

# A Comparative Review of the Relationship between Fertility Rate and Gender Equality

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## Abstract

**Context:** The decline in fertility rate is one of the most important social changes that has happened in human history. Given the paucity of research done in this regard, the present study aimed to review the relationship between gender equality indicators and fertility rate.

**Evidence Acquisition:** Gender equity represent an important challenge for fertility research. Primarily, this paper briefly reviewed the research, conducted in certain countries, on gender roles and fertility followed by Gender Gap Index (GGI); because sudden change in population growth in countries led researchers to think about this issue. So searching the past and analyzing data in valid electronic databases, reviewing was done the concepts related to gender equality and population growth and fertility rate.

**Results:** Our findings suggested that to increase fertility rate, gender equality should be achieved.

**Conclusions:** The simultaneous attainment of gender equality and high fertility in any country is likely to be related to economic, social, cultural, religious, and familial conditions.

**Keywords:** Gender equality, Fertility rate, Population growth, Iran

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## 1. Context

The 1994 International Conference on Population and Development (ICPD Program of Action, Principle 4) pushed gender into the center of demographic discussions. This program highlights the fact that sexual and reproductive health and population issues are embedded in religious beliefs, traditional cultural values, and social practices as much as they are enshrined in the principles of human rights (1).

The level of established inequality between men and women at the social level, is often related to indicators of national gender equity levels (2). The relationship between fertility and gender equality has been of considerable political and scientific concern in over the past few decades (2). The latest research on the relationship between gender equality and fertility has mainly focused on the role of the state in reducing the conflict between female employment and familial responsibilities (3-5). The Global Gender Gap Index examines the gap between men and women in four essential categories: Economic Participation and Opportunity, Educational Attainment, Reproductive Health and Survival, and Political Empowerment (6).

The data and messages in the Global Gender Gap Report serve as a clear framework for assessing and relating global gender gaps through specifying countries that optimally divide the resources equally between women and men (6). The World Economic Forum first published the Global Gender Gap Report in 2006. The 2016 report covers 144 major and emerging economies(6).

Gender inequality globally persists, depriving women and girls of their basic rights and opportunities. Achieving gender equality and empowerment of women and girls require more dynamic efforts, including legal frameworks, to counter deeply-rooted gender-based discriminations often resulting from patriarchal attitudes and the related social norms (7).

Gender equality is a human right. Women are entitled to live with dignity and freedom from want and from fear. Gender equality is also a necessity for development and reduction in poverty: empowered women contribute to the health and productivity of families and communities, and they determine the perspective of the next generation. Despite the solid evidence demonstrating the centrality of women's empowerment in reducing poverty, promoting

development, and addressing the world's most urgent challenges, gender equality remains an unachieved goal. Experience has shown that addressing gender equality and women's empowerment requires strategic involvement at all levels of policy-making to improve women's health in life (8).

One of the most important indicators in health and fertility research is the Total Fertility Rate (TFR), simply referred to as fertility rate, which measures the average number of children per woman is (9). Gender equity further represents an important challenge for fertility research.

In this paper provided a brief review of previous research, conducted in other countries, on the relationship gender equity roles and fertility rate in Iran; the sudden change in population growth in Iran has led researchers to contemplate this issue. Given the significant reduction in Iran's population over the recent years, it is highly important to study the factors affecting population control in Iran. A major challenge in developing countries is the achievement of gender equality. Can gender equality be an obstacle to population growth and development in Iran? To answer this question, it is essential to review and study the population indices of other countries. The purpose of the present study was to review the relationship between gender equality indicators and fertility rate, hence the necessity of primarily considering the following concepts.

