DETERMINANTS OF FERTILITY BEHAVIOR AND CONTRACEPTIVE USAGE AMONG MARRIED WOMEN IN THE PRODUCTIVE AGE: A CASE STUDY OF SHIRAZ COUNTY, IRAN

by

KHADIJEH ASADISARVESTANI

Thesis is submitted in fulfillment of the requirements

for the degree of

Doctor of Philosophy

August 2016

ACKNOWLEDGEMENT

The completion of my PhD was made possible by the assistance and support of a number of people. I will always be grateful to these individuals for helping me finish such a difficult task yet incredibly rewarding facet of my education. First of all, thanks to Almighty Allah for making this and everything possible. And foremost, I would like to take this opportunity to extend my heartfelt thanks to those who have contributed and made this research a success. I would like to offer my sincerest gratitude to my supervisors: Dr.Suet Leng Khoo, Assoc. Prof. Dr. Nor Malina Malek, Dr. Suziana Mat Yasin, and Dr. Ali Yar Ahmadi who have supported me throughout my thesis with their patience and knowledge whilst allowing me to work in my own way. My deepest sincere appreciation goes to my supervisors for the invaluable guidance and constructive feedback especially in the final stage of PhD thesis. My deepest to Assoc. Prof. Dr. Tiun Ling Ta, in guiding and providing me with the knowledge at the important and difficult stages of my thesis. I would also like to acknowledge Universiti Sains Malaysia for providing the study support to pursue my doctoral degree in the field of Population Studies, for that I am truly grateful. I would like to convey my thanks to the School of Social Sciences, departments of Planning and Management and Institute of Postgraduate Studies for supporting me in every step of the way. Last but not least, my great deep gratefulness to my lovely family who blessed me with their love, patience, support and understanding in completing this research. My profound gratitude is dedicated to my family for their unwavering support; my heartfelt “Thank You” to my husband (Hoshyar), my mother and my daughter (Dorsa) who have been there for me all my life.

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LIST OF ABBREVIATIONS

UN	United Nations
UNFPA	United Nations Population Fund
WHO	World Health Organization
FP	Family Planning
IRPHE	Institute of Research and Planning for Higher Education
IPPF	International Planned Parenthood Foundation
EC	Emergency Contraception
TFR	Total Fertility Rate
CBR	Crude Birth Rate
ZPG	Zero Population Growth

LIST OF APPENDICES

PENENTU- KEPADA TINGKAHLAKU PERLAKUAN BERKAITAN KESUBURAN DAN PENGGUNAAN KAEDAH PERANCANGAN KELUARGA DALAM KALANGAN WANITA PERINGKAT UMUR SUBUR YANG SUDAH BERKAHWIN: SATU KAJIAN KES DI WILAYAH SHIRAZ, IRAN

ABSTRAK

Iran seperti negara-negara lain telah mengalami banyak perubahan demografi. Kejayaan program perancangan keluarga serta pembangunan sosio-ekonomi telah menyumbang kepada penurunan kadar kesuburan secara dramatik di Iran. Justeru, para perancang dasar Iran sedang meneliti semula dasar yang berkaitan dengan kependudukan untuk menambahbaik kadar kesuburan. Walaupun program peancangan keluarga di Iran adalah antara yang berjaya di dunia, namun masalah seperti keperluan yang tidak dipenuhi, kehamilan tidak dikehendaki dan pengguguran haram masih lagi mempunyai peratusan yang tinggi. Oleh itu, tujuan utama kajian ini adalah untuk menyelidik faktor-faktor yang memberikan kesan terhadap perilaku kesuburan serta penggunaan kaedah perancangan keluarga. Kerangka teori telah dibina berdasarkan teori transisi demografi, teori permintaan dan pengeluaran serta teori difusi. Kajian ini merupakan sebuah penyelidikan secara kuantitatif, menggunakan kaji selidik. Sampel bagi kajian ini merupakan golongan wanita yang telah berkahwin dalam lingkungan umur subur (15-49 tahun) yang tinggal di sekitar Wilayah Shiraz, Iran. Data ini telah dikumpulkan dengan menggunakan kaedah soal selidik daripada 626 wanita yang telah dipilih melalui kaedah pengumpulan sampel kluster pelbagai dan persampelan bertujuan. Analisis data telah dijalankan dengan menggunakan SPSS (versi 20). Keputusan kajian ini

telah menunjukkan bahawa perilaku kesuburan dan penggunaan kaedah perancangan keluarga adalah disebabkan oleh faktor-faktor sosio-ekonomi dan budaya. Dari segi perilaku kesuburan, keputusan kajian ini telah menunjukkan bahawa peramal utamanya terdiri daripada umur responden, tahap pendidikan responden, umur semasa perkahwinan pertama, bilangan anak yang diingini, perbezaan umur dengan pasangan, tahap pendidikan suami dan penggunaan kaedah perancangan keluarga. Bagi penggunaan kaedah perancangan keluarga, peramal utamanya pula adalah persetujuan pasangan mengenai penggunaan kaedah perancangan keluarga, jumlah sebenar anak yang dilahirkan, kuasa wanita, pengetahuan dan sikap positif terhadap penggunaan perancangan keluarga, serta bilangan anak yang diingini. Selain itu, penemuan dalam kajian ini mengesahkan bahawa kedua-dua teori peralihan demografi dan teori permintaan dan penawaran adalah penting untuk menerangkan perilaku kesuburan dan penggunaan kaedah perancangan keluarga, namun teori-teori ini tidak memadai. Penyebaran idea-idea baru boleh memainkan peranan yang penting dalam mengubah perilaku kesuburan dan penggunaan kaedah perancangan keluarga semasa ketiadaan indeks pembangunan dan faktor-faktor ekonomi. Teori penyebaran boleh memainkan peranan penting dalam menerangkan kesuburan dan penggunaan kaedah perancangan keluarga bagi mengatasi jurang teoritikal tersebut.

