Socioeconomic Differentials in Fertility in Korea: Period and Cohort Analysis

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Abstract

Korea's period total fertility rate has been less than 1.3 children per woman for nearly 20 years. This study analyzes the fertility rate by socioeconomic group and identifies which group is the primary driver in the recent drop in fertility rates. Data from the Population Census and Vital Statistics of Korea were used to examine period and cohort total fertility rates by level of education, employment status and occupation. Results of the analysis are similar to those in previous studies, showing that highly-educated women exhibit lower fertility rates than women with lower levels of education on aggregate. However, recently women with less education tend to have smaller numbers of children than women with more. When women with the same level of education were sorted by occupation, the analysis reveals that women with jobs of comparatively low occupational status, such as service and sales workers, exhibited lower fertility rates than professional women. The result of a decomposition analysis demonstrated that recent changes in total fertility rates for both period and cohort could be attributed to the changes in the fertility rate rather than the changes in the population composition. The group that most contributed to the decline in the total fertility rate was found to be women with lower levels educational attainment or occupational status. It indicates that income effects exert greater influence than the opportunity cost effect in determining childbirth given the high cost of childcare and education in Korea.

1. Introduction

The period total fertility rate in Korea has been lower than 1.3 births per woman since 2001. In 2018 the total fertility rate was tentatively estimated at 0.98 (Statistics Korea, 2019). In order to increase the fertility rate the Korean government has expanded family policies. The persistence of the remarkably low birth rate suggests that government policies implemented thus far may have not targeted the issue effectively. Childcare services and a child allowance are universally provided, but lack special consideration for middle class families. The parental leave policy mostly benefits women in permanent full time or professional occupations. In recent years, social stratification has taken hold in Korea and

the birth rate for each socioeconomic group may change differently than they otherwise would have in the past. Women with low socioeconomic status who historically exhibited relatively high fertility rates may be forgoing childbirth due to difficulties in marriage and raising children. On the other hand, the upper class, who have a comparably large amount of resources for raising children, may display higher fertility than the middle class. In this respect, the fertility rates that differ by socioeconomic group may provide clues to explain the prolonged phenomenon of the ultra-low overall fertility rate in Korea.

This study analyzes period and cohort total fertility rates by socioeconomic group to see how fertility rates are changing among them. Based on the results, this study identifies which groups are the primary force behind dropping fertility rates. The findings of this study carry implications for the recent expansion of family policy in Korea.

2. Methods

Data from the Population Census and Vital Statistics was used for this analysis. The cohort total birth rate was analyzed using data from the Population Census for the birth cohorts of 1956-60, 1961-65, 1966-1970, and 1971-1975. For the period total fertility rates this study used data from Vital Statistics for the years 1997, 2000, 2003, 2006, 2009, 2012, 2015 and 2017. Differences in total fertility rate were examined by level of education, employment status and occupation. Education levels were subcategorized into two groups: those women with a secondary education or less and those women who had completed tertiary education. The cohort total fertility rate was further subdivided into four groups: women with a middle school education or less, women that had graduated high school, university graduates, and those women who had obtained advanced postgraduate degrees. Employment status was divided into two groups: employed women and unemployed women. Occupations were classified into four types: routine or manual labor, service and sales, clerical and office work and professional employment. Changes in total fertility rate were decomposed into the proportion of changes in the fertility rate and the proportion of changes in the population composition by using the methodology of Das Gupta (1993).

3. Results

From the 1956-60 birth cohort to the 1971-75 birth cohort, the cohort total fertility rate of women with a secondary education was about 0.2 births per woman higher than that of women with college degree or higher. Also, the period total fertility rate was higher for women with a secondary education or less than for women with college degree or higher until 2015. However, in 2017, the period total fertility rate of women with a secondary education or less dropped to nearly match the rate exhibited by women with college degree

or higher (Figure 2). Cohort total fertility rates do not much differ between employed and unemployed women, however period total fertility rates of employed women were significantly lower than those of unemployed women (Figure 3).