## 2. Evidence Acquisition

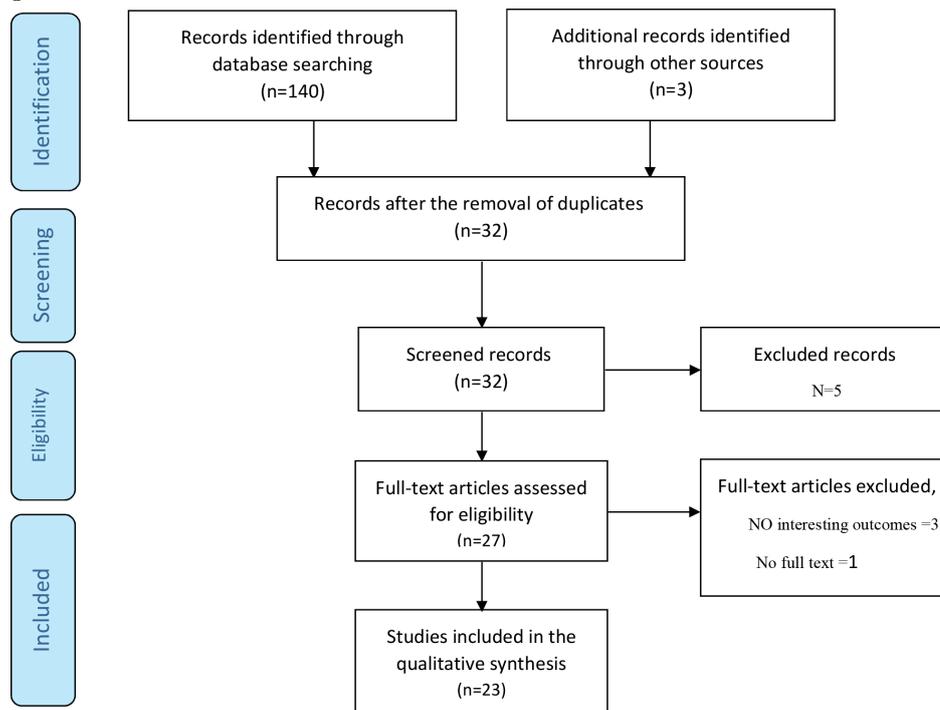
We conducted the search according to the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (10).

In this article, we performed a comparative review on the evidence from 1960 to 2018 via searching Google Scholar's and PubMed databases and internationally valid websites such as the World Health Organization, United Nations, world Economic Forum, Our World in Data, World meters, National Association for Public Health Statistics and Information Systems, United Nations Development Program and UNFPA. We used the keywords "gender equality", "population growth rates", "total fertility", and "population" in the published literature to obtain the objectives of the study. After reviewing the concepts related to gender equality and population growth in the listed sources, we extracted the following findings. We summarized the evidence for countries with published literature on gender gaps and fertility / population growth according to the purpose of the study.

## 3. Results

### *Literature Review on Existing Research*

We searched the relevant literatures in four bibliographic databases. In a first screening, we identified the duplicates and reviewed the titles and



**Figure 1:** PRISMA flowchart showing the literature search

abstracts. We found a total of 32 studies potentially relevant and reviewed finally 23 articles were examined in detail by researchers. Figure 1 shows a flow chart of the study selection process. The findings of our study are based on a review of countries that have considered gender equality and fertility rates in literature.. We listed a summary of the comprehensive search on literatures published in some countries. Countries with no published articles in this field were reviewed only based on valid electronic database and shown in the figures. Detailed descriptions of some countries, including Iran, Sweden, the United States, Italy, Austria, Iceland and Finland are as follows:

*Iran:* Iran is the 18th largest and 17th most populated country in the world with a population estimated at 82.01 million in 2018, accounting for 1.07% of the total world population. Iran is home to many different cultures and religions. Moreover, it has the fourth largest petroleum reserve and the largest natural gas reserve in the world (11). The decline in fertility rate is one of the most fundamental social changes that has happened in human history. Iran is no exception to these changes. As observed in Figure 1, the total fertility rate in Iran decreased from 6.92 in 1960 to 1.72 in 2018. Moreover, Iran's fertility rate was dramatically reduced from 6.5 in 1982 to 1.8 in 2004. The researchers using the online data provided this image (11, 12). In 2017, Iran ranked 140th in the gender gap score (0.583), and its population growth and fertility rates were 1.12 and 1.6, respectively (6). Insert Figure 2

