences between partners in age at marriage can escalate widowed rates. According to the Statistics Centre of Iran (1992), 1,107,475 widows were counted in the last census (1991). The loneliness of old age which could aggravate mental illness among elders living alone, together with insufficient social security, leads to a great deal of medical services usage and constitute an economic burden for society.

As in the case of widowhood, divorce has substantial socio-economic consequences. However, early marriage has also been encouraged by traditional and religious value systems, and in the wake of the Islamic revolution, the legal age of marriage for girls has been decreased to early teens (Chapter 2 part 2.1.5).

Higher rates of fertility for this group are expected since the risk of pregnancy covers almost the entire span of their reproductive life particularly in the absence of pregnancy preventive measurements. The frequency of intercourse, socio-cultural pressure for child bearing, and avoiding contraceptive usage before the first child delivery and particularly before having desired number of children are some factors influential on higher fertility (Mohseni, 1976).

Age at marriage is an issue that can be affected by appropriate decision making at governmental level (Reddy, 1986; Ghazi and Deborah, 1988; also see Chapter two part seven:). It is also influenced by levels of socio-economic development and characteristics (UN, 1987). Therefore, developmental factors such as compulsory education can produce a significant effect on age at marriage and consequently on population growth as the outcome of fertility.

7.5 Education

Differences between respondents and their husbands is not limited to age at marriage. In terms of educational attainment and occupation considerable differences between spouses are observable. These differences display a gap between the social status of women (the respondents) and men (their husbands) which is termed 'gender inequality' in the literature and introduces a further factor in higher fertility.

According to Table 5.2.1, although most of the respondents and their husbands have continued their education to secondary level (mode = high school), in terms of tertiary education, the husbands' proportion (24 percent) is much higher than that of the respondents (14 percent).

Findings of the present study have revealed that educational attainment of the respondents is one of the most important determinants of fertility and family size among the sample (Table 6.5.4). These findings are highly consonant with Mamdani's et al., (1993) studies about contraceptive behaviour of poor urban areas dwellers in developing countries in general, as well as Warren's et al., (1992) studies about fertility behaviour in Swaziland, Darabi's (1976) study about the effect of education on fertility and family size in Iran, and World Fertility Survey's of the United Nations (1987). On the whole, a negative association between the level of education of the respondents and number of children ever born has been observed in all but one developing countries in the World Fertility Survey (UN, 1987).

Schooling has often explained correlations between current work activity and what are essentially past fertility levels (Standing, 1993). The study's findings have revealed a significant correlation between educational attainment of the respondents and their occupation on the one hand and between education

and their fertility level on the other (Table A and B). At the micro-level, however, these inverse correlations may be due to the influence of schooling on opportunity income and the motivation to work, as well as on contraceptive knowledge.

Education directly and indirectly affects fertility behaviour (UN, 1987; Aly and Shields, 1991). Directly it increases age of marriage, hence reduces the span of reproductive life at risk of pregnancy. In fact education is known as an appropriate fertility preventive strategy. The greatest impact of education, however, is not direct but through the restructuring of family relationships and, hence, family economics and the direction of the net wealth flow according to Caldwell's theory. Its impacts on fertility are mediated through various mechanisms. It reduces the child's potential for work inside and outside the home, it increases the cost of children, creates dependency within family and society, speeds up cultural change and serves as a major instrument for propagating modern values (Caldwell, 1982).

Not only fertility behaviour, but also other demographic behaviour relevant to and influential on fertility have also demonstrated a strong association with education among most developing countries. For example, in Ghana, the tendency for rural-urban migration, and, in Nigeria a child's chance of survival, has been determined by the duration of education and the mothers' level of education respectively. In countries in the early stages of fertility transition or apparently nearing fertility decline, the most marked fertility differentials appear to be educational ones. In developing countries or states that have achieved universal education ahead of the level of economic development that usually accompanies it- such as Sri Lanka-fertility transition has been dramatic.

Although education has frequently been considered as a reflection of other socio-economic conditions such as household income, particularly if the higher educational level requires the higher expenditure, there now appears to be an increasing recognition of the possibility that education itself may be of fundamental significance (Caldwell, 1982; Darabi, 1976).

However, nowadays, formal education as a responsibility of governments may distort the direct and linear relationship between education and fertility or fertility control behaviour because of its policy-oriented characteristics and its universal impact on certain populations, regardless of their specific socio-economic and cultural-demographic characteristics. This type of education has been much emphasized as an effective means of fertility control.

Education, particularly in higher levels, is considered as an entrance for labor market participation and direct productivity. Being economically independent as a woman and gaining financial support rather than a male's support in societies with patriarchal characteristics seems the first step for improving women's status. Therefore, education functions as a bridge, or mediator, between age at marriage on one hand and labor market participation on the other.

Direct, negative and linear effects of female educational attainment on fertility have been cited by other studies (Standing, 1993). This might be because of its association with contraceptive knowledge (UN, 1987), but its positive influence is through the wife's wage or paid work participation. However, the association between education and occupation (Table B) may further underline the narrow influence of economic activity per se. As noted earlier, its most important effects may be indirect. For instance, schooling and associated paid-work and non-domestic employment may raise the expected age at which women first become pregnant, and in turn lower fertility

(Standing, 1993). Education improves the employment opportunities for women and encourages more female mobility in the search for employment. It also raises women's personal aspirations. It is thus safe to assume that educated women are more reluctant to stay at home than those without education, training, or work experience (Moghadam, 1988).

7.6 Further implications

Education is an area in which government policy can have substantial influence. Improving education, both in terms of quality and quantity, is an objective that is almost universally recognized as being important to social and economic development. In many developing countries, however, education levels remain very low and frequently the education of male children is more strongly encouraged, both through societal attitudes and official policies and programs, than the education of female children (Ghazi and Deborah, 1988).

Empirical findings of the present study show that aspirations of the respondents about desired level of education for their girls and boys are differentiated in a number of ways. While the desired level of education for girls has significantly been differentiated by 50% of socio-economic and demographic factors, only one third of these variables have significantly differentiated desired levels of education for boys. Therefore, it can be concluded that consensus for highest level of educational attainment for boys is stronger than that of girls (Table, B; Table 5.3.8). These findings in attitudinal level approve the existing circumstances of literacy and educational differences between two sexes. However, while total literacy rates have improved over the recent decade, and universal primary schooling implemented, women's literacy rates do not compare favorably with those of men (Table 5.2.1; Moghadam, 1990).

Multiple regression analysis has demonstrated that education as a developmental factor and also one of the components of women's status has a strong negative effect and significant association with existing and ideal family size at $P < .0001$ level among the sample of the present study (Table 6.4.1.1). Therefore, while null hypotheses is rejected, the study's hypotheses about the negative effect of education on fertility rate and family size is supported.

This situation deserves serious attention, not only because of the linkages between female education and fertility, but also to improve health and nutrition, enhance female productivity, and, more generally, promote the development of women's human resource potential (Ghazi and Deborah, 1988).

7.7 Occupation

Despite the fact that about 50% of the respondents have attained high school and tertiary educational level (Table 5.2.1), only about 20 percent of them have been identified as participants in the paid labor market (Table 5.2.2). In urban areas, women who are classified as 'housewives' may actually be part-time workers in the informal sector. Or they may be women whose domestic work and child care take up so much time that there is not time left for work outside the home. Other women may be bound by cultural and familial constraints, while others may choose to stay at home. Due to the low prestige of certain occupations some women may identify themselves as housewives rather than workers (Moghadam, 1990; 1988). The multifaceted characteristics of occupation complicate its effects on fertility behaviour.