DETERMINANTS OF FERTILITY BEHAVIOR AND CONTRACEPTIVE USAGE AMONG MARRIED WOMEN IN THE PRODUCTIVE AGE: A CASE STUDY OF SHIRAZ COUNTY, IRAN

ABSTRACT

Iran like other countries has experienced a lot of demographic changes. The success of the Iranian family planning program as well as socioeconomic changes has contributed towards a dramatic decline in fertility rate. As a result, Iranian policy makers are revising population policies to improve the fertility rate. On the other hand, although a family planning program of Iran is one of the most successful family planning programs in the world, but it still has many unsolved problems such as a high rate of unmet need, unwanted pregnancies and illegal abortions. Hence, the main purpose of this research was to investigate factors that affect both fertility behavior and contraceptive usage in Shiraz County, Iran. A theoretical framework has been designed based on demographic transition theory, demand-supply theory and diffusion theory. The study is a quantitative research and its technique is survey. The sample of this study was all married women in productive age (15-49) who were living in the Shiraz County (include Shiraz City and rural areas). Data has been collected by questionnaire from 626 women who were selected by multi cluster sampling and purposive sampling. Data were analyzed using SPSS (version 20). The results of this study revealed that both fertility behavior and contraceptive usage were affected by a set of socioeconomic and cultural factors. In terms of fertility behavior, results showed that the main predictors are the respondent's age, respondent's educational level, age at the first marriage, desired number of children, the spousal age difference, husband's education level and contraceptive usage. With

regards to contraceptive usage, the main predictors are couple agreement on contraception method, the number of actual birth children, women's authority, the knowledge and positive attitude about contraceptives and the number of desired children. In addition, the findings confirmed that both demographic transition theory and demand-supply theory are necessary to explain fertility behavior and contraceptive usage but these theories are not sufficient. Diffusion of new ideas can play an important role in change of fertility behavior and contraceptive usage in the absence of socioeconomic and economic factors. To fill up this theoretical gap, diffusion theory can play an important role in explaining fertility and contraceptive usage.

CHAPTER ONE

INTRODUCTION

1.1. Introduction

Trends in fertility are of interest to demographers and social scientists because a better understanding of the change in fertility patterns assists in policy formulation and planning (Jain & McDonald, 1997). Fertility is a natural phenomenon that influences the demographic process of the world's population not only through time, but also across social, cultural, and economic groups (Garcia, 2007). Obviously, the world's population had experienced dramatic changes over centuries (Keshavarz, Bahramian, Mohajerani, & Hossein-Pour, 2012).

Before the year 1500, the global population grew at a rate of about 0.05% per year for 10,000 years. The human population was projected to have reached 400 million people by then. However, a substantial increase in population growth happened in the 17th and 18th centuries, where the annual growth rate rose to 0.5% and the human population reached 1 billion at the beginning of the 19th century. After 1900, the population growth rate continued to increase to 0.7% and went on to 2% by 1960. At the beginning of the 20th century, the human population was already at 1.6 billion (Lunenfeld, 1999). According to estimations, 6.1 billion people were reported to inhabit Earth by the year 2000. A project under the United Nations forecasts an increase of 5 billion people in the population between 2000 and 2100, making the total human population 11.5 billion by 2100 (Lunenfeld & Stratton, 2013).

For hundreds of years, population growth was considered as a good phenomenon that indicates the rise of power. However, a new viewpoint developed during the Enlightenment period. Hume (1742/1825) and Malthus (1803/1986) proposed that population growth could bring negative effects such as depression and disaster. The disapproving idea on population growth gained more support in the following decades (Carr-Saunders, 1936; Ross, 1927). This idea remained in the sidelines until the mid-twentieth century, when enhancements in the health sector started to happen in countries outside the Western world that lowered the mortality and stimulated rapid population growth. The rapid population growth has become a major concern for many parties with regards to the measures to survive the increase in population. Population growth is also thought to be able to arrest economic developments in these countries. This view point initiated an international movement on family planning motivated by economic and social factors. The most crucial is that the decreasing fertility rate can avoid population explosion that can lead to better socioeconomic development, thus improving the quality of lives (Barrett & Frank, 1999).

One example of such initiative was India. India developed its first national family planning policy in 1952. In addition, the International Planned Parenthood Foundation (IPPF) and the Population Council were established at around the same time. This marks a significant start of the modern family planning movement (Mathai, 2008). Although there were disagreements, this movement which began small, was initially welcomed. But in a relatively short period of time, the movement grew, had a strong following and became a major element in the world's culture (Barrett & Frank, 1999). Family planning programs have been strongly endorsed by authoritative parties such as scholars in universities as well high ranked government

officials. One of the biggest proponents of these movements is The United Nations (UN) and its agencies. In order to achieve better socioeconomic development, the UN adopted policies to control fertility. Therefore, fertility control became a high priority in Western-influenced international policy circles (Critchlow, 1999). Following that, family planning programs were initiated and promoted. This also brought forward the introduction of new methods for contraception, increment in procurement and supply of contraceptive pills and devices, and increment of funds for the training of personnel in associated sectors.

