



Identifying contextual effective factors on total fertility rate decline in Iran: a qualitative framework-based study

Hasan Jafari¹ · Abolghasem Pourreza² · Ahmad Sadeghi³ · Gisoo Alizadeh^{4,5} · Rahim Khodayari-Zarnaq^{4,6}

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Abstract

This study was conducted to explain the contextual factors associated with total fertility rate (TFR) decline to help policymakers. A qualitative approach and Leichter contextual analysis framework were applied to conduct this study. The participants were selected using purposive sampling method, and also the interviews continued until data saturation was reached. Individuals with knowledge and perspectives on population policies were included in the study to improve the research credibility. The data validity was achieved by applying the maximum variety in selecting the sample. The results were classified into four groups, including situational, structural, cultural, and environmental factors. Situational factors included political sanctions, drought, and road accidents. Structural factors involved government policies, the absence of monitoring, paying no attention to the required conditions, housing status, employment status, economic status, and other issues. Cultural factors were classified into the seven categories, including divorce, socio-economic development, women's employment, marriage age, urbanization, and other issues and factors included international treaties, and the western influence. Policymakers and administrators in the field of demographic policies can make more accurate strategies to increase TFR by recognizing the causes that reduce fertility with the help of providing the possibility to understand better the factors affecting the TFR decline.

Keywords Fertility rate · Qualitative study · Context · Iran

✉ Rahim Khodayari-Zarnaq
rahimzarnagh@gmail.com

¹ Department of Health Care Management, School of Public Health, Health Policy and Management Research Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

² Department of Health Management and Economics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran

³ Esfarayen Faculty of Medical Sciences, Esfarayen, Iran

⁴ School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran

⁵ Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran

⁶ Tabriz Health Services Management Research Center, Health Management and Safety Promotion Research Institute, Tabriz University, Tabriz, Iran

1 Introduction

Dramatic demographic changes have recently occurred worldwide. One of these changes is the dramatic decline in childbearing in the world (Bloom and Luca 2016). Widespread changes have happened in Iran along with these global changes, and an amazing total fertility rate (TFR) decline has been observed in the last three decades (Haghdoust et al. 2017). The population's age structure has turned into the old age from a young age due to the constant reduction that occurs progressively in TFR and the alteration from natural to controlled fertility. As a result, the fertility reduction has changed the population age pyramid over the past two decades, creating a fundamental problem. If the current fertility rate continues in Iran, the population aged 50 to 64 will significantly increase by 2050, and Iran will face an aging population. Several measures are required to increase the population and replace the young population; otherwise, many problems will be created in Iran in terms of production and economic accomplishment. Various demographic, economic, social, and cultural variables decrease fertility and desire to have children in Iran (Baki-Hashemi et al. 2018). The progressive changes in the population age pyramid and its economic, social, cultural, and security outcomes for Iran make it necessary to recognize the factors that directly and indirectly affect these conditions and women's fertility and fertility behaviors. These factors should be considered in formulating the country's demographic policies (Baki-Hashemi et al. 2018; Roudi et al. 2017).

The political, economic, social, national, and environmental factors are among the contextual factors affecting health policies. There are many frameworks to classify these factors. Leichter (1979) has presented one of the most helpful frameworks to classify the contextual factors. He classified the factors affecting policies into four groups, including situational factors, structural factors, cultural factors, and external or environmental factors (O'Brien et al. 2020).

Shiffman et al. (2002) conducted a study on influencing the context of the policy. They compared fertility rights in Serbia and Croatia after breaking-up the Federal Republic of Yugoslavia, while governments utilized measures to encourage women to have more children. The authors argued that these policies were shaped based on the elites' thoughts of both countries that national survival is at risk. This comparative study emphasized that its socio-political context essentially shapes the fertility rights of a nation. The political structure, the civil society's weakness, the geographical environment, the demographic situation, and the dominant ideological paradigm all played a significant role in creating fertility rights in both countries. Differences in political, social, demographic, and geographical environments should be also considered in forming the proper strategies for each environment (Shiffman et al. 2002). A systematic review study that examined the main factors affecting the reduction of childbearing in Iran classified the effective factors into three general categories, including personal and family, socio-economic, and cultural factors. Personal and family factors included increasing age, older age in marriage, the current number of children, duration of the marriage, average birth distance, gender preferences, marital satisfaction, and quality of life. Socio-economic factors included social support, education, employment, and social participation, especially women, the place of living, and the influence of social networks. Cultural factors consisted of modernity, urbanization, industrialization, change in attitudes toward the value of children, and change in family and religion (Baki-Hashemi et al. 2018). Cultural factors also reduce the age of marriage (Lebni