Multiple regression analysis has displayed that occupation for women has a significant association and negative effect on existing family size of the sample on one hand and negative effect but insignificant association with desired

family size of the respondents on the other (Table 6.4.1.1). These findings are compatible with the World Fertility Survey's findings in developing countries, that the reduction of fertility is primarily associated with paid work, particularly in the modern sector (UN, 1987). However, it can be concluded that the hypothesis of the study which states that "women in the paid work market have a lower fertility rate is partly accepted in terms of the negative effect of labor force participation on fertility. It seems that, unlike education which can directly affect several aspects of family formation (such as age at marriage, value system, type of occupation and, finally, fertility behaviour), occupation may or may not have such a clear and direct relationship with family size either existing or desired". The reason is that the relationship between fertility and women's labor force participation is more complicated than either residence or education issues.

First of all, any relationship potentially involves a complex set of forces that make it difficult to isolate the effects of any single factor. Whether or not a woman works is likely to depend not only on the number of children she has, but also on other factors including the age of children, availability of child care help, substitute labor in the family, availability of jobs, wage level, type of employment, and social and cultural norms. Moreover, the nature of the relationship between reproduction and women's work is likely to vary with the economic setting (see Chapter two, part 2.5 - 2.5.5).

In considering the impact of raising children on women's work, several potential dimensions should be distinguished. Firstly, child bearing and child rearing may totally prevent a woman from working in the labor force for the entire duration of the period in which she is raising children. Secondly, child bearing and the initial demands of caring for a new born infant may temporarily interrupt the continuation of her economic activity to which she returns once the demands of child care become less intensive. Thirdly,

although the woman may continue or resume working, child care may interfere with the execution of her economic activities, lowering her productivity by reducing the intensity of work or the amount of time that she can devote to it. Fourthly, reproduction may influence the type of work a woman does, causing her to shift from jobs that are less compatible to those that are more compatible with raising children.

While the first three of these dimensions act to reduce the extent of women's employment as a result of reproduction, two additional dimensions operating in the opposite direction are also possible. Having children to support, and particularly having large families, may increase the need for the woman to be economically active and thereby either prompt entry into the labor force or lead a woman to intensify the extent of her economic activity (Podhisita et al. 1990). In other words, partial failure to find hypothesized significant and negative effects of employment on fertility, or weak evidence of such effects, might in some circumstances be due to women going out to work to support their families, a countervailing positive effect of fertility on work (Aly and Shields, 1991; UN, 1987).

As it has been indicated in Table 5.2.2, female activity rates are much lower in comparison with that of their partners in the sample. A similar pattern is evident from censuses for the whole population (Moghadam, 1990). However, the negative effect of occupation on desired family size of the respondents could partly be due to the type of occupation they had as well as to the low rate of labor force participation of the respondents (Table 5.2.2). Despite these characteristics, analysis of variance has displayed that occupation is a strong differentiating factor for existing and desired family size of the sample (Table B).

7.8 Place of birth and place of residence

Social and geographical mobility are usually accompanied by searching for jobs and occupations as the main source of income and money earning. Migration therefore can be recognized as an index of social mobility in this respect. Place of birth and residential area are appropriate indexes for measuring migrants and dwellers, geographical and social mobility respectively.

Findings have revealed that while most of the respondents have been born in Tehran, their husbands are mostly from other cities (Table 5.1.3). This is recognized as a sign of male migration from small towns and rural parts to metropolitan areas. At the same time, this may indicate limited physical and geographical movement of the women and their socially, culturally and economically settled positions as house wives, rather than their participation in labor market, which has not much need of social or geographical mobility.

Place of birth, duration of residency in a particular place and residential area are demographic factors affecting fertility and fertility control attitudes and behaviour. These factors presumably affect family size and desire for that integratedly (ontically) rather than separately (ontologically). Cultural values of place of birth in sensitive years of childhood could strongly affect attitudes and perspectives of individuals. Migration in fact is a process by which two cultures or sub-cultures cross each other and cultural conflict and cultural transfusion occur. Therefore, at least two different value systems can be expected among immigrant attitudes and behaviour. It must be noted that there is an acculturation process for immigrants during their residency in the host community. The level of acculturation partly depends on the extent and continuity of contact (Moore, 1974). The more they live in a new environment the more they become familiar and most likely to accept the host

community's values. Social mobility can be accompanied by the pre-mentioned acculturation process and partly accelerate or decelerate that process. Most of the time social mobility and social status are reflected in residential area.

Residential area as an important and influential variable has not been indicated as a differentiating factor of current fertility among the respondents. This is for two main reasons. The first is that the age structure of the sample (Table 5.1.2) is still young, capable and desirous of child bearing (Table 5.3.2). Therefore, their family size has not yet been completed. And the second reason is that immediately after the revolution, Tehran became the focus for migrants from all parts of the country due to offers of land allocation and other social privileges for deprived groups. Moreover, because of the war between Iraq and Iran on the one hand and a domestic war in Afghanistan, most Afghan refugees and migrants from western provinces of Iran, inevitably camped and settled in Tehran. Neither all the refugees, nor all war displaced people returned to their previous home. As was predicted, most of them remained in Tehran, built homes, conducted business, and produced offspring. The geographical distribution of social classes in residential areas, could partly be affected because of this huge influx.

However, residential area has retained its influence on attitudes relevant to desired family size and perceived ideal family size in society "among other families" (Table, B). Moreover, a significant association between residential area and the three attitudinal scales has been observed (Table, A).

The effect of place of birth and duration of residency, particularly relevant to the husbands, can be used interchangeably, since the longest period of residency in a new environment may lead to a better acceptance of the new environment's values and for building a new identity. On the other hand,

short term residency may mean keeping and retaining the place of origin's value and not being affected by the new community's values and requirements. However, the majority of the husbands are from 'other cities' (Table 5.1.3), and their long duration of residency in Tehran, may be considered as an important factor in changing the role and influence of place of birth on current and future fertility. Table 5.1.4 demonstrates that more than 68% of husbands have lived in Tehran for more than 20 years.

As mentioned above, residential area is recognized as a differentiating factor for future fertility (desired family size). Some other demographic variables such as 'marriage age cohort' and 'duration of residency in Tehran' accompany 'residential area' in this respect and demonstrate the same function on 'desired family size'. There are still other factors influential in this regard. The 'husbands' place of birth' is one of these demographic variables. While 'husbands duration of residency' in Tehran' affects and differentiates current fertility (existing family size), their place of birth has indicated significant differences on their families' future fertility (ideal family size) Table B.

These findings will be more pronounced where dominant 'other places' born husbands who have migrated to metropolitan Tehran a long time ago (Table 5.1.4), 'urban-rural' fertility differentiation, 'existing and desired family size' differences and male dominated structure of family are taken into consideration. Larger family size is recognized as a characteristic of rural areas rather than metropolitan areas, therefore, ones who are born in a rural area experience a larger family size with a greater number of siblings in early childhood. They tend to reproduce their childhood family size, particularly if they have experienced a happy family (Tashakkori et al., 1987). However, on the other hand, socio-economic imperatives and cultural values in living place (metropolitan area), particularly after a destructive war, and a strong family

planning policy, impede having a larger family size as it has been experienced in their childhood and is a desire for their present situation.

If dominant attitudes towards fertility and ideal family size stem from husbands' situation as the head of families, it can be concluded that the pressure for limited family size has not resulted in a change in attitudes as a strong component of behaviour (Ajzen and Fishbein, 1980) since desire for higher rates of fertility exists among the families. This is a potentially threatening point for the effectiveness of family planning programs in the future and, most likely, even in the case of economic prosperity at least for a couple of decades.

Not only 'family size' and 'ideal family size', but also, perceptions about 'ideal family size in society' and 'opinions about pregnancy prevention', have been differentiated by 'residential area' and 'duration of residency in Tehran'. It is therefore, reasonable to say that these two demographic variables are partially representative of type and degree of the whole social environment which influence fertility and fertility control behaviour of the sample. However, potentially higher fertility can be concluded from other corresponding findings of the study. The sex ratio of 'desired family size' for the respondents themselves and for 'perceived desired family size among other families', explain this assertion.