As a result, by 1984, 93% of the people in the developing world lived in countries that adopted policies aimed at population growth control (Nortman, 1985). Consequently, the world's total fertility had declined by 37 per cent from 4.5 births per woman in the 1970s (1970 to 1975) to the level of 2.8 births per woman in the duration of years 1995-2000. This large decline in the global level reflects the changes in the reproductive behavior globally, especially in populous countries such as Bangladesh, Indonesia, India, Indonesia, and Pakistan where the reported total fertility rates in 1970-1975 were above 5 children per woman (UN, n.d.a).

This dramatic decline in fertility rate has created an unexpected dilemma in human population growth. This has led the United Nation (UN) to revise its latest forecast of world population from expecting continuous growth into unexpected decline in world's population. As a result, some fear a "population implosion" based on the claims that the world's population explosion is over (Bongaarts, 1999). This is based on reports that fertility rates in many countries have fallen to levels well below replacement rate[1]. Advanced countries have experienced low fertility trends

1. Total fertility levels below 2.1 children per woman (UN, n.d.b).

for decades (UN, n.d.a) and some countries are reported to be experiencing their lowest ever fertility rate[2] (Kohler, Billari, & Ortega, 2002). Meanwhile, less developed countries, have also recently experienced low fertility levels. This indicates that there no longer seem to be any difference between fertility levels between developed and non-developed countries; hence, there are no barriers for most countries to reach replacement level and the subsequent decrease of fertility rates below that level. According to the United Nations, by the year 2000 around 44 per cent of the world population have lived in countries where fertility rate had fallen below the replacement level. This proportion is expected to increase to 67% by the year 2015 (UN, n.d.a).

In spite of the roles of social and economic development in the decline of the global fertility rates, family planning programs can be seen as one of the most important factors that helped the world to tackle the problem of population explosion. It has been established that the purpose of family planning programs is to provide a wide and equitable access to a broad range of modern contraceptive methods and services. This will enable women and men to freely and responsibly control their reproductive intentions across their reproductive life cycle (Jacobstein, Curtis, Spieler, & Radloff, 2013). One of the most essential roles of family planning in declining fertility is the dramatic change in contraceptive[3] usage. It was reported that contraceptive use account for 75% of the fertility decline in low-income countries (Cleland, Conde-Agudelo, Peterson, Ross, & Tsui, 2012). It is claimed that a woman's ability to space and limit her pregnancies has a direct impact on her

2. Total fertility levels below 1.3 children per woman (UN, n.d.b).
3. Contraceptives are devices or medications designed to prevent pregnancy by either suppressing ovulation, preventing sperm from passing through the cervix (Furedi, 1996)

health and children's health. Moreover, contraceptive usage has an important role in decline of problems such as unintended pregnancy and abortion (Ghodsi & Hojjatoleslami, 2012). As a result, contraceptive usage and reducing unmet need for family planning are central to improving maternal health (UN Millennium Development Goal 5) (Cleland et al., 2012). Hence, international human rights law calls for making access to family planning as one of the basic human right. The World Health Organization (WHO) has also identified family planning as one of the six fundamental health interventions needed to achieve safe motherhood and United Nations Children's Fund (UNICEF) has been considered as one of the seven strategies for child survival (Almualm, 2007).

Despite the importance of family planning and contraceptive usage and the global awareness of its importance, there are still many obstacles towards full implementation of such programs worldwide. According to statistics, 215 million women worldwide do not have access to family planning information and services. The UNFPA and the Guttmacher Institute estimated that by providing contraceptive and educating these women on birth control, a further 53 million unwanted pregnancies, 25 million induced abortions and 1.6 million infant deaths can be further avoided (Cohen, 2010). In 2010, 146 million women around the world, aged between 15-49 who were married or in a relationship, had an 'unmet' need for family planning. The absolute number of married women who either use contraception or who have an unmet need for family planning is projected to grow from 900 million (876–922 million) in 2010 to 962 million (927–992 million) in 2015 (Alkema, Kantorova, Menozzi, & Biddlecom, 2013).

The unmet need for contraception is one of the major determinants that lead to unwanted pregnancies and abortions. From the 42 million estimated induced

abortions each year, almost 20 million are done in improper settings causing the death of an estimated 68,000 girls and women. This makes up 13 percent of all pregnancy related-deaths. Unsafe and illegal abortions were among the top five leading causes of maternal mortality in low-income countries. The World Health Organization estimated that in low- income countries, one woman dies every eight minutes from an unsafe abortion practice (World Health Organization [WHO], 2007).

In terms of men participation in family planning, statistics indicate that the rate of male sterilization in developing countries is 2.5 %, while in developed countries, it is 4.8 %. The use of condom in developed countries is 16.1% whereas in developing countries is only 4.4%. Hence, the use of contraceptives among male is significantly lower and this might be the cause for many unplanned pregnancies. This indicates that there is still a high level of unmet needs[4] in contraception and family planning in many developing countries (Ahmadi & Iranmahboob, 2007).