*Sweden:* In the Nordic countries, gender equality is an explicit policy goal; the Nordic societies are considered to be among the most gender equal (13). According to the United Nations' gender empowerment measure, the

top four countries are Norway, Sweden, Denmark, and Finland (14). In 2017, Sweden ranked 5th concerning the gender gap score (0.816), and its population growth and fertility rates were 0.75 and 1.9, respectively (6). Despite Sweden's emphasis on gender equality, its fertility rate has increased since 2000 in the country seems. The comparatively high fertility rate in Sweden and its Nordic neighbors has attracted substantial attention, with relations often having been made to their systems of social policies directed towards working parents and their increasing prominence on gender equality (15). Gender equality may respond the many forces that promote gender and birth country detailed variances in behavior related to family dynamics(15). Therefore, gender equality may on one hand contribute to late childbearing and on the other, favor 'recuperation', thereby increasing the completed fertility (5). Thus, combining childbearing and gender equality may be an approach to preventing the reduction in fertility to very levels as observed in many European countries, all of which had higher fertility rates compared with Sweden until about 20 years ago (5). Duvander found a higher degree of equality to be absolutely linked with couple fertility and father's understanding of parental leave was related to continued childbearing (16) and it leads to the second and third birth(16). It is clear that Swedish fathers and mothers are making work adjustments, a movement stimulated by Swedish family policies that promote gender equality (16). Kaufman observed that a majority of couples made certain adjustments to their work lives after having their first child (17). When both partners have the same attitudes, it is more likely that they make work adjustments following the birth of a child and the husbands performance on equal attitudes (17). For example if men are more likely to travel for work in the first place, it may afford a possible area of

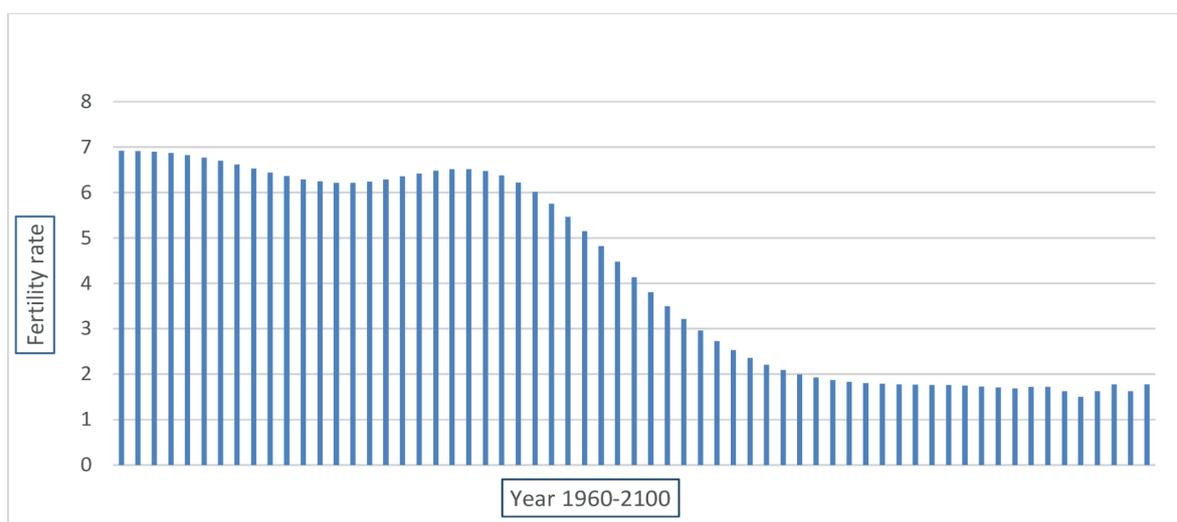


Figure 2: Trend of fertility rate in Iran in 1960-2100

change for those men who would like to spend more time with their families (17). In order to achieve gender equality in family roles, it is important that the husbands make work adjustments so they can spend more time at home. This will most likely ensue if the husbands actually believe in gender equality (17).

The possibility that gender equality in the family could lead to increased fertility at first appears to be impossible, as improved gender equality has been linked with low fertility for a long time(18).