et al. 2020), which directly affect the TFR. The results of a qualitative study showed that fear of child health, childbirth, improper performance of medical staff, hospital environment, and after childbirth are other factors that can affect the TFR (Yoosefi Lebni et al. 2021).

All these factors are complicated and unique in terms of time and policy environment. Hence, analyzing the context and evaluating the effect of these factors on policy outcomes causes a complete knowledge of how policies change or do not change (Browne et al. 2019). It is required to state that creating changes in the policy requires the activity of different dimensions of the context to create a proficient environment to change the policy change and implement it. For instance, a great opportunity to intervene can be provided by making a change in government. The collapse of the economy, on the other hand, may prevent efforts that have been made to change policies that demand more funding to implement. Hence, context affects both policy formulation and also its implementation (Cerna xxx). Issues can be examined in detail and in depth by qualitative research; so it is suitable for identifying factors. Limited studies with qualitative approach and contextual analysis framework have been conducted on this issue. This study tried to help policymakers and administrators in the field of population policy to be informed about the causes that reduce fertility and make more accurate decisions and strategies to improve the TFR by applying the Leichter model of contextual analysis and providing a better understanding of the factors affecting TFR decline.

2 Method

2.1 Type of study

In this qualitative study, a qualitative content analysis was used. Qualitative content analysis is a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh and Shannon 2005). A qualitative approach and Leichter contextual analysis framework were applied to conduct this study in 2018 to recognize the effect contextual factors on TFR decline in the country and provide policy solutions.

2.2 Selecting experts and key-informants

Purposeful sampling method was used to identify key -informants, and theoretical sampling was then continued to reach data saturation. Regarding the inclusion criteria, individuals or organizations had specific work experiences in the field of population, reproductive health, and policy-making or were educated and informed in this field. Table 1 reveals the individual characteristics of the participants.

2.3 The way of selecting the policy documents

Searching the Internet resources and reviewing the documents at the start of the research resulted in recognizing the most important documents in this field, and a total of 11 documents were collected. Upstream documents were 3 cases, rules 3 cases, plans and programs 3 cases, and eventually, circulars and reports at the national level were 2 cases.

Table 1 Individual characteristics of research participants

| Expert's code | Gender | | Age | Education | Unit/center | Position |
|---------------|--------|--------|-----|-----------|--|---|
| | Male | Female | | | | |
| 1 | * | | 45 | Ph.D | Health and Treatment Commission of Islamic Consultative Assembly | Member of the Islamic Consultative Assembly |
| 2 | * | | 52 | Master | Health Office of Population, Family, and Schools of the Ministry of Health | Manger |
| 3 | | * | 50 | Ph.D | Health Office of Population, Family, and Schools of the Ministry of Health | Senior expert |
| 4 | * | | 41 | Ph.D | Health Office of Population, Family, and Schools of the Ministry of Health | Senior expert |
| 5 | * | | 48 | Master | Civil and Personal Status Registration Authority of Iran | Senior manager |
| 6 | * | | 45 | | Research Institute and Statistics Center | Manger |
| 7 | | * | 55 | Ph.D | Research Institute and Statistics Center | Informed expert |
| 8 | * | | 60 | Master | The United Nations Population Fund (UNFPA) | Senior manager |
| 9 | * | | 62 | Master | The United Nations Population Fund (UNFPA) | Senior manager |
| 10 | | * | 53 | Master | Non-governmental organizations in the field of population | Senior manager |
| 11 | * | | 47 | Ph.D | Professor of Demography | Faculty member |
| 12 | * | | 38 | Ph.D | Professor of Demography | Faculty member |
| 13 | | * | 32 | Ph.D | Researcher in the field of population and reproductive health | Researcher |
| 14 | | * | 30 | Ph.D | Researcher in the field of population and reproductive health | Researcher |
| 15 | | * | 31 | Ph.D | Researcher in the field of population and reproductive health | Researcher |

Most of the documents were among the upstream documents and laws enacted by parliament, as well as programs implemented by governments. Hence, they were at a high and acceptable level in terms of richness and credibility.