Iran, like other developing countries, has been deeply concerned with the process of demographic transition since 1950s (Mehryar & Ahmad-Nia, 2004). In fact, the success of Iranian family planning program as well as socioeconomic development had participated in dramatic decline in the fertility rate. The fertility rate dropped from an average of more than 6.58 births per woman in the early 1980s to 1.92 births per woman in 2006 (World Bank, 2010). For the first time, the traditionally large fertility gap between rural and urban areas shrank from 3.1 (8.4 -

4. Unmet need means that women want to limit or space future pregnancies, but are not using a contraceptive method, or have no access to the method.

5.3) children per woman in 1988 to 0.6 (2.4 -1.8) in 2000 (refer to Figure 1.1) (Roudi-Fahimi, 2002). Statistics also showed that the national contraceptive prevalence rate (CPR) rose from 37 % in 1976 to about 75% in 2000. In rural areas, the CPR rose from 20 % in 1976 to 72 % in 2000 and from 54 % (1976) to 82% (2000) in the urban areas (Abbasi-Shavazi, 2001).

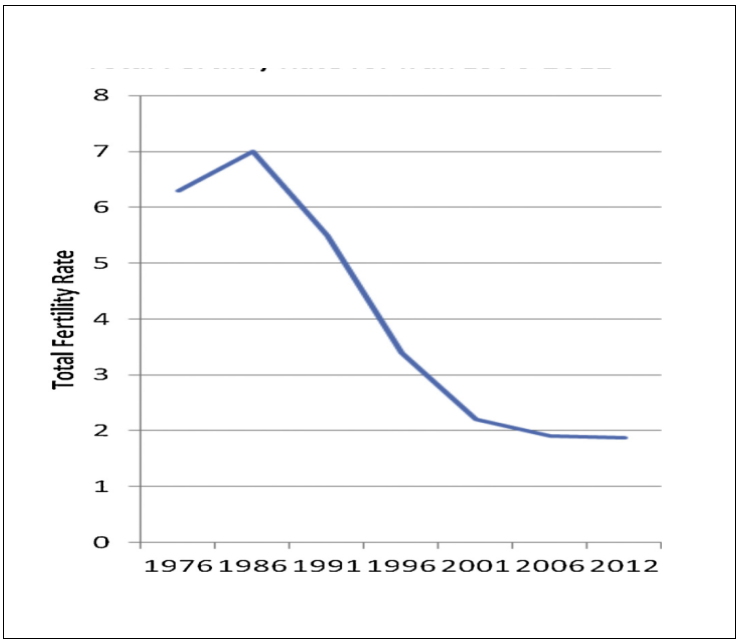

Figure 1.1: Total Fertility Rate for Iran from 1976- 2012
(Source: Loeffler & Friedl, 2014)

Due to a dramatic decline in fertility, the Iranian government is reversing its population and fertility policy as the government and the Iranian society is really concerned about low fertility rate. For instance, alarmed by the rapidly aging population of the country, Iran's Supreme Leader Ayatollah Ali Khamenei is now calling on women to procreate and have more children. This concern is echoed and as mentioned by the Iranian Minister of Health and Medical Education, Marzieh Vahid Dastjerdi, "The budget for the population control program has been fully eliminated and such a project no longer exists in the health ministry. The policy of population control does not exist as it did previously" (Karamouzian, Haghdoost, &

Sharifi, 2014). Furthermore, although Iran is one of the most successful country in its family planning program but still has problems such as the high rate of unmet need, high prevalence of traditional contraception methods, high rate of unwanted pregnancy and high rate of abortion (Mostafavi, Mehryar, & Agha, 2006). Against this backdrop, the next section will provides the problem statement which gives more clarification to factors that have motivated the researcher to conduct this study.

1.2. Statement of the Problem

Iran managed to reduce its fertility rate in a short time without having to resort to coercion or abortion. The fertility rate in Iran had declined from 6.93 in 1950 to 1.59 in 2000. In 1996, only four provinces displayed below-replacement fertility. However, the 2006 census reported that over 80% of the population of Iran belongs to the provinces which are clearly below the replacement fertility rate. Among these provinces, there are 10 provinces with very low total fertility rate (TFR[5]) (ranging from 1.15 to 1.45). Moreover, because of decline in fertility rate and growth of life expectancy, the proportion of the Iranian elderly population had increased from 7.22% in 2006 to 8.20% in 2011 and is projected to increase to 10.5% in 2025 and 21.7% in 2050. As a result, the lack of evidence-based policy-making will pose as a formidable challenge to an ageing population (Hosseini, 2012; Abbasi-Shavazi & Hosseini-Chavoshi, 2011; Roudi-Fahimi, 2002; Mansourian, 2001; Noroozian, 2012; Mehryar, Aghajanian, Delavar, Eini-Zinab, & Kazemipour, 2006).

5- The Total Fertility Rate (TFR) is the average number of children that would be born alive to a woman during her lifetime if she were to pass through her childbearing years having births according to the current schedule of age-specific fertility rates.

Accordingly, Iran reached its family planning program objectives earlier than the times predicted by experts. However, no new specific objectives were set for the future. As a consequence, the family planning program and population growth control continues indefinitely (Hosseini, 2012). In addition, as policy makers are worried about low fertility rate and are determined to limit the access to family planning services. Ironically, until about 5 years ago, policy-makers had encouraged people to have fewer children and family planning services were free. For example, it was visible on the television and heard through the radio that focused fewer children will lead to a better life. However, now they have encouraged people to produce more children. There are many programs on TV and radio that directly and indirectly encourage people to produce children. One the other hand, they are worried about the consequences of limiting access to family planning services. At present, there is an important concern pertaining to factors that lead to this dramatic decline in Iran as a Muslim country. In other words, what are the factors that have more influence on fertility behavior? It should be mentioned that fertility behavior as of the one dependent variables of this study covers two concepts; a) the number of actual births; b) the number of desired children. These two concepts will be further discussed in chapter four.

