

## **Trends in cohort childlessness and completed fertility in Finland: Persistent and strengthening inequalities in family formation**

**Short abstract:** Using total population register data, we compare cohort fertility (cohort total fertility (CTF), ultimate childlessness, cohort total fertility and parity progression ratios) by educational level and gender in Finland. We find persistent (men) and strengthening (women) educational disparities in family formation. The overall stability of CTF levels and the persistency of educational differences in CTF masks remarkable changes in fertility patterns that have occurred among women with different levels of education. Childlessness among low-educated and medium educated women has increased strongly across cohorts. In contrast, childlessness levels have plateaued and now show a clear *decline*. Among women who had at least one child, we see a clear CTF increase among basic and, to a lesser extent, among secondary educated women. Lower educated women are increasingly likely to progress to third and fourth parity. Much of the increase is linked to childbearing across several partnerships. In other words, fertility patterns among lower educated women show increasing polarisation into childlessness vs. having larger number of children. This is consistent with our more general observation of what we call double polarisation whereby family-life courses of those with lower education levels are polarised into childlessness and (almost) neverpartnering on one hand and (often early) non-union childbearing, single and non-residential parenthood, and childbearing across several partnerships on the other. In contrast, the family life courses of highly educated men and women are more uniform and characterised by less fragmentary partnership trajectories, enabling continued childbearing with one partner.

### **Introduction**

The Nordic countries are experiencing an unexpected fertility decline. In Finland, this decline is particularly strong: TFR has declined 25% in just 8 years, from 1.87 in 2010 to 1.41 in 2018. Further, in Finland, the increase in childlessness is exceptional. In 2017, 32 percent of men and 21 percent of women were childless at age 40. Among 35-year-olds, the percentages are remarkably high and suggest that ultimate childlessness will continue to increase. Our recent research reveals persistent (men) and shifting (women) educational disparities in Nordic fertility (Jalovaara et al. 2018) but next to nothing is known on developments during the recent fertility decline. This study describes recent developments in cohort fertility and childlessness by educational level and gender in Finland.

### **Data and methods**

Our analyses are based on individual-level data drawn from population registers and from registers of educational degrees. Our data covers the entire population of Finland. We focus on women and men who were born in Finland in 1940 or later, and we only include data on persons who were alive and resided in Finland at the age 40 for women and 45 for men who were registered in the Finnish population at age 40 or 45 for women and men, respectively.

We measure cohort total fertility and childlessness levels (%) at age 45 for men and 40 for women. In the present analyses, we measure each individual's highest level of education ever attained by year 2017. We distinguish four educational levels: basic, medium, lower tertiary, and higher tertiary.

We focus on four outcomes: Cohort fertility, childlessness levels, cohort fertility among those who have at least one child (i.e., average numbers of children born for parents), and parity progression ratios.

The analysis covers 5-year birth cohorts born from 1940. The last cohort we observe ‘completed fertility’ (CTF) and ultimate childlessness is 1970–72 for men and 1975–77 for women. In analyses focusing on average numbers of children and childlessness levels at age 35, the youngest cohort is 1982.

We perform all analyses separately for men and women.

## **Preliminary findings**

We observe that cohort total fertility has still remained stable. That is, the remarkable drop in period-TFR does not yet show in CTF at age 40 (women) and 45 (men). In the last cohort, the levels were 1.8 and 1.7, respectively. Women and men in those cohorts had on average nearly as many children as women and men born in the 1940s.

Figure 1a shows that CTF has remained fairly stable in all educational groups. In the most recent female cohort, tertiary educated women have still have had slightly fewer children than women than lower educated women.

Compared to women, the association between men’s education level and their CTF is the opposite: in all observed male cohorts, there is a positive association between the level of education and cohort fertility. There are slight declines in CTF across male cohorts in all educational groups. In all educational groups, differences in CTF between the two most recent cohorts are negligible.

Figure 2b shows men’s childlessness levels at age 45. Childlessness levels show remarkable increases in all educational groups. In the most recent cohort, 35 percent of low educated men and 31 percent of medium educated men were childless at age 45, compared to 23 percent and 21 percent among men with lower tertiary and higher tertiary education, respectively.

Figure 3a shows men’s CTF for men who had at least one child. In the recent cohorts, we observe remarkable stability and no differences between educational segments.