2.4 Data collection

The researcher first introduced the objectives of the study and explained the need for its implementation, made the interviewees informed, and obtained their consent to perform the interview and record it by the voice recorder after acquiring a letter of recommendation from the relevant authorities and coordinating with the interviewees to determine the time and location of the interviews. All the selected experts agreed to participate in the study and no one withdrew. All of the interviews were conducted at their office. Their office was chosen for the interview because it was a familiar environment and participant's privacy was respected. The first author did the interviews; since he was experienced in qualitative study and was familiar with the interview method. The interviews were conducted in a semi-structured form, and the average duration was 50 min (40–75 min). The interviews were mostly performed in the workplace and in their free time (for example, before the start of working hours or during the noon break time or after finishing working hours). Therefore, they could express their opinions more accurately and patiently away from disturbing environmental factors. In a qualitative research, the sampling criterion is the theoretical saturation, and whenever there is no new code in interviews, it shows that saturation is reached and the researchers can interrupt the interview process and no longer need to increase the sample size (Marshall 1996; Lebni et al. 2020a). Theoretical saturation was achieved by conducting 13 interviews and the main and sub-categories were formed, but up to 15 interviews were continued for more assurance.

2.5 Data analysis

A framework analysis was used in this study. Framework analysis is a qualitative data analysis method used to organize and structure research data in order to refine the researcher's focus to identify themes (Gale et al. 2013). The following operations were performed in this study, based on analyzing the framework (Onwuegbuzie and Weinbaum 2017) and separately from each of its three stages, including implementation of policies (description stage), classifying and determining the main levels related to the policy-making streams (analysis stage), and the process of coding the material collected from the interviews and its final interpretation (interpretation stage), which was done using MAXQDA version 11 software. The audio was listened several times after the first interview, and then it was transcribed verbatim and meticulously. Then, the full text was read several times for general understanding of the content of the interview. Next, the text was subdivided into independent meanings and was indexed with certain codes. In the next step, the codes were divided into subcategories and categories according to similarities and differences. Finally, a suitable title that could cover the resulting categories was selected. Also, information such as type, year, place and the purpose of publication, the period, and the content of documents were extracted using a checklist. The data were analyzed simultaneously and along with performing the interviews (Table 2).

Table 2 Analyzed policy documents associated with TFR programs

| Upstream documents | Rules | Plan and programs | National Circulars and Reports |
|---|-----------------------------|---|---|
| ✓ Total policies announced by the Supreme Leader | ✓ Family planning | ✓ <i>Atieh Mehr</i> plan | ✓ Circular of the First Vice President on the division of duties of departments |
| ✓ Five-year development plans | ✓ Delivery leave | ✓ Population and family excellence | ✓ The report of the Ministry of Health about ICPD objectives |
| ✓ Resolutions of the Supreme Council of the Cultural Revolution | ✓ Facilitate youth marriage | ✓ Increasing TFR and prevent population decline | |

2.6 Research quality

In establishing trustworthiness, Lincoln and Guba created stringent criteria in the qualitative research, known as credibility, dependability, confirmability, and transferability (Morse 2015; Guba and Lincoln 1994).

2.6.1 Credibility

Those who had information and viewpoints on population policies were included in the study to improve the study credibility. The data had more credibility due to using the maximum diversity in selecting the samples (selection of participants from different governmental, legislative, non-governmental, and international centers). Agree and disagree issues were included in the study without prejudice to have more credibility. Moreover, the triangulation was used in all stages of data collection (interview, observation of noted points, and study of documents) to set the people's points of view, and library and online documents were collectively used to achieve better conclusions. Additionally, it was tried to select proper samples.