The second issue that has great importance in this research is unresolved problems pertaining to family planning in Iran. In more details, Iran has one of the most successful family planning programs in the developing world with a 64 percent decline in total fertility rate (TFR) between 1986 and 2000 (Randall, 2012). Furthermore, Iran has the highest rate of contraceptive usage among Muslim countries, and this rate is comparable with advanced countries such as France and Germany (Randall, 2012; Roudi-Fahimi, 2002). Free family planning services were

accessible throughout the country until 2013 but reasons behind the high rate of unmet need are not clear. The unmet need is near to 8.9 %. It ranges from 4.0% in Semnan province to around 25.0% in Sistan and Baluchistan. This means that on average, 8.9% of Iranian women want to postpone or avoid childbearing but they are not using any method of contraception (Mostafavi et al., 2006). In other words, there is a big question mark that why in a country with successful family planning program, the unmet rate is relatively high.

In addition, even though modern contraceptive devices such as condom and IUD were highly accessible through private and public centers in both urban and rural areas, it is not clear why the usage rate of some modern method like condom had dropped from 14 % in 1976 to 9.3 % in 2000. On the other hand, it is not clear why the rate for the use of traditional methods is relatively high. In other words, however, it is believed that the status of Iranian women in post-revolutionary Iran has risen considerably and patriarchal power is slowly diminishing, but there are no clear reasons behind the high prevalence rate of male traditional method such as withdrawal. The higher use of traditional contraceptive methods among highly educated women in big cities and in some regions that reported a very low-level fertility level such as Gilan and Tehran city resulted in unintended pregnancies. The increase in the numbers of unintended pregnancies in areas with low fertility level has created a strong demand for abortion. In circumstances where abortion is illegal or highly restricted, women opt for unsafe procedures. According to the statistic published by Iran's Ministry of Health, approximately 250,000 illegal abortions and 6,000 legal abortions were reported annually (Mostafavi et al., 2006; Cleland et al., 2012). These paradoxes are motivated the researcher to conduct this study in order to

examine the influence of some factors on fertility behavior and contraceptive usage. The main objectives of this study will be presented in the next part.

1.3. Research Objectives

Base on the above problem statement, the following research objectives were formulated for this study:

1. To investigate the current situation of fertility behavior and contraceptive usage in Shiraz County.
2. To examine the influence of socioeconomic and cultural factors (ethnicity, education, exposure to media, value of child, number of desired children, couple agreement on the number children, couple agreement on the contraception method, son preference, religion, religious adherence, woman's authority, income, and job) on fertility behavior and contraceptive usage.
3. To investigate the influence of demographic factors (residential place, couple's age, age at the first marriage, spousal age difference and the number of living children) on fertility behavior and contraceptive usage.
4. To examine the influence of costs of contraceptive usage and couples' accessibility to contraceptives (access to family planning services, costs of contraceptive usage and knowledge about contraceptives) on the use and selection of contraceptive methods.

1.4. Research Questions

In order to achieve the objectives of this research, the following research questions are raised:

1. How is the current situation of fertility and contraceptive usage in the Shiraz County?
2. How do socioeconomic and cultural factors (ethnicity, education, exposure to media, value of child, number of desired children, couple agreement on the number children, couple agreement on the contraception method, son preference, religion, religious adherence, woman's authority, income, and job) influence fertility behavior and contraceptive usage?
3. How do demographic factors (residential place, couple's age, age at the first marriage, spousal age difference and number of living children) influence fertility behavior and contraceptive usage?
4. How do costs and accessibility factors (access to family planning services, cost of contraceptive usage and knowledge about contraceptives) influence fertility behavior and contraceptive usage?

1.5. Significance of the Research

There are many studies on fertility and contraception in Iran. However, the fertility pattern and contraceptive patterns are not clear, especially in the current situation where the government is changing its population and family planning policies to increase the country's fertility rate. Any change in population policy can lead to many changes in population issues. Accordingly, conducting new research to observe changes has great importance in policy making. It should also be mentioned

that until a few years ago, all researches conducted in Iran were concerned about the rapid population growth and its high fertility rate. In recent years, the situation has changed completely, which means that all attention is on the problems of low fertility rate and population ageing. Hence, there is a need to conduct new research on the pattern of fertility and contraceptive usage among the Iranian public. It can be said that the fertility issue has been ignored by many researchers in recent years as there were no worries about high fertility rate. Obviously, fertility trends can be predicted and population growth can be controlled by recognizing the factors that affect fertility preferences and desires. In fact, permanent population policies cannot be planned without a comprehensive and accurate study of factors influencing fertility (Beyeza-Kashesya, Neema, Ekstrom, & Kaharuza, 2010). Therefore, this research fills this gap and attempts to clarify the pattern of fertility and contraceptive usage as well as to identify the influencing factors by focusing on socioeconomic, cultural and demographic factors.