*The United States:* In 2017, USA ranked 49th regarding the gender gap score (0.718), and its population growth and fertility rates were 0.70 and 1.9 (6). More recent studies examined the methods of gender equality with higher fertility in the United States (19, 20). Torr and Short showed that both the most modern and traditional housework were certainly associated with fertility (21, 22). These findings indicate the fact that modernization and more equal opportunities for women and men do not necessarily lead to parental gender indifference (23). Pollard and Morgan studied the sex composition of previous offspring and third births in the United States; they suggested that the changes in the society's gender system might have led to parental gender insignificance, resulting in the reduced effect of children's sex on parents' fertility decisions (24).

*Italy:* Mencarini and Tanturri reported that a gender symmetric role set among parents with high socio-economic status in Italy increased their likelihood of having another child (25). Mills a. showed a negative correlation between the irregular separation of

household labor and fertility intentions in Italy and the Netherlands, particularly among working women and mothers (26). Mills observed that the imbalanced separation of household labor impacted women's fertility intentions when they already bear a heavy load of work hours or children responsibility, which was chiefly noticeable in working women in Italy (26). In Spain and Italy, data from the European Community Household Survey suggested that where fathers played a major role in taking care of the firstborn, the transition to a second birth was faster (27).

*Austria:* Buber showed that in Austria, fathers' participation in child care was associated with mothers' childbearing intentions (28). Tazi-Preve confirmed that the unequal distribution of household labor lowered the fertility intentions in Austria (29).

*Iceland:* Iceland ranked 1th in the gender gap score (0.878) in 2017, its population growth and fertility rates were 0.72 and 1.9, respectively (6), and it never experienced the periods of low fertility levels as did most other European countries such as the Nordics (30). As of 2013, the Icelandic TFR has never fallen below 1.9 whereas other Nordic countries displayed a total fertility rate (TFR) below 1.7 at some point during the past 30 years, and Denmark and Sweden have even experienced a TFR below 1.5. In fact, TFR in Iceland has with replacement level of 2.1 children per woman (31).

*Finland:* This country ranked 3rd in the gender gap score (0.823) in 2017, and its population growth and fertility rates were 0.75 and 1.8, respectively (6). Miellinen presented evidence from Finland as a country with a reasonably high level of gender equity in both