As it has been noted in Chapter six, the mean number of desired children of the respondents (2.5) is more than that of their actual (existing) family size (2.2), (Table 5.3.2 and Table 5.1.6). This is understandable particularly with reference to the age structure of the sample (Table 5.1.2). However, according to Table 5.3.2, among the respondents there is no one who wants no children. Similar findings have been documented in the study by Tashakkory et al's. (1987) in Shiraz. This is because the primary motivation of marriage in

Iran as in other Muslim and most of developing countries is to establish a large family (Sheykhi, 1995). It could also be true that some of the respondents may wish to have a smaller number of children than they already have. Although this argument seems to be partly true at an individual level, particularly in the absence of family planning services (Watson, 1979; Sheykhi, 1995), it rarely happens that mothers alone, or parents together desire less children than those they have already produced (Keeley, 1976).

The sex composition of the desired number of children demonstrates a potential for higher future fertility. Existing sex ratio among the respondents' families is 104 (Table 5.1.7). This means that there are 104 boys in relation to 100 girls. The corresponding ratio for desired family size among the respondents is 111, (Table 5.3.1) which indicates son preference among the respondents. The preference is more pronounced when the range of desired number of children of both sex is reviewed. Table 5.3.1 also displays 'four and three' as the maximum number of boys and girls, respectively, desired by the respondents. The perceived sex ratio in society among "other families" is much higher than that of desired family size. Table 5.3.3, displays sex ratio as 130. The perceived minimum and maximum number of desired children of each sex have been indicated as 'zero and three' for girls and 'three and seven' for boys respectively. The maximum desired number of girls is equal to the minimum desired number of boys. These figures indicate that sex ratio in current fertility is lower than that of future fertility "desired family size" of the respondents which in turn is lower than perceived sex ratio in society (among "other families"). If perceived values and attitudes of the broad community are considered as 'subjective norms' affecting smaller groups' attitudes and behaviour according to 'reasoned action theory', therefore, 'ideal family size in society' and its 'sex ratio' can be considered as a pattern of the sample's future fertility with its sex-specific characteristic. This should be of concern to

policy makers in the long run if the population growth is to be controlled, efficiently, and, most importantly, voluntarily.

The last two census of Iran display an imbalanced sex ratio among all age groups of Iran's population (Statistics Centre of Iran, 1992). This adverse existing sex ratio is interpreted as an indicator of son preference and low status of women (Moghadam, 1990). Although, studies reveal conflicting results about the effect of son preference on fertility (Rahman, 1991; Ram, 1993), a general but not conclusive finding has been that son preference affects fertility rates positively in the long run (Tashakkory, 1987). The results of the present study also display a considerable difference between the mean number of desired children of two groups of respondents. The mean of 'sex-specific desired family size' is greater than that of 'non sex-specific' one (Table 5.3.2).

7.9 Son - preference

In societies in which women are relatively independent economically, in which they share relative equality with men with respect to economic opportunity and control of property, parents will be more indifferent about the sex of offspring vis a vis insurance and security. In societies in which women are more dependent on men, where they are excluded from mainstream economic activities, parents will place a greater preference on sons. It has been asserted that, other things equal, the fertility level implied by a necessity for son will be considerably higher than it would otherwise be (Cain, 1984). Therefore, the fore-mentioned characteristics of the sample could be potentially threatening since they include two effective attitudes (larger ideal family size and son preference) on higher fertility rates and population growth.

However, economic dependence on men can entail special risks for women such as natural disasters or the process of aging to which both men and

women are exposed. Widowhood, divorce, separation, or incapacitating illness of husband represent threatening events in situations in which women are excluded from mainstream sources of income and are thus prevented from providing for themselves through their own labor and endeavor. An important source of insurance against the risk of losing the economic support of a husband is sons (Cain, 1984). In order to indicate the importance of possible reasons of son preference among the sample, a stepwise regression analysis was employed between all eight items in the scale as independent variables and the total score of the scale as dependent variable. This computation revealed that 65.7 out of 100 percent of total score of son preference scale belongs to item six. This item indicates son as a source of insurance for old age.

This is understandable with reference to low rates of paid work participation of the respondent, their early marriage, sex segregation and social environment which emphasis house-keeping as adominant value and a virtue for women. On the other hand, son preference may appear as a determinant attitude among groups of families with higher levels of educational attainment, social consciousness, and individualistic philosophy that will and tend to raise independent children just for their own benefits in an economically volatile environment in which only or most likely males can appropriately survive. In other words, son preference may take place for a coming generation's interest rather than that of the concurrent generation.

In general sex preference is recognized as a consequence of the low and economically dependent status of women. Recent studies in developing countries such as Bangladesh, suggest that it is the seclusion of women and hence their inability to be economically productive, along with the breakdown of the extended kin network as a source of economic support for widows, that

lies at the root of a very strong preference for male children among women (Mason, 1985; Cain, 1984).

It is important to locate the analysis of women's status as the root of son preference and fertility at the appropriate level of aggregation. It is possible to think about many individual-level measures of women's economic dependence on men, but the factors that condition an individual's experience-- the sexual division of labor, labor market segmentation, inheritance rules, religious norms of behaviour, rules of marriage and family formation-- are clearly located in a society's institutional structure.

Lack of adequate rates of literacy together with inadequate labor force participation of females, hamper women's social and economic improvement and empower the hierarchical and patriarchal system. Moreover, kinship and family formation (patrilocal), cultural and religious beliefs systems, (female modesty and inheritance rules) and sex segregation (particularly in labor markets), strengthen the patriarchal structure. Dominant cultural values represent a strong defense for patriarchy and are explicit about the sexual division of labor and responsibility and, in effect, sanctify male dominance (Cain, 1984).

These characteristics and differences mentioned above are considered as the structural characteristics of families in a patriarchal society. Patriarchal structure is known as the sum of institutional mechanisms that serve to limit women's economic autonomy relative to men's. The autonomy and economic independence of women is determined by the availability of income resources. These latter are mostly available through participation in the paid labor force and this in turn requires a higher level of education. Because of these reasons, education has become a very dominant determinant of fertility and fertility control behaviour of populations in developing countries. In this study

education has demonstrated a significant impact on current fertility (existing family size), future fertility (ideal family size) and son preference as the consequence of women's status (Table 6.4.1.1).

7.10 Fertility control (Abortion and Family planning services)

While fertility behaviour of the respondents has significantly been influenced by education, fertility control behaviour of them (attitudes towards abortion and contraceptive use), does not reflect a significant effect of education (Table 6.4.1.1). This is mainly due to policy-oriented characteristics of fertility control methods and technology which underpin similarities in aggregate levels and undermine dissimilarities in individual levels. Moreover, it can be said that fertility and fertility control decision making take place at different levels. While fertility control policy adopted by governments is at the national level, it is believed that decision making for fertility and family size takes place at the household and family level. This is, of course, a Western view that couples make decisions about the number of their children and is highly influenced by the Western type of nuclear family structure as well as Western societies' socio-economic philosophy such as individualism, rationalism, utilitarianism, and objectivism. This view is criticized for two main reasons.

The first is that apart from volatile determinants of decision making process over the time, even within this structure, decision making for family size needs a high quality between-spouse communication and full agreement of the couple which is not always achievable. In many cases spouses may demonstrate a different preference, individually. The second is that, there are other types of families which their reproductive behaviour is not determined by biological parents' intentions or decisions, nor children born directly belong to the biological parents. In these cases decisions are made outside of the households under the influence of tribes, the elder, social pressure and

most likely unconsciously. This is why 'New Home Economic' theory of fertility is criticized and is recognized as a theory not applicable for the analysis of fertility behaviour particularly in developing countries.