Another privilege of this research is that it will investigate fertility and contraception together as they are interdependent subjects. In other words, fertility behavior is not a separate issue from past and current contraceptive usage. The number of actual births and the desired number of children has great importance in determining the tendency of people to use contraception. The actual use of contraception among adolescents may be considered as a function for interest or motivated by the need to delay, space or limit childbearing within a population. This can also determine the actual accessibility to contraceptive services in a particular population. Accordingly, measuring contraception use can indicate the trend of fertility in society (McDevitt, Adlakha, Fowler, & Harris-Bourne, 1996). Developing

effective family planning programs will require an understanding of the causal relationship between desired fertility and contraception usage.

This study can also be used to discover problems related to contraceptive usage and factors that can influence the accessibility of contraceptives in Shiraz County. As discussed earlier, the rate of traditional contraception among Iranian couples is still relatively high whilst the rate of some modern contraception such as condoms and IUD dropped. By focusing on women's perception on contraception, the findings of this research can help health planners to improve the rate of modern contraceptive and reduce unmet need among different groups of participants.

In addition, Iran is a relatively big country with various ethnics and cultural groups living in 31 provinces with different developmental levels. Hence, the implementation of a single policy for all provinces and ethnic groups may not lead to desired results. The study of fertility behavior and contraceptive usage in each of the provinces or ethnic group is essential as it can produce more refined results. In conducting this research, Shiraz County is selected because includes different ethnic groups. In addition, there are very few new studies that focused on the population of Shiraz County.

Consequently, this research will focus on the current situation of fertility behavior and contraceptive usage in Shiraz County and how these phenomena are influenced by social, cultural and economic factors. In other words, in term of contraception and fertility, this research will help to get a clearer picture about contraceptive usage and fertility behavior in Shiraz County.

1.6. Scope of the study

This study examines both fertility behavior and contraceptive usage among married women aged 15 to 49 years in Shiraz County. This includes Shiraz City and its surrounding rural areas. The fertility pattern and contraceptive usage of Shiraz County will be examined in order to understand how demographic factors (couple's age, age at the first marriage, spousal age difference and the number of living children), socioeconomic factors (ethnicity, education, exposure to media, value of child, son preference, religion, religion adherence, income and job) and costs and accessibility factors (accessibility of family planning services, financial cost of contraceptives and knowledge about contraceptives) influence these variables. In addition, it is important to note that the sample for this study are married women and will not include single women who are sexually active because sexual relationship before marriage is not legally and culturally acceptable in Iran. Therefore, collecting data on contraception practices among single women who have sexual relationship can be problematic.

1.7. Structure of the Thesis

This research consists of seven chapters namely, introduction, literature review, demographic changes in Iran, methodology, results and analysis: fertility and contraceptive usage in Shiraz County, discussion, and conclusion.

Chapter one starts with a short review on population changes and status of family planning in the world, with a special focus on family planning in Iran. Then, it will discuss the problem statement, research objectives, and research questions and highlight the significance of this study.

Chapter Two reviews all key literature related to the topic. Theories on development, fertility and contraception will be reviewed to help the researcher understand and explain fertility patterns and contraceptive usage among couples in Shiraz County. Three theories will be reviewed. They are the demographic transition theory, the demand-supply theory and the diffusion theory. The second part of chapter two will be devoted to reviewing previous studies conducted on development, family planning, fertility, and contraceptive usage. Then, according to the theories and the previous studies conducted, a theoretical framework will be constructed for this study.

Chapter Three will focus on demographic changes in Iran. This chapter will discuss and contextualize the theories and concepts that were reviewed in chapter two for the investigation of fertility behavior and contraceptive usage in Shiraz County.

Subsequently, Chapter Four will discuss the methodology of this study. It will discuss the research design, sampling methods, data collection tools and data analysis methods for this study. Chapter Five will provide analytical data on fertility behavior and contraceptive usage. Chapter Six will discuss research findings based on previous research and link them to the theoretical framework. The research will close with conclusion, implications, and provide platforms for further research in chapter Seven.

1.8. Conclusion

This chapter started with a discussion on demographic transition and family planning changes in the world and Iran. Then, researcher has continued discussion on

research objective, research questions and the importance of conducting this study. Finally, the scope of this study and structure of the dissertation was explained. In the next chapter, in order to construct the theoretical framework for this study, a literature review will be conducted to identify key theories and previous studies to explain fertility behavior and contraceptive usage.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter aims to review the theories and previous studies on fertility behaviour and contraceptive usage. In the first part of this chapter, three keys theories namely the demographic transition theory, the demand-supply theory, and the diffusion theory will be reviewed. In the second part, previous studies on development, fertility and contraceptive usage will be reviewed. Subsequently, a theoretical framework will be designed based on the theories and studies that were reviewed. Finally, a conclusion will be drawn from the reviews.

2.2. Theories about Development, Fertility Behaviour and Contraceptive Usage

The theoretical framework of this study mainly drawn based on the demographic transition theory and the demand–supply theory. With attention to some weaknesses in these two theories (Kirk, 1996; Teitelbaum, 1975; Pendleton & Yang, 1985), the diffusion theory will be used as supplement .As there is a close relationship between the demographic transition theory and the demand-supply theory, they will be discussed together in the next part.