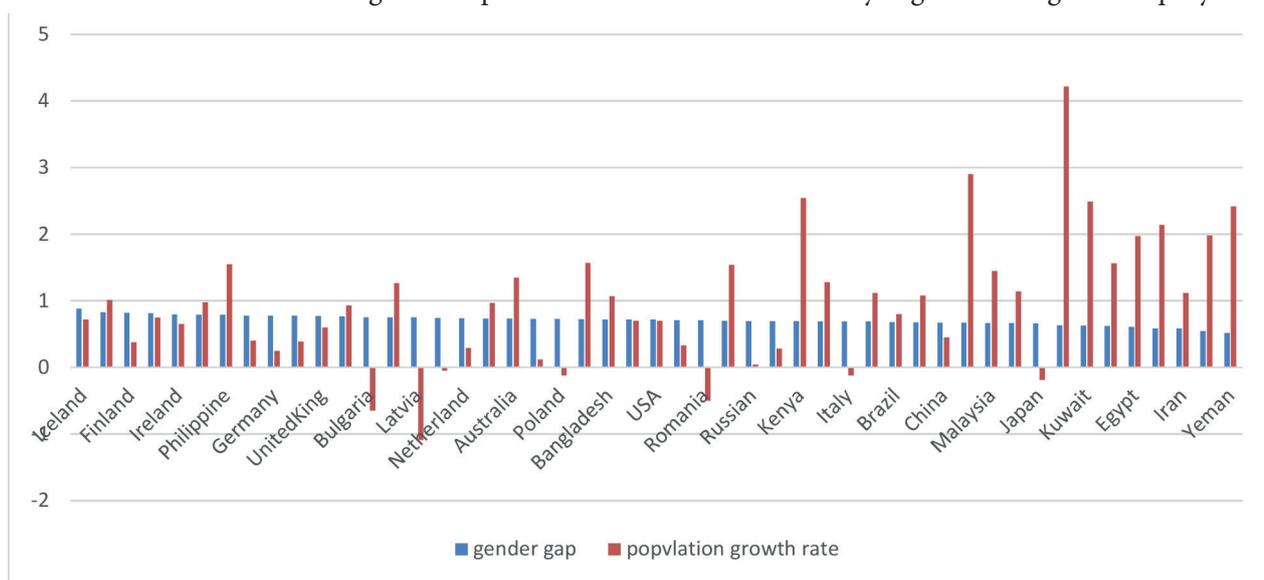
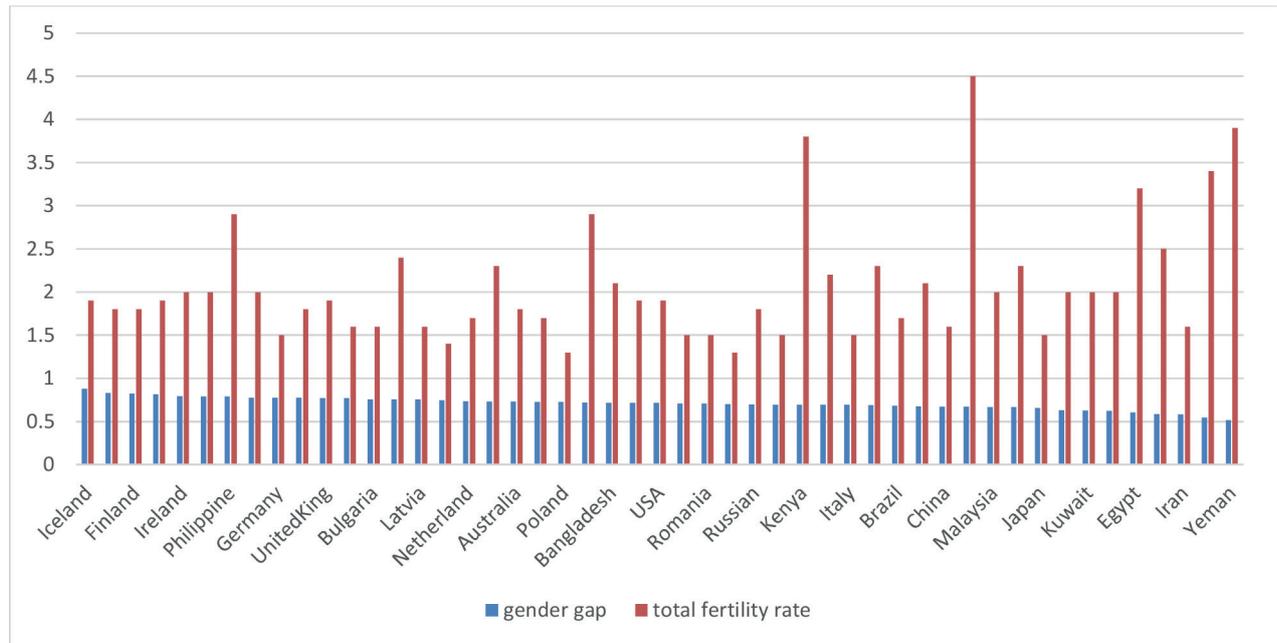


Figure 3: Comparison of the relationship between gender gap score and population growth rate in different countries



**Figure 4:** Comparison of the relationship between gender gap score and fertility rate in different countries

public and private life; the support for gender equality was associated with higher fertility intentions among childless men (32). Figures 3 and 4 illustrate the items listed in the chart developed by our researchers (6, 12). As shown, in countries with high levels of gender equality, population growth and fertility rates were not necessarily low. For instance, population growth was negative in a country like Japan which ranked 114th in gender equality while in a country like the Philippines with a gender equality of 10, the population growth and fertility rates were high.