Typically the cohort total fertility rates of women with higher levels of education or a professional occupation decrease first, followed by the cohort total fertility rates of women with low educational levels or low occupational status (Figure 4). However changes to this pattern can be observed: for the 1971-75 birth cohort, the fertility rates of women with a middle school education or less were lower than those of high school graduates. While the period total fertility rate significantly fell for all educational levels from 1997 to 2017, fertility rates of women with a secondary education or less fell more rapidly than those for women with a college degree or higher. Looking at women with same level of education, such as high school or college graduates, the fertility rate exhibited by women in the same educational grouping was higher for professional women than it was for of service, sales or office workers for the 1971-75 birth cohort (Figure 5). The period total fertility rate of unemployed women fell sharply while fertility of employed women has risen somewhat though at very low levels (Figure 6).

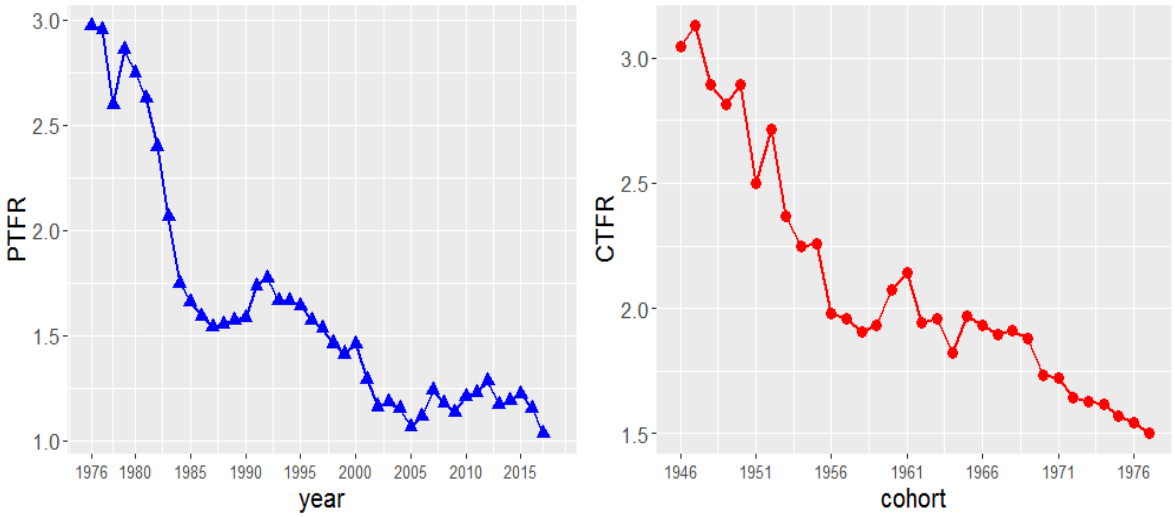
The results of decomposition analysis show that the recent decline in both period and cohort total fertility rates was due to changes in the fertility rates themselves rather than changes in population composition (Figure 7, Figure 8, Figure 9). Moreover, the recent decline in the total fertility rate can be largely attributed to the decline in the fertility rates of poorly-educated women (Figure 7, Figure 8). In the past, the changes in fertility rates exhibited by unemployed women had a large influence on the overall decrease of cohort total fertility rates. However recent changes in cohort fertility rates were much more driven by declines in the fertility rates of women of low occupational status (Figure 9).