In conclusion regardless of the level of decision making for fertility and family size, fertility control decisions are made at the national level. It is therefore, reasonable to assume that the compatibility of these two levels is an essential requirement for providing an effective fertility control policy. In order to achieve this goal, a great number of mechanisms, including abortion and family planning services, are adopted by governments.

However, abortion and contraceptive use have been treated in different and even in contradictory ways by fertility control planners and policy makers. While contraceptive use is encouraged socially and legally, abortion is prohibited on legal and religious grounds. Mere prohibition of abortion does not necessarily mean that it is not practiced. But it is certainly a great barrier to gaining accurate data and information about the prevalence of abortion among different age and social groups, and most likely helps backyard abortion to be practised in unhygienic conditions and by unqualified persons. Such illegal abortions are associated with extremely high risks which may result in serious complications or death (Women's health and development resource centre, 1994). Perhaps it is because of these side effects that legal restrictions on abortion are known as lethal means of violence against women (Toro, 1989).

On the other hand, prohibition of abortion may produce a positive effect in aggregate level and in the long run. Strong son preference together with increasing use of prenatal ultrasound and amniocentesis procedures in countries such as China, India, Korea has made sex-selective abortion possible, and, consequently, has created a fear of an imbalanced sex ratio in different

age groups of populations. It is most likely that prohibition of abortion, legally in general and culturally in particular, may prevent the sex ratios from becoming distorted.

However, abortion is practiced in almost all countries despite possible barriers and prohibitions. Several reasons may explain an attempt or a desire for abortion. These reasons were grouped in a scale and analyzed in this study. In order to find the most important factor in affecting the attitudes of the respondents towards abortion as the strongest attitude of fertility control, a stepwise regression analysis was conducted between all items in the scale as independent variables and the total score of the scale as the dependent variable. This computation revealed that 74.3 out of 100 percent of total score variance of abortion scale belongs to item four. This item offers abortion as a permissible act when families are over crowded; by definition it means that they have more than three children. The finding also indicates an awareness and support of family size limitation (three or less) because of both policy related measurements and socio- economic circumstances of the respondents.

In fact, the strength of this item is partly due to the low economic status of families that cannot afford a new member in their family (item five). This is consistent with findings of other studies in developing countries. For example, a study conducted in Bogota among 500 women who had induced abortions revealed that 44% of them decided on abortion for economic reasons and 27% opted for the procedure because of lack of stable relationship (Toro, 1989). It is understandable that socio-economic consequences of an eight year full-scale war together with economic sanctions most likely affects families' affordability of looking after a large number of children. However, all these possibilities are referred to desired family size as the number one influential factor on the abortion attitudes (Table 6.5.2).

Unlike abortion which has historically been rooted in humans' history, modern contraceptive methods are product or by product of socio-economic development of Western societies after the industrial revolution.

7.11 Family planning and contraceptive behaviour

Nowadays family planning programs themselves are considered as developmental factors which incorporate other developmental factors such as education or occupation, and function more effectively. A number of studies have approved that family planning programs success rely on socio-economic development . In developing countries particularly in the Middle East when family planning programs were accompanied with socio-economic development, the achievement was sizable (Faour, 1989; Nagi, 1984).

The reimplementation of family planning services in Iran took place after the war and accompanied by its socio-economic consequences. However, the effective use and acceptability of family planning methods depends mainly on cultural values, social institutions, and size preferences (Sheikhi, 1995). Family planning as a type of modern technology, and its utilization as a way of thinking are important factors in these respects. In terms of technology, it is an imported technology for developing countries. Therefore, it is not a product or by product of their own development, and represents mainly Western countries' values particularly for societies with traditional rules and values. As a tool and instrument of fertility regulation it might be readily accepted but as an idea with certain cultural, believes, and value laden aspects, it may face serious barriers. In fact there could be a cultural lag in utilizing family planning technology in developing countries which is recognized as responsible for the failure of family planning programs. For example when methods of pregnancy prevention are in agreement with faith and beliefs, they

are utilized frequently, otherwise complains and discomfort are reflected. Good's study (1980) is an appropriate example in this respect (see 2.1-2.1.5).

Findings of the present study demonstrate that factors representing socio-economic status and development such as residential area, modernization, respondents and their husbands' occupation are significantly associated with their attitudes towards contraceptives (Table A). On the other hand, analysis of variance reveals that none of these factors except husbands' occupation, differentiate significantly the attitudes of the respondents towards contraceptives and their acceptability (Table B). Also, lack of significant association and mean difference between the attitudes of users and non-users of contraceptives towards contraceptives' acceptability have been demonstrated (Table, A and Table B). Moreover, insignificant role and participation of very influential institutions, parents, religious sources, and educational centres, as sources of information and advice for contraceptive use (Table 5.4.2), and the absence of discussion about sex in families and between parents and children (Sheikhi, 1995), have been reported. These indicators reflect family planning programs in a volatile position, since simple lack of awareness of any method or its utilization still presents a major obstacle for use or effective use of contraceptives in most developing countries (UN, 1987).

Consequently it seems most likely that reimplementation of family planning services was due mainly to 'social interest' and 'elites requirements' rather than 'individuals' requests.

In this study when the respondents were asked to state their preferred person (husband or wife) for contraceptive use, most of them (42 percent) introduced husband as their preference (Table 5.3.11). Although this finding may be interpreted as a sign of awareness of alternative contraceptive users, at the

same time it may indicate a sort of reluctance for contraceptive use by the respondents. This is more pronounced particularly when the male dominated family structure of the respondents is taken into consideration.

Such a situation may postpone or even prevent family planning as a fertility control instrument to be institutionalized, or established and become part of the consumers' daily behaviour.

Nowadays, family planning services in Iran is a post-war phenomenon for population growth control and is accompanied by post-war socio-economic circumstances and government. These services have been widely spread in almost all parts of the country. A considerable reduction in population growth in Iran has been reported since the reimplementation of the family planning programs. According to the Undersecretary for the Ministry of Health, the population growth rate has reduced from 3.9 percent in 1979 to 1.75 percent in 1995 (Malek Afzali, Ettelaat, 1995). While some authorities attribute this reduction to family planning programs effectiveness, others argue that this is the post-war economic depression which has demonstrated inhibiting fertility characteristics (Amir Ahmadi, 1995; Demeny, 1990; Caldwell, 1982). Amir Ahmadi states that although the effect and influence of family planning programs cannot be disregarded, development of literacy particularly for women, returning Afghan and Iraqi refugees and publicity for small family size are equally important in this respect.

Considering the fore-mentioned features of family planning and its consumers characteristics, two relevant issues can threaten the family planning programs effectiveness. The first is its policy-oriented characteristics, and the second is the family planning services' comprehensiveness.

When family planning programs are reimplemented as a strategy for controlling an unimpeded population growth, as was the case in the first

decade after the Islamic revolution in Iran, most likely the numbers and quantity seem more important than individual services and quality of care. Therefore, little attention may be given to women's health, personal and psychological needs. For example, certain groups with very specific needs, such as teenagers and single women with sporadic sexual contacts may inadequately be served in family planning clinics or even might be ignored to be included in the services programs.

In such circumstances, a women may be regarded as only 'an individual at risk of becoming pregnant'. Her need is then defined as effective contraception, while other critical aspects of her psychology, physiology and sexuality are neglected. This partial picture of a woman's reproductive health requirements stems from a population control approach which, as it has been mentioned before, 'favors social interest' of reducing population growth over the needs and preferences of the individuals and couples.

Services that are simplified to the point of provision of contraceptive commodities to large numbers of acceptors without adequate screening or method choice most likely result in high numbers of drop-outs, contraceptive failure, and unwanted pregnancy.