2.6.2 Transferability

The interviewer recorded each interview to completely register the information. The recorded and written file of the interviews was also sent to the participants to explain their ideas on it. The interviewer's continuous presence in all the interviews and allocating enough time to achieve more accurate data and the clarity of the working method added to the transformability.

2.6.3 Confirmability

Performing and recording interviews by one person considerably added to the accuracy of the study, which led to a common understanding of the interviewees' questions among interviewees and their answers and opinions to bias prevention strategy and provided more coordination in the framework of the interview.

2.7 Ethical considerations

The relevant code was obtained from the ethics committee of Tehran University of Medical Sciences and Health Services (9,021,460,003) to observe the ethical considerations. The signed informed consent was obtained from the key informants at the beginning of the interview. Also, interviewees were free to withdraw from the study for any reason at any time.

2.8 Results

The results are presented independently for each of the four factors based on the Leichter model in the following table after analysing the issue policy context. *Situational factors* were classified into three general categories, including political sanctions, drought, and low

rainfall, and road accidents. *Structural factors* were presented in the form of nine general sets, including explicit and implicit government policies, absence of supervision, paying no attention to the necessary conditions and etc., living costs and inflation, housing status, employment status, household economic status, and etc. *Cultural factors* were also classified into seven general categories, including divorce, rising education level, socio-economic development, women's employment, increasing the average age of marriage, urbanization, and other issues. Ultimately, *international factors* were presented in the form of two general categories, including international treaties, including the International Conference on Population and Development (ICPD) and Western influence (Table 3).

2.9 Situational factors

They are comparatively transient and unstable situations that can affect a policy (such as war, drought, and government change). These factors are often named as "focusing events". There are some samples of this group of factors, such as the outbreak of the AIDS epidemic, the effects caused by civil war and unrest, changes in national identity, and the collapse of the market. However, the role of other factors cannot be neglected. *Like environmental factors, the role of environmental factors is also raised "for infertility reasons, and issues, such as air pollution, waves, and healthy lifestyle are considered effective factors"* (P3).

2.9.1 Structural and political factors

They are among comparatively changeless society components and are among the nearly stable feature of each field. These factors include the country's political system or structure and the extent of its openness and closeness, and the opportunities that members of society can participate in policy discussions and decisions. Structural factors can also include the type of economy and economic system of the society and the amount of national human resources (managerial capacity, research capacity), and the infrastructure to provide social services, such as education, health services, water, electricity, transportation system, video, and audio media. Social and demographic features or technological advancements are also among these factors.

2.9.2 Cultural and social factors

societies where society's formal hierarchy and values and norms are significant, it is hard to challenge or question administrators or older people. The status of racial minorities or linguistic differences can cause people to have little information about their rights or to provide services that do not realize the individuals' specific needs. Common social values and norms, traditional activities, and religious factors are among the most important samples of these factors.

There were different opinions on the importance of each factor. Some believed that the role of socio-cultural factors was more noticeable. A parliament member emphasized this factor and stated:

This issue is more related to lifestyle and development. When you look at it, all social classes have suffered from a reduction in the birth rate. The people's views and goals