4. Conclusions

In the past, total fertility rates of women with low levels of educational attainment or occupational status were somewhat lower than those of women with high educational attainment or occupational status. The drop in the total fertility rate was driven by changes in population composition as well as changes in fertility rates with similar proportions. In recent years however the changes in the fertility rate, rather than the changes in the population composition, have exerted more influence on the changes in both cohort and period total fertility rates. It implies that the difficulties facing women that do decide to have children are playing a leading role in reducing fertility rates, and the impact of changes in female population characteristics, represented by level of education or occupation, is

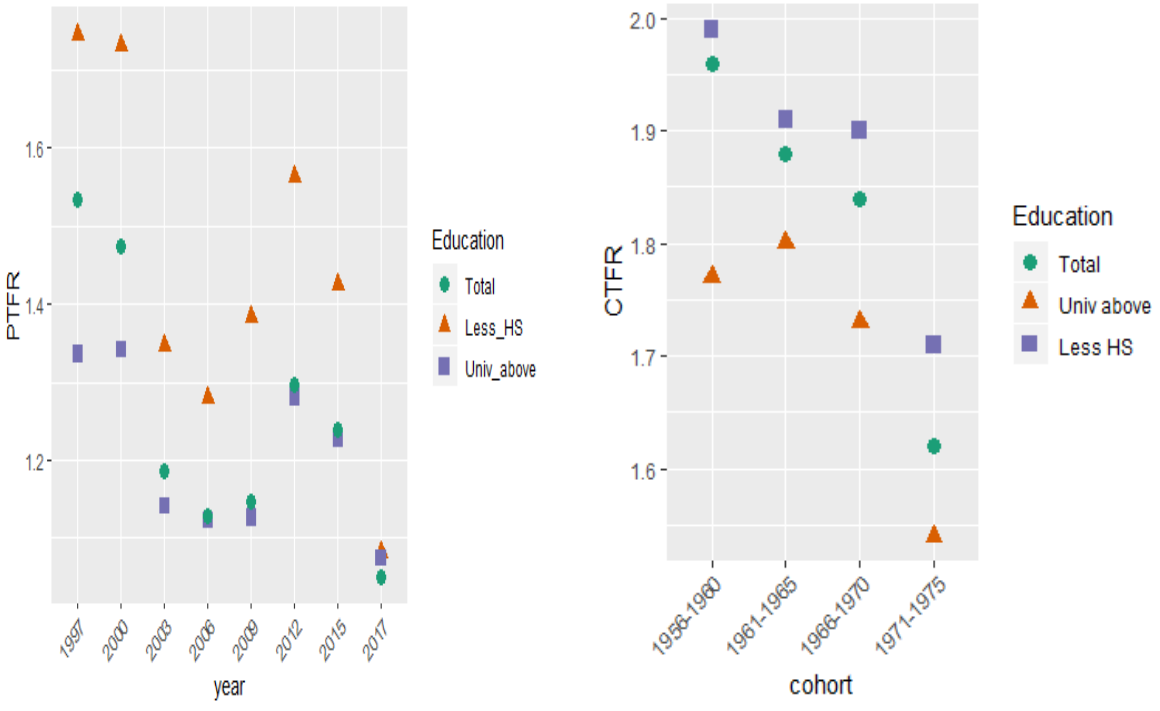
diminished. The recent drop in total fertility rates was largely driven by women with low levels of education and jobs on the lower rungs on the occupational ladder. In Korea, where a child's educational expenses are considerably high, the income effect of childbirth would exert more influence than the opportunity cost effect. The increase in the fertility rate of working women, although still lower than that of unemployed women, shows that policies that balance work and personal life might be paying off.

[Figure 1] Trends in Period Total Fertility Rates and Cohort Total Fertility Rates