8- Conclusion

Fertility rates of Iran's population has remained consistently high since the beginning of this century, and began to decrease in the last years of the Shah's regime (mid-1970s). But after the Islamic Revolution in 1979, it gained one of the highest rates of fertility and population growth in the world and became a matter of concern for policy makers. Investigating whether the growing rates of fertility was due to the Islamic Revolutionary values, failure of pre-revolutionary family planning programs, or cultural values deeply rooted in the structure of the Iranian society were the focus of this study.

Women, being the core of family, fertility and fertility control programs, were selected from 3 regions/strata of Tehran as the study sample. Demographic, socio-economic, attitudinal and policy-oriented variables were taken into consideration in order to explore fertility and fertility control behaviour of the respondents.

One of the major components of behaviour according to 'reasoned action' theory is attitudes. Three attitudinal scales

1- Abortion scale

2- Contraceptive scale

3- Son preference scale

were developed. Abortion as the strongest fertility inhibiting attitude, son-preference as the strongest encouraging fertility attitude, and acceptability of contraceptive as the mediator attitude, were considered. Further, women's status, measured by educational attainment and occupation, was taken into account as an influential factor on the sample's fertility and fertility control behaviour.

Data were collected through use of a questionnaire. Chi-Square test, Analysis of Variance, Multiple and Stepwise Regression conducted in order to find association, differences, effects and importance of each variable on the sample's attitudes and behaviour towards abortion, contraceptive usage, sex preference and family size.

Multiple regression analysis revealed that women's status as a combined variable has had a distinctive influence on the sample's family size ($p < .01$), their ideal family size ($p < .01$), their attitudes towards son preference ($p < .01$), and their attitudes towards abortion ($p < .05$). Acceptability of contraceptive

or contraceptive usage was not affected by the women's status variable. Between 'education' and 'occupation' as the components of 'women's status', the former revealed a stronger effect on 'family size', 'ideal family size' and 'son preference' than did the latter.

Among all variables, duration of marriage -which is mainly determined by age at marriage- demonstrated a substantive effect on fertility and 'existing family size' of the respondent and explained about 62 per cent of fertility behaviour (family size) variation of the sample.

'Ideal family size' of the respondent, was determined by their 'existing family size', 'perceived ideal family size among other families or in fact in the community' on one hand, and their 'opinion about pregnancy prevention' on the other, respectively. 'The first two variables explained 29 out of 31 per cent of variation about the 'ideal family size' of the respondent.

Variance for 'abortion' and 'acceptability of contraceptive' was not found largely due to their strong policy-oriented characteristics. Two opposite approaches are seen towards abortion and contraceptive use. While abortion is prohibited, contraceptive usage is strongly encouraged.

Attitudes towards son preference were determined mainly by 'education' and 'attitudes towards contraceptive' or the acceptability of contraceptive. For this attitude 'education' had a fourfold stronger effect than the other. On the whole 20 per cent of variation of the respondents' attitudes was explained.

The study revealed that 'husbands', 'health workers', 'friends and neighbours' are the most influential groups on fertility related behaviour of the respondents. There are also indicators of a successful family planning program effort on national level population growth control. It has also been asserted that the effectiveness of the programs is due mainly to post-war

socio-economic circumstances. Despite this achievement, fertility control behaviour has a long way to be institutionalised and mean time there are some structural components which may favour higher fertility particularly in the absence of an effective family planing program.

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Appendices

Appendix A

بمهری اسلامی
وزارت بهداشت درمان آموزش پزشکی

تاریخ: ۱۳۹۶/۰۶/۰۷
شماره: ۱۱۱۱۱/۱
پروت:

معاونت محترم امور بهداشتی دانشگاه علوم پزشکی و خدمات بهداشتی

درمانی تهران

بدینوسیله آقای پوررضا را که در رشته بهداشت عمومی در کشور استرالیا به تحصیل اشتغال دارند معرفی می‌نماید. خواهشمند است با توجه به اینکه ایشان رساله دکترای خود را در زمینه تنظیم خانواده و باروری می‌گذرانند دستور فرمائید همکاری لازم در مراکز بهداشتی درمانی ذیربط با ایشان بعمل آمده و فرمهای پرسشنامه مورد نیاز تحقیقات ایشان تکمیل گردد. / پ

دکتر حسین ملک‌افغانی /
معاون امور بهداشتی

Appendix B

شماره ۹۶۰۰۰۱۰۱
تاریخ
بیوست ۱۵ / ۶ / ۱۳۷۷



بسمه تعالی

ریاست محترم مرکز بهداشت جنوب - شهری - اسلامشهر - قم

بدینوسیله برادر آقای ابوالقاسم پور رضا کارشناس بهداشتی درمانی
این دانشگاه که مشغول ادامه تحصیل در رشته بهداشت دردوره دکتری میباشد
معرفی ، دستورفرمائید درمورد بررسی باروری تنظیم خانواده درمراکز
بهداشتی درمانی تابعه همکاری لازم معمول دارند.

دکتر صادق پور

معاون بهداشتی دانشگاه

تاریخ ۱۳۸۸/۷/۲۵
شماره ۸۸۸۸/۷/۲۵
بیومت

جمهوری اسلامی ایران
وزارت بهداشت و درمان و آموزش پزشکی
پایمان منوط به ایستادگی و پایداری و استمرار
مرکز بهداشت و درمان و آموزش پزشکی

دانشگاه علوم پزشکی و خدمات بهداشتی درمانی شهید بهشتی

بسمه تعالی

به کلیه واحدهای تابعه

سلام علیکم

باعنایت به مفادنامه شماره ۲/۱۰/۱۱۴۴۶ ب مورخ ۷۳/۶/۱۵
معاونت محترم امور بهداشتی وزارت متبوع بدینوسیله آقای
ابوالقاسم پوررضاجبهت تکمیل پرسشنامه و جمع آوری اطلاعات
موردنیاز درموردتنظیم خانواده معرفی میشود. مقتضی است دستور
فرمائید همکاری همه جانبه بانامبرده معمول ونتیجه اعلام گردد.

از طرف

دکتر احمد رضا فرسار

معاون امور بهداشتی دانشگاه

شماره ۸۸۸۸/۷/۲۵



بیتانی

تاریخ: ۱۳۷۲/۴/۱۵
شماره: ۳۴۵۴
پرونده: ۱۳۷۲/۴/۱۵

دانشگاه علوم پزشکی ایران " بهداشت دهان و دندان برای یک زندگی سالم "

به کلیه واحدهای تابعه (مرکز بهداشت غرب - کرج ، رباط کریم ، شهریار
ساوجبلاغ)

سلام علیکم

با توجه به عفا نامہ شماره ۱۱۴۲۶/۱۰/۲۱۰۶ مورخ ۷۳/۶/۱۵
معاونت محترم امور بهداشتی وزارت متبوع ، جنابزید آقاي ابوالقاسم
پور رضا جهت تکمیل پرسشنامه و جمع آوری اطلاعات مربوط به تنظیم
خانواده مرغی می شوند مقتضی است دستور فرمایید همکاری همه جانبه
به نامبرده معمول و نتیجه اعلام گردد .

دکتر یزد اشرف الدین کوچه شیر


سرپرست معاونت امور بهداشتی دانشگاه علوم

پزشکی و خدمات بهداشتی درمانی ایسراق

آدرس: تهران - خیابان گندی (نشر خیابان) پست تلفن ۲ - ۸۰۲۶۳۰۱ - ۸۰۱۷۵۱۰
(بروزگري ۶/۱۹)

Appendix E

'Please see print copy for image'



Appendix F

Consent form

Dear respondents

The questionnaire which you are asked to complete it is part of my study project as a Ph.d candidate. This research is supervised by Professor R.D. Harris the Head of the Department, Public Health and Nutrition at the University of Wollongong .