#### 4. Discussion

Our findings in this study suggested that to increase the fertility rate, achieve gender equality should be not ignored. The positive or negative relationship between the various studies is due to the differences in the social and cultural conditions of the demographic policies in establishing gender equality. For example, Gold Scheider holds that that to decide on each country's fertility changes, must be consider cultural and social conditions in different aspects of life or work-life. (33). Familial policies also play a role in the variations of fertility rates (5). Neyer showed that the effects of gender equality on childbearing intentions varied by gender and parity (34). A U-shaped relationship was further observed between gender equity and fertility in American couples (20). Moreover, Pau Baizan found that the general equal of childcare coverage was definitely related to fertility (35). In contrast, the articles of Peter McDonald (36) proposed that the imbalance between

high gender equity in education and employment and lower level of equity in family life, lead to decline of fertility in developed countries.

Low fertility (TFR below 1.5) is often seen as a result of gender inequality in different aspects of life such as economic resources, employment, and care work, accepted as important for childbearing in the current societies(34). The experimental results showed that less gender equality did not always imply lower fertility intentions or less childbearing and more gender equality did not necessarily lead to higher fertility intentions or more childbearing (34).

In countries where women still have only limited access to education, the fertility rates are very high. In Nigeria, women in the reproductive age have only 1.3 years of education on average; if we are concerned about population growth, we should provide women with access to education (37). In 1950, Iranian women had an average of only three years of education, they had seven children on average. Sixty years later, Iranian women had an average nine years of schooling, and they had 1.8 children on average (37). Based on different studies, educated women prefer the "quality" of raising children to the "quantity" of the number of children(37). Women's increased participation in education and the labor force and the availability of contraception have been contributing factors in reducing fertility (38). There are other factors that impact fertility, including health, economic situation, household division of labor, and society's empowerment of individual choices

(39). Gender equality policies cannot be expected to positively influence fertility in a traditional society (40). McDonald emphasized that gender equity on both individual and familial levels was necessary to increasing fertility among women due cultural values (4). Policies aimed at supporting female labor market attachment and helping gender equality have made it easier for women to manage work and family life (3).

The present study is in line with Anderson's research in which much weaker associations existed between the labor market status and the continued childbearing of parents (15). It seems that once childbearing begins, the role of intervening factors such as the labor market attachment of parents is not that important in childbearing decisions (15). Research results in Iran showed the positive effect of governmental incentives in couples who tended to have lower fertility rates and delay the onset of childbearing (41); furthermore, personal social networks (42), family support (43), and circumstantial, economic, child-training abilities and health-related conditions (44) are influential in this matter. With the data we have at hand, we can determine whether this pattern replicates the positive role played by couple gender equality in childbearing, meaning couples with the father able to dedicate more time to childrearing tasks would be more inclined to have a bigger family (15). Interestingly, while Iceland ranked first in the gender equality score, its fertility rate did not decrease. Therefore, gender equality cannot be considered as the cause of reduced fertility (6). Time is an important factor in population balance, so it is important how this demographic transition can happen and how fast does decline of fertility rates.

In Iran, the fertility rate fell from more than six children per woman to less than three children per woman in only 10 years (4). China made this transition over 11 years prior to the introduction of the one child policy; however, in developed countries, the transition to low fertility rates has increased over time. In the 19th century, it took the United Kingdom 95 years and the US 82 years to reduce fertility from more than 6 to less than 3(37).

## 5. Conclusions

Our findings showed that gender equality is not an obstacle to population growth. In most developed countries with a high gender gap score, have been accompanied by increased fertility following a short period of fertility decline. It can be concluded that the improvement in gender equality cannot necessarily

result in reduced fertility, and will not be the only factor affecting population growth. Accordingly, there exist other factors and variables that affect the population growth. It is important to achieve gender equality because the education and empowerment of women and increase in their financial and social independence will augment the development indicators. Educated women can have healthier and more efficient children by considering the quality rather than the quantity of childbearing. Therefore, our solution should not only increase gender equality, but also augment the fertility rate. One of these solutions can be increasing the participation of men and division of responsibilities in matters of home and child care in the policies and programs designed by the government, the important factor in population control policies is the time taken to adjust the population. Time management and avoiding hasty declines in the population maintains the balance between achieving gender equality and fertility rate. It is recommended that future studies consider the role of religion as an effective factor in the relationship between gender equality and population growth.

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## Conflict of interest

The authors declared no conflict of interest.

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