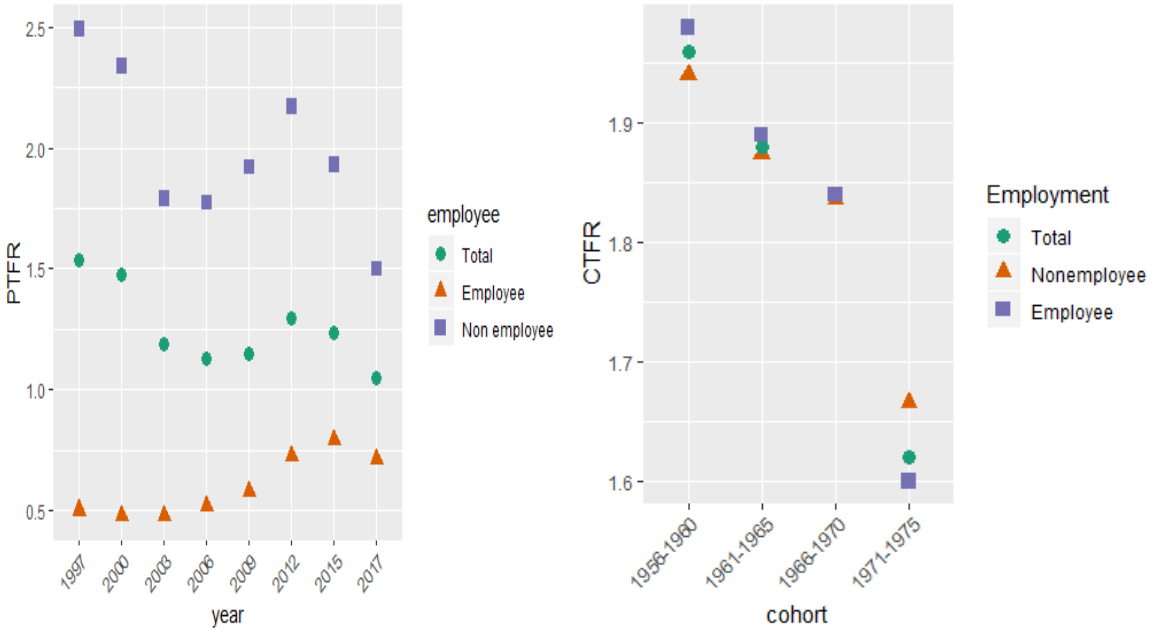
Source: Myrskylä et al (2013) and Statistics Korea (2019) Vital Statistics

[Figure 2] Period Total Fertility Rates (PTFR) and Cohort Total Fertility Rates (CTFR) by Educational Attainment



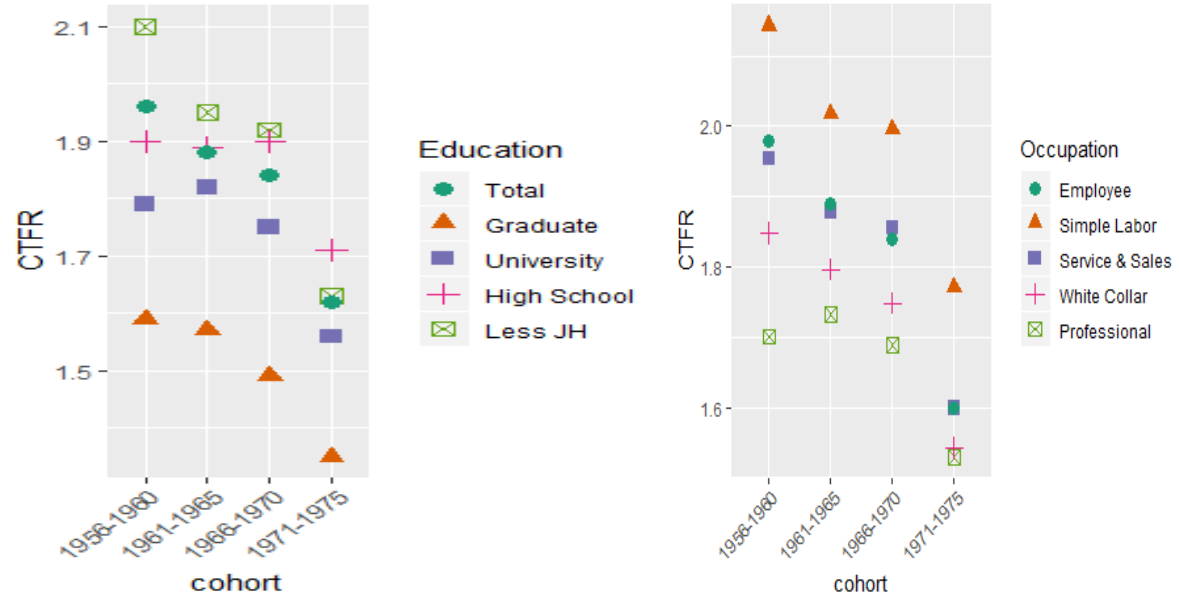
Source: Statistics Korea (2019) Population Census and Vital Statistics, each year