The questionnaire asks for your own ideas and attitudes about fertility and fertility control related issues which are of great importance for mother and children's health, as well as population growth control programs. Your name and address are not required, since the data to be collected and analysis will remain anonymous. Moreover, you have the right to accept or refuse to answer the all or some of the questions.

An attempt has been made to use plain language in the wording of the questions in order to be clearly understood. However, if you experience difficulties in understanding the questions please let me know.

Completing the questionnaire will take 15-20 minutes and your participation in this study will greatly be appreciated.

Your Sincerely

A. Pourreza

Questionnaire

- 1- Region,
2- Clinic,
3- Date of questionnaire completion,
4- Head of family,

Demographic characteristics of family

	Family members (including dead child/ren)	Sex 1= male 2= female	Date of birth (Year)	Place of birth 1- Tehran 2- Other cities 3- Rural	Duration of residency in Tehran (Year)	Level of education (Degree or years of schooling)	Age at marriage (Year)	Occupation 1- Employed 2- Unemployed	Type of occupation
-	-	5	6	7	8	9	10	11	12
1	Respondent								
2	Husband								
3	First child								
4	2nd child								
5	3rd child								
6	4th child								
7	5th child								
8	6th child								
9	Other 1								
10	Other 2								

13- How many children (boys and girls) in total would you want to have?

a- Total number ____ 1-(boys) ____ 2-(girls) ____

b- Total number (regardless of children's sex) ____

14- How many boys and how many girls do you think that average families prefer to have ?.

a- Total number ____ 1-(boys) ____ 2-(girls) ____

b- Total number (regardless of children's sex) ____

15- Do you approve or disapprove of married couples preventing a pregnancy?

a- Strongly agree

b- Agree

c- Indifferent

d- Disagree

e- Strongly disagree

16- Does your husband approve or disapprove of couples preventing a pregnancy?.

a- Strongly agree

b- Agree

c- Indifferent

d- Disagree

e- Strongly disagree

17- What is your opinion about abortion?

a- Strongly agree

b- Agree

c- Indifferent

d- Disagree

e- Strongly disagree

18- There are different, sometimes opposite, points of view about abortion.

Please tell me whether you approve or disapprove of abortion for any of the following reasons.

18/1- Abortion is permissible when the pregnancy seriously endangers the mother's health.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/2- Abortion is permissible when there are reasons to believe that the child will be medically unhealthy (deformed).

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/3- Abortion is a solution for undesired consequences of unwanted pregnancies.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/4- Abortion is permissible for families with over crowded
circumstances (more than three children).

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/5- Abortion is permissible when the couple cannot afford another
child

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/6- Abortion is permissible when the foetus is not of desired sex.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/7- Abortion is permissible before animation of foetus (less than three
months old)

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

18/8- Other reasons (please explain) when abortion is permissible.

19- Here are some methods married couples use to prevent a pregnancy. Which ones have you heard about?

- | | | |
|-------------------|---------------|-------------------|
| 1- Rhythm | 2- Withdrawal | 3- Breast feeding |
| 4- Condom | 5- IUD | 6- Injectables |
| 7- Pill | 8- Minipill | 9- Vasectomy |
| 10- Sterilization | 11- Norplant | |

20- Where have you learned most about family planning? Please tick the one most important source where you learnt about family planning.

- 1- Husband
- 2- Co-workers, Friends and Neighbors
- 3- Parents
- 4- Health workers
- 5- Media (specify)
- 6- Religious sources
- 7- Educational centres
- 8- Work place training
- 9- Other (specify).

21- Are you currently using any contraceptive method?

- 1- Yes (Which method)? _____
- 2- No (Go to 25)

22- Please choose two methods among the following list as the best methods which you prefer to use. Mark them as the "first" and the "second".

- | | | |
|-------------------|---------------|-------------------|
| 1- Rhythm | 2- Withdrawal | 3- Breast feeding |
| 4- Condom | 5- IUD | 6- Injectables |
| 7- Pill | 8- Minipill | 9- Vasectomy |
| 10- Sterilization | 11- Norplant | |

23- For what purpose do you use contraceptive? Please sign the first priority.

- 1- No more children wanted

3- Sexual pleasure

5- Mother and children’s health
- 2- Spacing:

4- Husband's satisfaction

6- Other (specify)

24- Who or what has advised you to use a contraceptive? Please tick the one most important for you.

- 1- Husband
- 2- Co-workers, Friends and Neighbors
- 3- Parents
- 4- Health workers
- 5- Media (specify)
- 6- Religious sources
- 7- Educational centres
- 8- Other (specify).

25- In case of a problem related to reproduction, who or what is the first source that you would consult? Please check the one most important of them.

1- Husband
2- Co-workers, Friends and Neighbors
3- Parents
4- Health workers
5- Media (specify)
6- Religious sources
7- Educational centres
8- Other (specify).

26- Different perceptions have been developed about contraceptives. Would you please state your views about each of the following statements.

26/1- Using contraceptives leads to health problems for mothers.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

26/2- Using contraceptives leads to health problems for foetus.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

26/3- Using contraceptives is unreliable.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

26/4- Using contraceptives prevents some diseases.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

26/5- Using contraceptives immediately after marriage leads to
a relative infecundity.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

26/6- If there are any other ideas or comments, please explain.

27- Which of the facilities listed below do you have and enjoy? Please check all
items.

1- Car	Yes	No
2- Electric sewing machine		
3- Freezer		
4- Video		
5- Personal computer		
6- Electric washing machine		
7- Colored widescreen T.V.		
8- Dish washing machine		
9- Vacuum cleaner		
10- Stove		

28- What level of education do you wish for your children ?

Desired level of education	Girl	Boy
Primary		
Guidance		
High school		
Post-diploma		
Bachelor		
Ms >		

29- What is the preferred age of marriage for your children ?

Preferred age of marriage	Girl	Boy
< 20		
20- 25		
26- 30		
31 >		

30- To whom does the home/house in which you live, belong? Please check one.

- 1- To your own family (Private property)
- 2- To a landlord (rental)
- 3-Organizational
- 4- You live in free of charge
- 5- Other (specify)

31- Some people prefer girls to boys and some people prefer boys to girls.

What would be the reason ?

31/1- A boy keeps family name and reputation.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/2- A boy cost less than a girl.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/3- A boy is an income source for family but girl not.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/4- A boy is the source of emotional support for his mother and sisters.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/5- Mothers rely on a boy in the absence of a father particularly after father's death.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/6- A boy is an insurance for old age.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/7- A boy is necessary for religious ceremonies and purposes.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

31/8- A boy is less vulnerable than a girl in society.

- a- Strongly agree
- b- Agree
- c- Indifferent
- d- Disagree
- e- Strongly disagree

32- Who is the preferred person to use contraceptive.

a- woman

b- man

c- both

- If you have any other suggestion or ideas, please state here.

Appendix G

پاسخگویان عزیز

پرسشنامه ای که جهت تکمیل در دست شماست ، قسمتی از موضوع رساله دوره دکتری من برای ارائه به دانشگاه ولونگونگ میباشد .

این پرسشنامه در ارتباط با نظرات و تمایلات شما نسبت به باروری و کنترل باروری تنظیم شده است که برای بهداشت مادر و کودک و کنترل جمعیت از اهمیت ویژه ای برخوردارند . مشخصات شخصی از قبیل نام و آدرس و ... پرسیده نمی شوند چون اطلاعات جمع آوری شده و تجزیه و تحلیل آنها کاملاً محرمانه خواهند ماند . مضافاً اینکه پاسخ دادن یا پاسخ ندادن به همه یا تعدادی از سوالات کاملاً بستگی به میل و اراده شما داشته و این امر جزو حقوق فردی شما محسوب میشود .