Table 3 Extracted themes about the contextual factors affecting TFR reduction

| Contextual factors | Theme | Sub-theme |
|---------------------|--|--|
| Situational factors | Political sanctions | Disruption in the economic and financial system of the country |
| | | Limitations on improving the business environment |
| | | Difficulty of people's livelihood and the influence on their attitudes on economic insecurity in the future |
| Cultural factors | Drought and low rainfall | Childbearing reduction caused by drought in areas with low rainfall and largely based on agriculture |
| | | The migration of a large number of people, particularly young people to the city, which caused an unbalanced gender context in the village |
| | | Noticeable increase in road accidents and events, which largely involve young and prepared fertile groups |
| | | Orientation of people from family-centered to self-centered |
| Cultural factors | Changes in the people's view and thought orientation | Negative attitude towards reproduction and low desire to have children |
| | | Looking at pregnancy and child upbringing as a period of difficulty and incompatibility with entertainment and recreation |
| | | Aspire to increase the education level and have a job |
| | | Ceremonialism |
| Cultural factors | Changes in the value and behavioral patterns in families | The effect of the failure of near people in marriage on the motivation of young people to marry |
| | | Changing the patterns of marriage, diminishing the main role of families in choosing a spouse |
| | | Extremely care and attention of the parents for the child and enhance their expectations |
| | | Changing attitudes toward marriage that families do not consider marriage as the only option for their daughters |
| Cultural factors | The destructive effects of Western culture | Clergy support of the family planning program and expand its legitimacy |
| | | Developing the pattern out of the marriage, weakening the couple's relationship, and providing the ground for white marriages or cohabitation in society as a family alternative |
| Cultural factors | The destructive effects of Western culture | Weakening indigenous culture and the educational and emotional role of women in raising children |

Table 3 (continued)

| Contextual factors | Theme | Sub-theme |
|--|-------|--|
| | | <p>Spreading egalitarianism gender beliefs and replacing the roles of men and women, and as a result, shaking the family</p> <p>Developing a culture of consumption and consumerism and increasing the costs and consequently reducing the childbearing</p> <p>Anti-family rationality considers the family cumbersome, even if it is possible to create the family</p> |
| Changes in the priorities and tendencies of young people | | <p>The priority of today women according to various situations, presence in society, and not willing to childbearing</p> <p>Higher priority of education, job and social activities and considering the family insignificant</p> <p>Young people do not accept the responsibility for marriage and childbearing and spend their time and money on other cases;</p> <p>Low patterns of childbearing or not timely marriage among elites and celebrities</p> <p>Introducing women as "couples" and not "mothers" through mass media, particularly radio and television</p> |
| Divorce | | <p>The majority of divorced women do not remarry</p> <p>Limitations on childbearing in marriages after divorce</p> |
| Increasing the education level | | <p>Incompetent marriage conditions for women who are studying</p> <p>Delay in fertility among married couples that are studying</p> <p>Increasing women's independence in deciding to have children</p> <p>Progress to gain independence, which is the background of marriage, through continuing education</p> |
| Socio-economic development | | <p>The effect of modern values and development based on the Western-style by weakening family cohesion and kinship network, improving child-driven and reducing parental authorization, and disgracing motherhood and homework</p> <p>Having Less influence by social norms and pressures as in the past and moving towards choices at older ages to obtain more and more complete understanding and preparation</p> <p>Increasing free time in women's leisure time, creating good opportunities for women to leave home</p> |

Table 3 (continued)

| Contextual factors | Theme | Sub-theme |
|--------------------|---|---|
| Women employment | Increasing the average age of marriage | Changing people's attitudes through literacy development, expanding the health network in the villages, and rural development |
| | | <p>No marriage or childbearing conditions for women who are working</p> <p>Incompetent structure of women's employment with their physical and mental conditions</p> <p>Conflict of role of motherhood with economic and social partnerships and, naturally, reducing the desire to have children</p> <p>Attracting the majority of women in fields that are not proper to their situations</p> <p>Increasing girls' education and expanding social freedoms for young people</p> <p>Deficiency in the facilities such as housing, employment, leisure times and other requirements of life</p> |
| Urbanization | | <p>The alteration of the family from the extended to the core form and the responsibility to realize economic needs separately at the start of the marriage</p> <p>Growing the individualism and single life and increasing premarital friendships with the opposing sex</p> <p>Expanding urbanization and consequently promoting apartment living and reducing the possibility of caring for more children</p> |
| Other issues | | <p>Increasing people's expectations for a better life and consequently increasing life costs</p> <p>Increasing social hurts, including addiction and sexually transmitted diseases</p> <p>Developing advanced technologies to control the pregnancy</p> <p>Reducing the rate of a girl bearing with the help of sex detection technologies due to high sexual preferences</p> |
| Structural factors | Cost of living and inflation | <p>Increasing children's expectations and high costs of raising children</p> <p>Concern about uncertainty in the future for children or drawing an uncertain future</p> <p>Inability to have a family and children due to fear of the costs of marriage and family management</p> |
| | The status of housing and employment of men | <p>Less economic advantages of large families</p> <p>Undisciplined status of housing and rental houses</p> |