2.2.1. Demand-Supply Theory and Demographic Transition Theory

Most frameworks in studying fertility transition are based upon the economic theories of fertility. The theory is known as the 'demand–supply' theory. The 'demand - supply' theory is widely used framework as a heuristic for the fertility decision-making processes as well as to guide the identification of mechanisms that affects fertility decisions. This theory originated from the work of Leibenstein and Becker in the late 1950s and early 1960s and later, extended by Esterlin (1969). Demand-supply theory provides a framework for analysis of fertility decisions by parents. Becker (1960) argued that children are a source of satisfaction (emotional and financial) and as such can be considered (durable) consumption goods. He claimed that in cases where children provide monetary income, they can be seen as a production good as well. Similar to any other goods, the demand for children falls when the costs exceed the benefits.

The classic fertility transition theory is one of the oldest theories about fertility and one of the best theories for explaining the relationship between fertility and development (Coale, 1984). This was formulated by different authors between the 1930s and 1950s, based on the experiences of European countries. The first formulation of this theory in the English demographic literature was that by Warren Thompson, published in 1929 (Kirk, 1996; Reher, 2004). This theory began as a classification of populations differentiated by different combinations of fertility and mortality. The demographic transition is the decline of fertility and mortality from high to low levels. Beginning in France in three regions (Normandy, Garonne Valley, and Champagne) in the mid-eighteenth century, it spread to other regions during the nineteenth century (Bonneuil, 1997). In Western countries, it took up two centuries to transit into a lower mortality and fertility rate (Thornton et al., 2012). By the

second half of the 20th century, most industrialized nations had underwent a so-called “fertility transition”. This fertility transition is characterized by a reduction in fertility to below replacement level (Caputo, Nicotra, & Gloria-Bottini, 2008). The transition is much quicker in the rest of the world, often in just a generation or two, which takes only a few decades rather than centuries for families to adapt to new lower mortality regimes (Pendleton & Yang, 1985).

The original Demographic Transition theory has just three stages, but additional stages have been proposed by Blacker (1947) (refer to Figure 2.1). During the first stage, the population was characterized as having high levels of mortality and fertility. The population would either be of a steady population size or having a low population growth rate. The population will cease to exist if such a high levels of mortality is not balanced by a high level of fertility (Coale, 1984). High mortality rate is inevitabledue to famine, natural hazards and conflict (war) and in the absence of modern forms of sanitation, agriculture, transport and medicine. As a result, couples in high mortality societies have a lot of births to ensure a surviving brood of the desired size. Thus, the birth and death rates remain approximately equal over time so that a static equilibrium with zero population growth prevails. According to Blacker, this stage continued in Western Europe approximately up to 1840 (Omran, 2005).

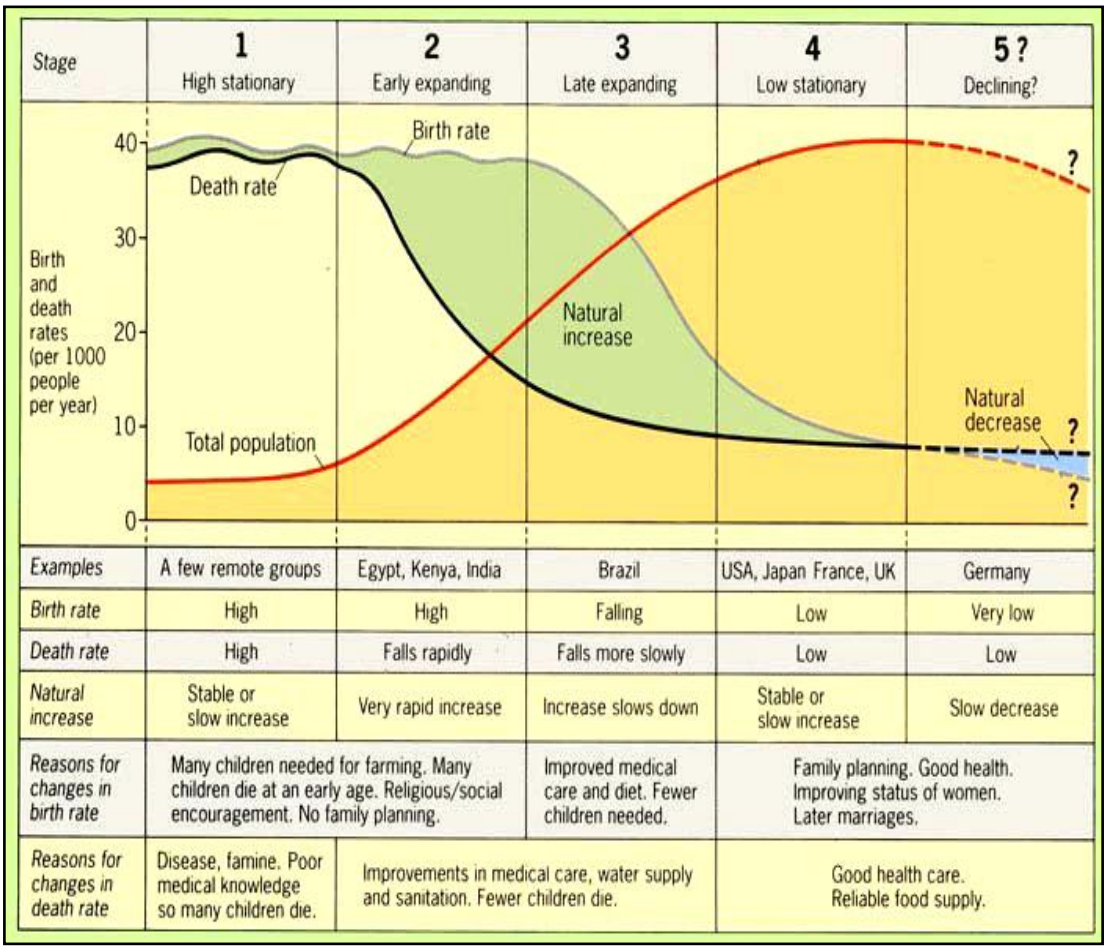

Figure 2.1: Demographic Transition Stages

(Source: Montgomery, 2007)