تلاش شده است تا سوالات به زبانی ساده تنظیم گردند . در صورت مواجهه با مشکل لطفاً سوال فرمایید .

تکمیل پرسشنامه حدود پانزده تا بیست دقیقه طول میکشد و از اینکه در اینمورد مرا یاری میکنید پیشاپیش و صمیمانه سپاسگزارم

ارادتمند شما

ابوالقاسم پوررضا

جدول مشخصات دموگرافیک اعضای خانوار

- تاریخ تکمیل :
- سرپرست خانواده :

۲- دریاخانه

ردیف	شماره	اعضای خانواده شامل فرزندان (احتیالا فوت شده)	جنس : ۱ زن ۲ مرد	تاریخ تولد (به سال شمسی)	محل تولد : ۱ تهران ۲ شهرستان دیگر ۳ روستا	مدت اقامت در تهران (به سال)	آخرین مدرک تحصیلی	سن هنگام اولین ازدواج (کدهای ۱، ۲ و ۳)	وضعیت فعالیت : ۱ شاغل ۲ بیکار	عنوان شغل : (برای کد ۱ در مشورن ۱۱) نام شغل یا عنوان پست سازمانی
			۵	۶	۷	۸	۹	۱۰	۱۱	۱۲
۱	۱	پاسخگو								
۲	۲	همسر پاسخگو								
۳	۳	فرزند اول								
۴	۴	فرزند دوم								
۵	۵	فرزند سوم								
۶	۶	فرزند چهارم								
۷	۷	فرزند پنجم								
۸	۸	فرزند ششم								
۹	۹	دیگر اعضا (۱)								
		سایر اعضا : (لطافاً ثبت رانویسید)								

۱۳- دلّتان می‌خواهد چند بچه داشته باشد ؟

(۱) دختر _____ تعداد _____

(۲) پسر _____ تعداد _____

(۳) دختر و پسر تفریق نمی‌کند _____ جمعا _____

۱۴- فکر می‌کنید خانواده‌ها ترجیح می‌دهند کلا چند بچه داشته باشند ؟

(۱) دختر _____ تعداد _____

(۲) پسر _____ تعداد _____

(۳) دختر و پسر تفریق نمی‌کند _____ جمعا _____

۱۵- نظر شما در مورد جلوگیری از حاملگی چیست ؟ (فقط یکی از پاسخها را انتخاب و علامت بزنید)

(۱) کاملاً موافق ☐ (۲) موافق ☐ (۳) بی تفاوت ☐ (۴) مخالف ☐ (۵) کاملاً مخالف ☐

۱۶- نظر شما در مورد جلوگیری از حاملگی چیست ؟ (فقط یکی از پاسخها را انتخاب و علامت بزنید)

(۱) کاملاً موافق ☐ (۲) موافق ☐ (۳) بی تفاوت ☐ (۴) مخالف ☐ (۵) کاملاً مخالف ☐

۱۷- نظر شما راجع به سقط جنین چیست ؟ (فقط یکی از پاسخها را انتخاب و علامت بزنید)

(۱) کاملاً موافق ☐ (۲) موافق ☐ (۳) بی تفاوت ☐ (۴) مخالف ☐ (۵) کاملاً مخالف ☐

۱۸- در مورد سقط جنین نظرات مختلفی وجود دارد که نمونه‌هایی از آنها در زیر آورده شده است . لطفاً نظر شما را در مورد هر یک از آنها بیان فرمایید (در مقابل هر جمله فقط یک خانه را علامت بزنید)

شماره سوال	شرایط مختلف برای سقط جنین	کاملاً موافقم	موافقم	بی تفاوت	مخالفم	کاملاً مخالفم
۱۸/۱	در مواردی سقط جنین برای سلاشی مادر ضروری است					
۱۸/۳	سقط جنین برای مادران حامله‌ای که جنین آنها از نظر پزشکی ناسالم است اشکالی ندارد					
۱۸/۳	سقط جنین به عنوان یک راه حل برای شکلاتی که معمولاً بدنبال حاملگی‌های ناخواسته بوجود می‌آید تلقی می‌شود					
۱۸/۴	برای خانواده‌های پرولاد (دارای بیش از سه بچه) سقط جنین باهشدار مجاز باشد					
۱۸/۵	سقط جنین برای خانواده‌هایی که از عهد، هزینه‌های بزرگ کردن بچه‌ها بترسی آیند اشکالی ندارد					
۱۸/۶	در صورتی که جنین دلخواه نباشد سقط جنین اشکالی ندارد					
۱۸/۷	سقط جنین برای جنین‌های زیر سه ماهه اشکالی ندارد					

۱۸/۸- شرایط دیگری را که نظر شما سقط جنین لازم می‌شود توضیح دهید .

۱۹- با کدامیک از روشهای جلوگیری که در زیر آمده است آشنا هستید ؟ لطفا علامت بزنید

- | | | | |
|-----------------------------|--|--------------------------------|--|
| ۱- ریشم (روزهای مطمئن ماه) | بلی <input type="radio"/> نه <input type="radio"/> | ۶- تزریقی | بلی <input type="radio"/> نه <input type="radio"/> |
| ۲- نزدیکی منقطع | بلی <input type="radio"/> نه <input type="radio"/> | ۷- قرص معمول پیشگیری | بلی <input type="radio"/> نه <input type="radio"/> |
| ۳- شیردادن بچه از طریق سینه | بلی <input type="radio"/> نه <input type="radio"/> | ۸- قرص مخصوص شیردهی | بلی <input type="radio"/> نه <input type="radio"/> |
| ۴- کاندوم | بلی <input type="radio"/> نه <input type="radio"/> | ۹- بستن لوله های مرد | بلی <input type="radio"/> نه <input type="radio"/> |
| ۵- آی - پی - دی | بلی <input type="radio"/> نه <input type="radio"/> | ۱۰- بستن لوله های زن | بلی <input type="radio"/> نه <input type="radio"/> |
| | | ۱۱- نورپلانت یا کپسولهای کاشتی | بلی <input type="radio"/> نه <input type="radio"/> |

۲۰- به چه وسیله از برنامه های تنظیم خانواده اطلاع پیدا کردید ؟ لطفا فقط يك مورد را که برای شما از همه بهتر است علامت بگذارید *

- | | | |
|--|--|---------------------------------|
| ۱) حسر <input type="radio"/> | ۲) فامیل ، دوستان ، همسایگان و حکاران <input type="radio"/> | ۳) والدین <input type="radio"/> |
| ۴) پزشک ، ماما یا کارکنان بهداشت و تنظیم خانواده <input type="radio"/> | ۵) وسائل ارتباط جمعی <input type="radio"/> | |
| ۶) رهبران ، جماعت و مکانهای مذهبی <input type="radio"/> | ۷) مراکز و مراجع آموزشی (معلم - مدرسه - دانشگاه) <input type="radio"/> | |
| ۸) آموزش در محل کار <input type="radio"/> | ۹) منابع دیگر (لطفا نام ببرید) ... <input type="radio"/> | |

۲۱- آیا در حال حاضر از وسیله جلوگیری از حاملگی استفاده می کنید ؟

- | | |
|------------------------------|---------------------------|
| ۱) بلی <input type="radio"/> | لطفا نام وسیله را بنویسید |
| ۲) نه <input type="radio"/> | بروید به سؤال (۲۵) |

۲۲- به نظر شما روشهای مناسب جلوگیری از حاملگی کدامیک از روشهای زیر است ؟ دو روشی را که مناسبتر از روشهای دیگر است به ترتیب اهمیت با قید کلمات اول و دوم مشخص فرمایید *