Table 3 (continued)

| Contextual factors | Theme | Sub-theme | | |
|---|-------|--|--|---|
| Economic situation of households | | People reduce the number of their children to access housing or increase the space of the house | | |
| | | High unemployment rate with emphasis on men | | |
| | | No satisfactory income and low level of wages in the country | | |
| Explicit and implicit governmental policies | | Prevailing difficult and inappropriate living conditions with high economic pressures | | |
| | | Lack of economic security and the unpredictable economic future of households | | |
| | | Increasing the costs of caring and raising children due to the consumerist policies of the market economy | | |
| No monitoring | | Applying explicit policies to reduce the population, such as the government gives no score to fourth children | | |
| | | The government's implicit policies, such as increasing the level of literacy, developing rural areas and expanding health networks, and the agreement of religious scholars and their support to use the tolls to family planning and control the pregnancy | | |
| | | Other implicit programs, including encouraging men and women to marry at an older age, encouraging medical centers to have reproductive health, producing and diversifying contraceptives, prioritizing social activities, and participating in development programs for impera-tive women and top-down incentive policies | | |
| | | Uncertain situation of the population monitoring center and neglect in monitoring programs and policies such as five-year development plans after achieving the desired indices and making no try to correct and revise past population patterns | | |
| | | Institutionalization and extension of population reduction programs without evidence-based evaluation | | |
| | | Influences of the International Conference on Population and Development (ICPD) | | |
| | | International treaties | | Excessive regulation of domestic programs influenced by the country's international commitment |
| | | | | To be affected by the guidelines and programs of international organizations to control births and different types of financial help and programs supported by national governmental and non-governmental institutions from these organizations |
| | | The role of international organizations | | Providing family planning programs with funding from the Population Fund, WHO, the World Bank, and UNICEF |

have become very different, and consequently, cultural and social dimensions are more noticeable; of course, other issues are also helpful, such as economic ones. (P4)

Or one of the senior managers in the registration organization stated:

In general, we do not consider the economic and cultural factors as the first priority in reducing productivity, although we do not reject the effect of the economic factor, of course, not as a serious but possible factor. (P1)

Another senior government manager at the Ministry of Health emphasized the non-economic factor:

I observe and consider more the cultural burden. Marriage will not be facilitated and encouraged by holding a luxurious wedding, but being luxury-oriented will overshadow it. (P2)

One of the faculty members in the field of demography also possessed an opinion in this respect:

The economic situation has not necessarily worsened during these years, along with decreasing productivity and fertility, and in fact, people's desires and expectations of material life have been changed. Consequently, apparently, economic reasons are raised, but it is rooted in the cultural expectations. (P11)

2.9.3 International factors

Factors, such as international trade agreements, international organizations' effect on the dependence between governments, and the effect of international cooperation on health promotion, are considered the other factors affecting the context in the Leichter model. For example, poliomyelitis has been eradicated in many parts of the world by taking national and regional measures and international organizations, such as the World Health Organization (WHO) in most cases. The participants considered economic and international factors more important:

I think economic issues and problems are the main factors and obstacles to childbearing in Iranian families, these obstacles are not apparently cultural barriers, because a person believes that wants a child, and she/he believes that a good child is a blessing and gives soul to the life. So, there are other things involved here that show that they are economic factors. (P15) Or that economic problems are the main cause of many of these problems, because people are less willing to get married as long as they do not have housing, proper employment, and a satisfactory income and it is natural that couples prefer less childbearing based on rational-economic calculations. (P12).

Therefore, although experts identified and categorized various effective factors by reviewing the documents, none of them were able to explain TFR decline alone and should be observed in a complementary manner, and the importance of all of them should be considered in the planning and policies involved in this field.