[Figure 3] Period Total Fertility Rates (PTFR) and Cohort Total Fertility Rates (CTFR) by Employment Status



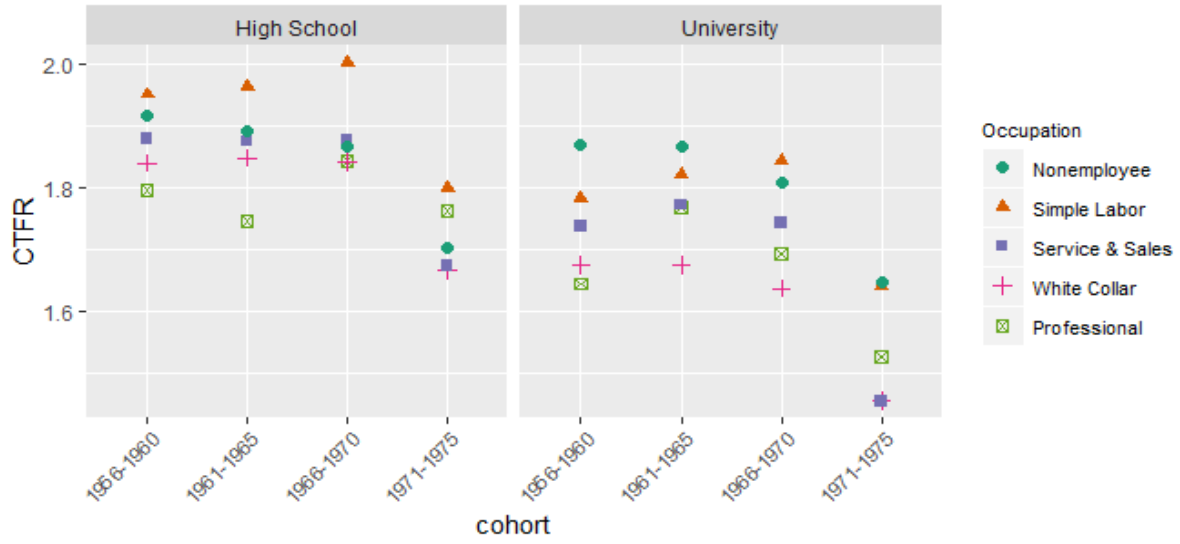
Source: Statistics Korea (2019) Population Census and Vital Statistics, each year

[Figure 4] Cohort Total Fertility Rates (CTFR) by Educational Attainment and Occupation