In this stage of the transition, people mostly live in rural areas and their main occupation is agriculture which is in a state of backwardness. There are a few simple, light and small consumer goods industries. Economic organisations were largely structured around the family and existence of the joint family system provides employment to all children in keeping with their ages. Accordingly, for the long-term functioning of the society, the survival of the family is fundamental. Therefore, given the high mortality rate, high rate of fertility is required to generate a balanced population growth. In the other words, the pre-transformation period was one where the societal household comforts depended basically on labour inputs by the family.

More children in a family are also regarded as an insurance against old age by the parents **(**Puvanarajan, 1994).

Cain (1981) believed that whilst much emphasis has been placed on the use of children to insure against to old age hardships, there are other reasons why children might be seen as security against risk. For example, when mortality is high, there is a greater probability of being widowed at a young age. In societies where males are the main source of income generation, this may lead to economic hardships particularly for women (due to a high risk of widowhood, divorce, and abandonment) but this can be averted if the woman has a sufficient number of children to maintain a reasonable standard of living. While in some societies extended families provide a safety net, older children are relied on as a primary source of income support. Children can therefore (in certain settings) provide insurance against becoming a destitute widow. But as mortality decreases, there is likely to be less need to rely on numerous children for an adequate level of support, and therefore, less pressure to have many children to protect against future loss.

Hence, a high fertility situation was advantageous as long as the cost of bringing them up was not high and their usefulness to the household continued to be of value, as the wealth flow is directed from the children to the parents. As a result, during the first stage, high fertility rate was enforced by societal sanctions. At this stage, no intricate fertility control measure is needed since the population growth is slow. However, they still can make full use of the folk's methods such as coitus interrupts, abortion, and various crude devices that are effective as well (Teitelbaum, 1975).

In the second stage, the economy enters the phase of economic growth. Agricultural and industrial productivity increases, and means of transport develop. There is greater mobility of labour. Education expands. Incomes increase. People get more and better quality food products. Medical and health facilities are expanded. Modern drugs are used by the people. All these factors bring down the death rate (Omran, 2005). More importantly, mortality decline was unprecedented in human history. The reduction in mortality was at first slow and gradual. It began primarily with a more abundant, regular, and varied food supply. This result was due in part to gradually improving agricultural techniques, but probably in greater degree to better transportation, which in turn stimulated commerce and handicraft production, and through these, commercial agriculture. With expanding ocean transport, the agricultural techniques of Europe were applied in new and virgin lands, part of the produce becoming available for Europe itself. When power machinery began to be applied to transport and manufacture, trade was enormously stimulated. The rapid movement of persons, ideas, and goods reduced the number of local famines. Agriculture increasingly supplied distant markets in return for manufactured articles. Some of the manufactured articles were useful in raising agricultural output. Each improvement in one part of the economic or technological system thus led to improvements in other parts. The parade of inventions gathered momentum and the effective distribution of agricultural products developed until, under the best methods, a rather small fraction of the population could furnish the whole with all the food it needed. The effect of this in reducing famine, under nourishment, and susceptibility to disease was enormous, and brought a sizable decline in the death rate. Protection from disease through public did not take effect until the end of the eighteenth century, and was very slow during the next fifty years. Depending on the

prior development of sciences such as engineering and biology, it was a late product of the social changes that were occurring. Once it appeared, however, it had a remarkable effect, and lowered the already reduced mortality still further. In northwestern Europe the decline reached its fastest pace during the half-century from 1880 to 1930. It is clear that behind the specific factors causing the unprecedented decline in mortality there was the general and all-inclusive change through which European society was passing a change from illiterate agriculturalism to literate industrialism (Davis, 1945).

During this stage, mortality reduced but the birth rate remains at the previous high level and people did not have any inclination to reduce the birth of children because of some reasons. Firstly, mortality decline always is welcomed in any society but fertility decline is a cultural subject. Secondly, with economic growth, employment opportunities increase and children are able to add more to the family income (Omran, 2005). Thirdly, because of the presence of customs and beliefs supporting the value of children in addition to religious dogmas and social taboos towards family planning, people do not make any effort to control the size of family. Subsequently, the population started to grow at a rapid rate with the drop in death rate and stagnancy in birth rate. This eventually leads to "Population Explosion". When the population growth curve rises from stage one to stage two as shown in Figure 2.1, it is called the "Early Expanding" (EE) stage in population development. According to Blacker (1947), 40% of the world population was in this stage up to 1930. Many countries of Africa are still in this stage (Cornelius & Novak, 1983).

In fact, the first real burst of world population growth came with the latest stage in cultural progress, the Industrial Revolution (Davis, 1945; Coale, 1984; Lam, 2011; Kirk, 1996). In Europe, this socio-cultural transition known as the "Industrial