3 Discussion

To intervene in reducing childbearing and increasing the success rate of designed programs and strategies, policymakers and planners should adopt appropriate strategies that can be done by examining behavior and effective factors. Many factors affect the

reduction of childbearing desire, which was deeply explained in this study. TFR trends in Iran in recent decades can be significantly associated with these factors. The change in population policies was clear and related to the revolution and the war, which affected both official politics and public perceptions of the nation's need for children. The main fertility trend involves an increase to an exceptionally high level in the early 1980s (TFR slightly less than 7) and the next drop rate to TFR at around 2.7 in 1996 (Hosseini-Chavoshi et al. 2016). On the one hand, Iran's population is aging due to low fertility rates. Therefore, politicians should increase fertility rates more than alternative fertility levels. An accurate demographic policy must be established, and the exact level of replacement fertility has to be determined to reach a sustainable population with an appropriate growth rate (Poorolajal 2017). It seems that the decline in population growth in Iranian society is less due to social planning and population control policies (although it should not be overlooked) and is mostly the result of value and structural changes due to modernization in society (Mehrolohasani et al. 2019). However, demographic policies are the main tools used by various countries, such as China and Bangladesh to reduce TFR (Wang and Sun 2016). Demographic statistics show that in recent years, the rate of childbearing in Iranian families has been lower than the "fertility replacement rate" (McDonald et al. 2015). It seems that the decrease in population growth in Iranian society is less due to social planning and population control and is more the result of value and structural changes due to modernization in society (Mehrolohasani et al. 2019). A study in Bangladesh indicated that complex structure is important in decision making for pregnancy, couples' awareness about population increase, fertility, couples' education level, and mother's participation in the workforce (Rabbi and Kabir 2013). Women's participation in the economy has had consequences, including increased social welfare and production levels and increased per capita income. However, along with positive outcomes, TFR has decreased (Heath and Jayachandran 2016).

Several studies have identified socioeconomic status as an important factor associated with fertility. A family limits fertility to increase investment in each child. Evidence of this inverse relationship between socioeconomic status and the number of children was found in Brazil, the United States, Singapore, Ecuador, Colombia, and Peru. Some other studies have found that income had a positive effect on fertility (Adserà 2020; Tejada et al. 2017). The results of a systematic review that investigated the factors related to empowering Iranian women's fertility behaviors showed that empowering women's fertility behaviors is related to the contextual, economic, socio-cultural, and moral-emotional factors (Rashidi Fakari et al. 2018). A study in Iran indicated that low-income and high-income households are more likely to have children than middle-income households. Living in provinces with higher average value-added, in manufacturing institutions or lower average rent rates has led to have more children. Higher levels of gender gap indicators, limiting the household spouse's power in decision-making, affect the likelihood of more childbearing (Moeeni et al. 2014). By planning and making policies aimed at improving women's position and educational and occupational facilities, improving social services and quality of life, and creating equal opportunities for getting access to facilities and credits, indicators of human development empowerment and women's fertility behaviors can be promoted.

In recent years, changes in women's lifestyles have increased women's willingness to study, work, and earn money and be at the top of women's life priorities; as a result, women's employment and participation in the labor market has increased. Moreover, the attitudes toward marriage and roles of wife, motherhood, and even domestic work have been changed, which in some ways have been excluded from the priority of women's lives. This change of attitude has spread from feminist thinking and Western societies

to other countries, including Iran (Boivin et al. 2019). In a study, the gap between marriage and childbearing was clearly affected by social pressure, but it was not related to social support. The lack of meaningful relationships between social support and variables related to the onset of fertility may be related to the lack of proper social support in Iranian societies, even if most women are forced to give birth as soon as possible due to others' interference (Khadivzadeh et al. 2017).