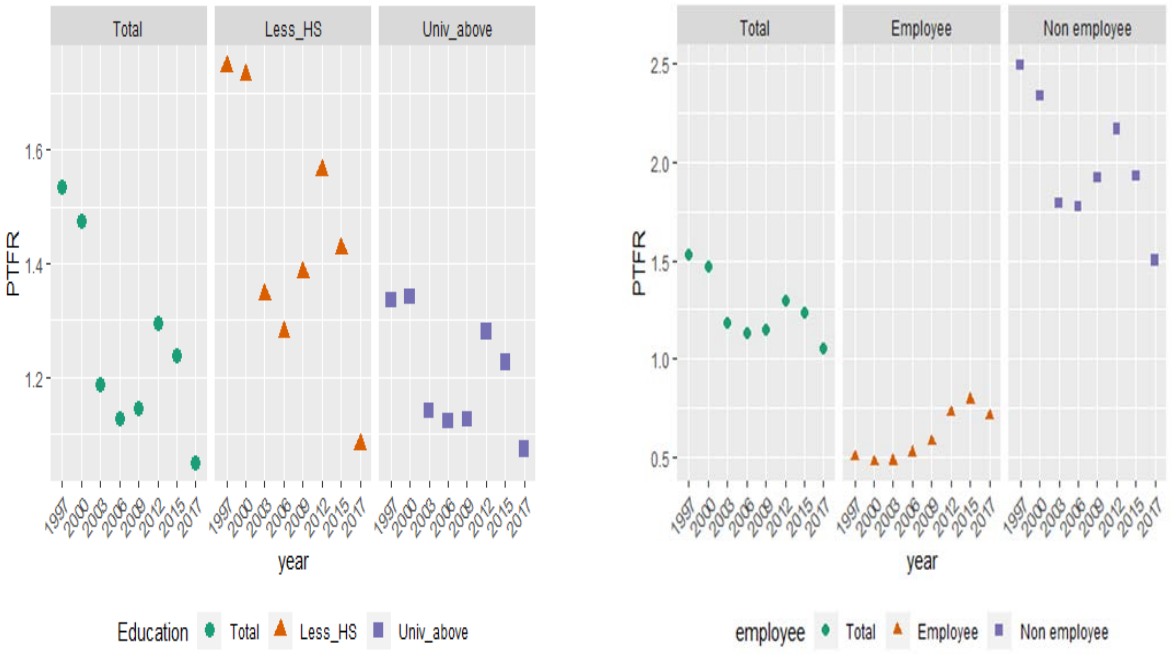
Source: Statistics Korea (2019) Population Census, each year

[Figure 5] Cohort Total Fertility Rates (CTFR) of High School Graduates and College Graduates by Occupation



Source: Statistics Korea (2019) Population Census, each year

[Figure 6] Period Total Fertility Rates (PTFR) by Educational Attainment and Employment Status