- | | |
|-----------------------------|--------------------------------|
| ۱- ریشم (روزهای مطمئن ماه) | ۶- تزریقی |
| ۲- نزدیکی منقطع | ۷- قرص معمول پیشگیری |
| ۳- شیردادن بچه از طریق سینه | ۸- قرص مخصوص شیردهی |
| ۵- کاندوم | ۹- بستن لوله های مرد |
| | ۱۰- بستن لوله های زن |
| | ۱۱- نورپلانت یا کپسولهای کاشتی |

اول | دوم

۲۳- به چه خطری از روشهای جلوگیری از حاملگی استفاده می کنید ؟ لطفا فقط يك مورد را که بهتر از همه است علامت بزنید *

- | | |
|---|--|
| ۱) نخوآستن فرزند بیشتر <input type="radio"/> | ۲) برای فاصله گذاری بین فرزندان <input type="radio"/> |
| ۳) برای جلوگیری از حاملگی <input type="radio"/> | ۴) برای لذت بردن از روابط زناشویی <input type="radio"/> |
| ۵) برای تأمین رضایت همسر <input type="radio"/> | ۶) برای بهداشت و سلامتی (تجربه پزشک) <input type="radio"/> |
| ۷) برای اهداف دیگر (لطفاً توضیح فرمایید) | |

۲۴- چه کسی شما را به استفاده از وسائل جلوگیری از حاملگی ترغیب و تشویق کرده است ؟

- (۱) ☐ همسر (۲) ☐ فامیل + دوستان + همایگان و همکاران (۳) ☐ والدین
 (۴) ☐ پزشک + ماما یا کارکنان بهداشت و تنظیم خانواده (۵) ☐ وسائل ارتباط جمعی
 (۶) ☐ رهبران + جماع و مکانهای مذهبی (۷) ☐ مراکز و مراجع آموزشی (معلم - مدرسه - دانشگاه)
 (۸) ☐ منابع دیگر (لطفا نام ببرید) ...

۲۵- اگر شکلی در زمینه حاملگی و زنانگی برای شما پیش بیاید اولین نفر که این شکل را با او در میان می گذارید کیست ؟ لطفاً از میان پاسخهای زیر فقط یکی را که از همه برای شما بهترین است انتخاب و علامت بزنید .

- (۱) ☐ همسر (۲) ☐ فامیل + دوستان + همایگان و همکاران (۳) ☐ والدین
 (۴) ☐ پزشک + ماما یا کارکنان بهداشت و تنظیم خانواده (۵) ☐ وسائل ارتباط جمعی
 (۶) ☐ رهبران + جماع و مکانهای مذهبی (۷) ☐ مراکز و مراجع آموزشی (معلم - مدرسه - دانشگاه)
 (۸) ☐ منابع دیگر (لطفا نام ببرید) ...

۲۶- در مورد وسائل جلوگیری از حاملگی نظرات مختلفی ابراز شده است . لطفاً نظر خود را در مورد هر یک از موضوعات عنوان شده زیر در ارتباط با وسائل جلوگیری از حاملگی + یا گذاردن علامت در یکی از خانه های مقابل اعلام فرمائید .

شماره سوال	اظهار نظر	کاملاً موافقم	موافق	بی تفاوت	مخالقم	کاملاً مخالفم
۲۶/۱	استفاده از وسائل جلوگیری سلامت مادر را به مخاطره می اندازد					
۲۶/۲	مادرانی که از وسائل جلوگیری استفاده کرده یا می کنند در صورت حاملگی چنین آنان سبب در معرض خطر قرار گیرد					
۲۶/۳	استفاده از وسائل جلوگیری قابل اعتماد و اتکا نیست					
۲۶/۴	استفاده از وسائل جلوگیری از بعضی بیماریها جلوگیری می کند					
۲۶/۵	استفاده از وسائل جلوگیری (بلافاصله بعد از ازدواج) مانع از بچه دار شدن می شود (منظور اینست که جنین نازایی نسبی می شود)					

۲۶/۶ چنانچه نظرد دیگری در مورد روشهای جلوگیری از بارداری دارید لطفاً بیان فرمائید .

۲۷- از وسائل و تسهیلات زیر کدام یک در منزل شما موجود و مورد استفاده هست ؟ لطفاً علامت بزنید .

- (۱) ماشین ☐ بلی ☐ نه (۲) چرخ خیاطی برقی ☐ بلی ☐ نه
 (۳) فریزر ☐ بلی ☐ نه (۴) ویدئو ☐ بلی ☐ نه
 (۵) کامپیوتر ☐ بلی ☐ نه (۶) ماشین لباسشویی اتوماتیک ☐ بلی ☐ نه
 (۷) تلویزیون رنگی بزرگ ☐ بلی ☐ نه (۸) ماشین ظرفشویی اتوماتیک ☐ بلی ☐ نه
 (۹) جاروبرقی ☐ بلی ☐ نه (۱۰) اجاق گاز ☐ بلی ☐ نه

۲۸- برای فرزندان خود چه سطح تحصیلی آرزو می کنید ؟ لطفاً آنرا مشخص فرمائید .

- دختران: (۱) ابتدائی (۲) راهنمایی (۳) دیپلم (۴) فوق دیپلم (۵) لیسانس (۶) فوق لیسانس و دکترا (۷) دیگر
 پسران: (۱) ابتدائی (۲) راهنمایی (۳) دیپلم (۴) فوق دیپلم (۵) لیسانس (۶) فوق لیسانس و دکترا (۷) دیگر

۲۹- ترجیح می دهید بچه هایتان در چه سنی ازدواج کنند ؟ لطفاً باعلامت آنرا مشخص فرمائید

- دختران: ۱- زیر ۲۰ سال (۲) ۲۰ تا ۲۵ سال (۳) ۲۶ تا ۳۰ سال به بالا
 پسران: ۱- زیر ۲۰ سال (۲) ۲۰ تا ۲۵ سال (۳) ۲۶ تا ۳۰ سال (۴) ۳۰ سال به بالا

۳۰- خانه ای که در آن زندگی می کنید به چه کسی تعلق دارد ؟ لطفاً باعلامت آنرا مشخص فرمائید .

- (۱) ملکی شخصی (۲) اجاره ای (۳) در برابر خدمت دولتی و خصوصی (۴) رایگان
 (۵) مورد دیگر (لطفاً توضیح دهید)

در مورد جنس فرزندان بیان مردم حسابتهائی وجود دارد :

۳۱- بعضی ها ترجیح می دهند بیشتر دختر داشته باشند تا پسر و بعضی ها بالعکس . این امر ممکن است دلائلی داشته باشد مثل دلائلی که در زیر آمده است . لطفاً نظر خود را با گذاشتن علامت در یکی از خانه های مقابل هر جمله مشخص فرمائید .

شماره سوال	دلائل ترجیح دختر یا پسر	کاملاً موافقم	موافق	بی تفاوت	مخالفم	کاملاً مخالفم
۳۱/۱	پسر نام و شهرت خانواده را حفظ می کند					
۳۱/۲	پسر کم خرج تر از دختر است					
۳۱/۳	پسر منبع درآمد برای خانواده است ولی دختر نه					
۳۱/۴	پسر تکیه گاه عاطفی و مالی برای مادر و خواهران خود است					
۳۱/۵	مادران در غیاب پدر مخصیصاً پس از مرگ پدر به فرزندان پسر خود تکیه می کنند					
۳۱/۶	پسر بیمه و حمایت دوران پیری است					
۳۱/۷	پسر برای انجام تشریفات و مراسم مذهبی لازم است					
۳۱/۸	آسیب پذیری پسر در اجتماع کمتر از دختر است					

۳۲- بنظر شما بهتر است که زن از وسائل و روشهای جلوگیری استفاده کند یا مرد ؟

- (۱) زن (۲) مرد (۳) دیگر (لطفاً توضیح دهید)