According to a study in 2017, marriage rates and women's education levels had the greatest negative impact on fertility rates. Also, unemployment, family planning policies, cash subsidy payment policies, and annual household expenditures have had inverse effects on TFR (SaberMahani et al. 2017). Research studies have shown that more university-educated women have reduced their fertility rates, and in fact, this phenomenon has helped reduce fertility in Iran in recent decades (Moghadam et al. 2018; Bagheri and Saadati 2019). Based on the results of a study in Iran, there is a positive relationship between employed men and women and fertility rates (Parvin 2016). Cultural factors, such as community literacy, society illiteracy, employment rate, marriage age of women, and the age of society on the one hand, and economic pressures on households, on the other hand, have led to a decrease in the total fertility rate in Iran. A study in Kermanshah reported that socioeconomic and cultural factors affected people's lives in 2011, which acted as a factor in reducing TFR (Abbasi-Shavazi et al. 2009). For fertility policies to be effective with government and politician planning, more attention must be paid to creating marriage conditions and reducing unemployment. Marriage and family formation can be possible in society if it is done by creating jobs, especially for men, providing housing, and raising public awareness. Given that they live in an economically insecure situation, they can not think about marriage and delay it. As a result, childbearing is also postponed.

Cultural backgrounds and national and regional policies that may affect fertility vary in societies (Azmoode et al. 2019). The results of a qualitative study showed that having the belief that the young bride can have more fertility and show the fertility of the family affects the age of marriage and fertility (Lebni et al. 2020b). Religious dependence affects fertility through socioeconomic and demographic characteristics. Religion can affect fertility. For instance, by prescribing or not prescribing contraception, religion can affect people's attitudes toward the number of children and thus, fertility (Nasrabad et al. 2013; Mahmudian and Rezaei 2012). Faith and religious authority can affect TFR at an individual and national level. For example, at the 1994 U.N. Cairo Conference on population, Vatican leaders and Muslims opposed family planning aspects, particularly women's autonomy in abortion (Götmark and Andersson 2020). The increase in faith has been associated with an increase in population worldwide (Johnson and Grim 2013). A study ranked 73 countries as "the most secular," "moderate," or "most religious" (Norris and Inglehart 2011). The average TFR 1970–1975 for most of countries was 2.8 children for an average of 3.3, and for religious ones was 5.4 children. The corresponding values of 2000–2005 were 1.8, 1.7, and 2.8. Several other studies have suggested that religiosity supports high TFR (Akintunde et al. 2013; Hackett et al. 2015; Peri-Rotem 2016).

4 Conclusion

Analysis of fertility policy in Iran shows that various political, cultural, situational, and international factors effectively reduce TFR in Iran. To this end, effective solutions should be considered according to the structural context of politics. Several policy solutions are presented to solve this problem. Strategies should be tailored to the economic conditions of the country by adapting women's participation in the labor market to parenting, granting maternity leave for a decent time with salaries, providing facilities for children in kindergartens, reducing the amount of taxes paid by families based on the number of children, discounts, and flexibility of working women's working hours. Establishing a comprehensive population management system as a single custodian is effective in developing programs and monitoring the organizations involved, as well as observing demographic developments. Culturalization for proper marriage and promotion of youth's awareness about the benefits of marriage, as well as the implementation of cultural and incentive measures and informing people about the positive effects of children in increasing family stability, supporting parents, increasing happiness and solidarity, as well as single-child harms are essential and effective. Reforming the approach of national media with an expert's view and representing issues, such as sexual identity, marriage, family, and lifestyle encourages contentment and tolerance, and foresight instead of consumerism is an effective solution. Special attention was paid to training the skills necessary to choose a spouse and cohabitation at an appropriate age for adolescents and young people tailored to the age group and premarital sex. Considering national policies and international obligations and adapting global programs according to the constitution, social and cultural position, association statutes, and national strategic plans are highly recommended.

Applying a pre-defined framework for this study was helpful in systematic analysis of the policy process and research. However, some important factors and features might be neglected, which should be considered as the limitation of the study. To overcome this limitation, a critical view on the codes and a deep contemplation about their nature was maintained during data analysis. Although the limitation may not be entirely overcome, this approach was definitely helpful. Moreover, discussing and comparing the results of the study with those of other studies with and without a particular framework provided the authors with a comprehensive analysis on the TFR policy process in Iran.

Declarations

Conflict of interest The authors declared that there is no conflict of interest.

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