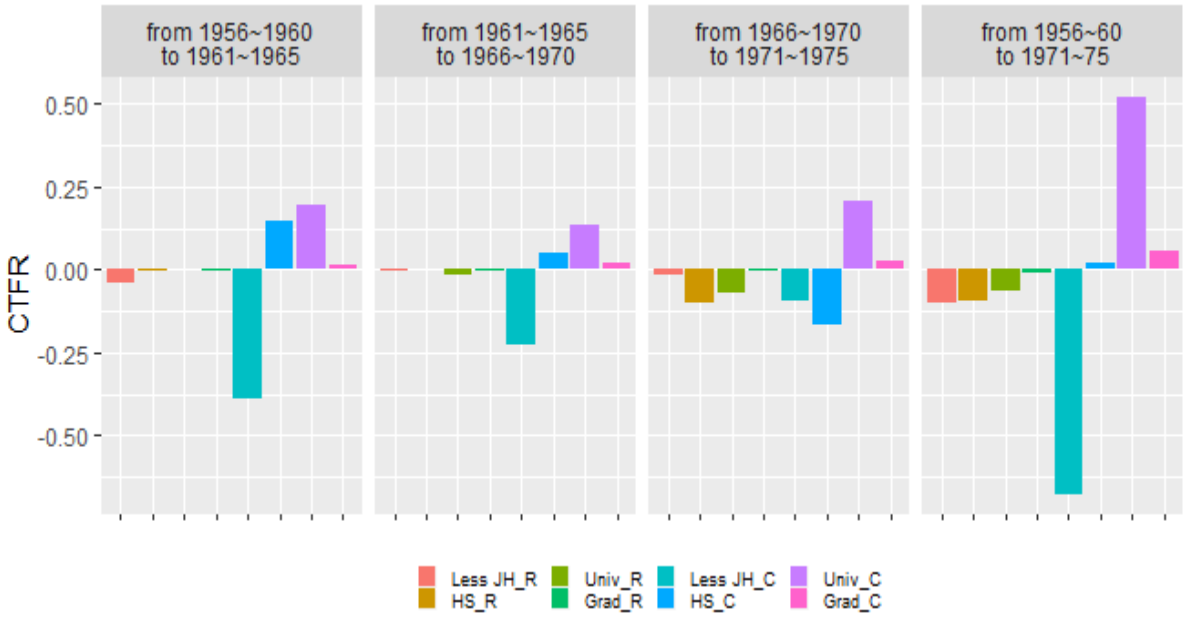


Source: Statistics Korea (2019) Vital Statistics, each year

[Figure 7] Results of Decomposition Analysis by Educational Attainment for Period Total Fertility Rates

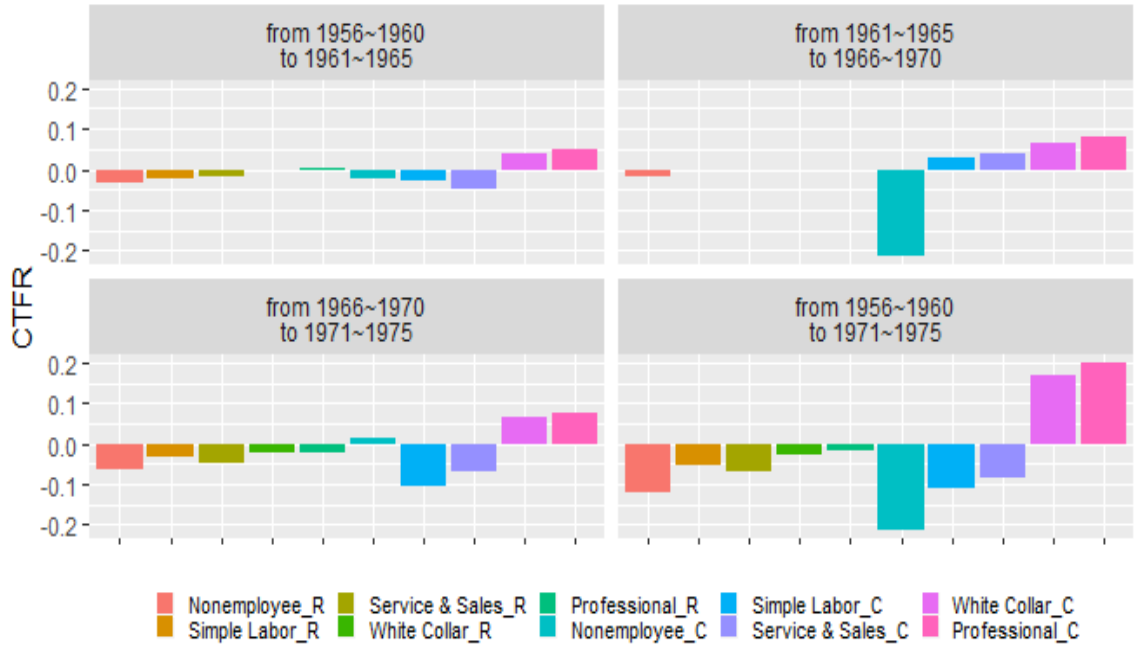
Source: Statistics Korea (2019) Vital Statistics, each year

[Figure 8] Results of Decomposition Analysis by Educational Attainment for Cohort Total Fertility Rates



Source: Statistics Korea (2019) Population Census, each year

[Figure 9] Results of Decomposition Analysis by Occupation for Cohort Total Fertility Rates



Source: Statistics Korea (2019) Population Census, each year