

Analyzing Fertility Indicators: A Meta-Analysis of Existing Literature

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Received: 13 August 2019

Accepted: 19 July 2020

Extended Abstract

1. Introduction

Fertility refers to the experimental and potential behavior and act of childbearing; in other words, it is the number of living children that a woman is capable of bearing during her 35 fertile years. In recent years, there has been numerous studies conducted both in Iran and other countries on fertility indicators. This study is an attempt to examine fertility indicators of the past decade in both Iranian and foreign inquiries. The method adopted is meta-analysis and the population of the study consists of the entire scientific valid papers published in credible Iranian and foreign journals during the past decade. Out of 80 research papers related to the subject at hand, 45 studies on fertility indicators published from 2009 to 2019 were selected and then analyzed using CMA₂ Software. Results obtained from systematic review of effective variables on the extent of fertility or fertility indicators in the examined research yielded 45 related variables. Fixed effect value of 0.770 and random effect value of 0.695 demonstrate the high impact of the 45 variables on the extent of fertility; the top 7 variables include the power of women in family hierarchy, women's education in economic shifts, high age of marriage, fitness, abortion, father's education in upbringing, and women's education had the highest effects on fertility, respectively.

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2. Review of Literature and Theoretical Framework

Fertility is one of the threefold factors in population development. It appears that the extent of demographic fluctuations is a function of fertility more than any other factor. Though this index features biological and physiological aspects, it originates from economic, social, and cultural elements.

In general, there are no comprehensive theories on fertility. Yet unquestionably, fertility developments are under the influence of a number of interacting factors. However, the share of each factor in increasing or reducing fertility, understanding causal impacts, or restriction of factors do not exist in a systematic classification. To date, there has been various views and theories put forth to explain fertility developments in different countries and regions.

According to theories, it can be concluded that both voluntary and involuntary factors affect fertility. Voluntary factors include the age of marriage, pregnancy prevention, gender and age structure of the population, distancing between births, etc., which can be controlled by parents voluntarily. Involuntary factors involve social, cultural and environmental aspects, along with couples' compatibility with said factors.

3. Method

Meta-analysis is an approach or a toolbox intended for quantitative integration of data obtained from several studies with the purpose of discovering novel relations that cannot be attained using separate, individual inquiries (Qazi Tabatabaei & Vadadheer, 2009). The present inquiry is an applied study and can be considered as a quantitative research given the adoption of the meta-analysis method as well as the nature of the collected data. The total population of the study included the entire body of research on fertility indicators with the following keywords in Persian: fertility indicators, effective factors on fertility, and childbearing indicators; the following keywords in English were also considered in research published since 2008 to 2018.

In this study, first a systematic review was carried out to search for both foreign and domestic papers on fertility indicators within valid scientific databases. CMA₂ software was used to calculate the impact size of the factors. The extracted statistical data such as correlation coefficient was converted into impact size. To equalize and compare impact sizes, Hunter and Schmidt's method was employed. Finally, impact sizes were mixed and the result was interpreted based on Cohen's table.

4. Results and Discussion

Out of the 80 examined papers (35 Persian and 45 English papers) in this study, 45 papers compatible with the criteria set in the study were selected. The purpose of this study was to identify fertility indicators in pervious literature.

All 45 selected studies have been conducted using surveys, and all of them involved theoretical frameworks and hypotheses. 18 studies (40%) were written in Persian and related to the Iranian context at various levels of cities, province, or the entire nation; 37 studies (60%) were related to European nations as well as developed and developing countries conducted at the level of region or nation. Papers with more significance levels related to fertility were selected in this study. The entire 56 variables and the size of fixed and random impacts calculated for all variables via software suggest the effectiveness of all 45 selected variables on fertility; however, calculations showed 7 factors that had higher effects on fertility.

5. Conclusion

Out of the 46 variables entered into the software, 7 variables involved sizes larger than the others which included the power of women in family hierarchy, women's education in economic shifts, high age of marriage, fitness, abortion, father's education in upbringing, and women's education had the highest effects on fertility, respectively. There is a negative, inverse relation between these variables and fertility. In other words, increase in these variable results in reduced fertility.

Keywords: Fertility, Indicator Factors, Meta-Analysis

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