This overall stability of CTF levels and their educational differences among men and women masks remarkable changes in fertility patterns that have occurred among women with different levels of education.

In women’s childlessness, we observed an intriguing change in educational disparities (Figure 2a). Our previous study (Jalovaara et al. 2018) revealed some of it but the recent changes are even more dramatic. Among women in the oldest cohorts in all four countries, childlessness is clearly highest among the highly educated. However, childlessness among low-educated women has increased almost continually, and the same is true for medium and even lower tertiary educated women. In contrast, among higher tertiary educated women, childlessness levels have in fact plateaued and now show a clear decline. As a result, the patterns have changed entirely across the cohorts: in the most recent female cohorts, childlessness levels are by far highest among the least educated. Striking is that although TFR levels are on strong decline, increasing proportions of tertiary educated women in these recent observed cohorts became mothers.

Figure 3a shows women's CTF for women who had at least one child. Interestingly, we see a clear increase among basic and, to a lesser extent, among secondary educated women. In other words, fertility patterns among lower educated women show increasing polarisation into childlessness vs. having larger number of children. Parity progression ratios (Figure 4) further show that towards more recent cohorts, basic and medium educated women are increasingly likely to have third and fourth children. Our preliminary results suggest that this is to a large extent related to childbearing across partnerships or 'multipartnered fertility'. This in turn speaks for our more general observation of what we call double polarisation whereby family-life courses of those with lower education levels are polarised into childlessness and (almost) neverpartnering on one hand and (often early) non-union childbearing, single and non-residential parenthood, and childbearing across several partnerships on the other. In contrast, the family life courses of highly educated men and women are more uniform and characterised by less fragmentary partnership trajectories, enabling continued childbearing with one partner.

Jalovaara Marika, Neyer Gerda, Andersson Gunnar, Dahlberg Johan, Dommermuth Lars, Fallesen Peter, and Lappegård Trude (2018). Education, gender and cohort fertility in the Nordic countries. *European Journal of Population*. <https://doi.org/10.1007/s10680-018-9492-2>.

Figure 1a. Cohort Total Fertility at age 40 by birth cohort and level of education, women

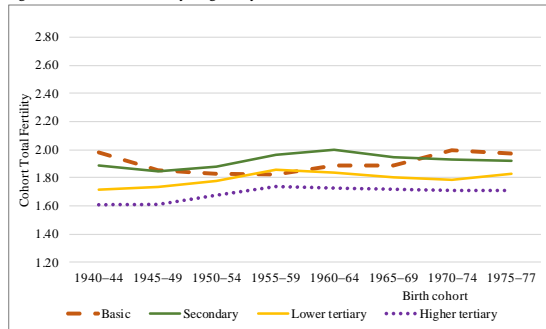


Figure 1b. Cohort Total Fertility at age 45 by birth cohort and level of education, men

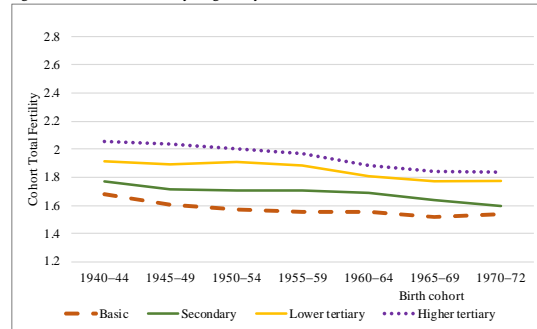


Figure 2a. Childlessness at age 40 by birth cohort and level of education, women

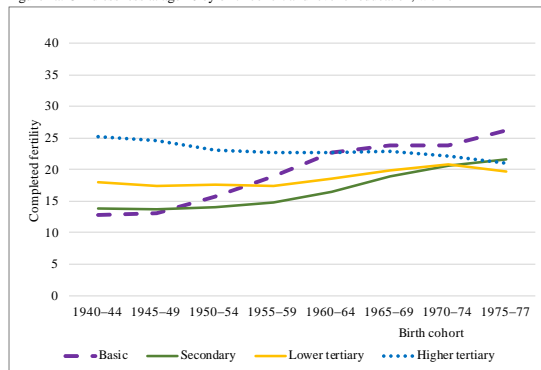


Figure 2b. Childlessness at age 45 by birth cohort and level of education, men

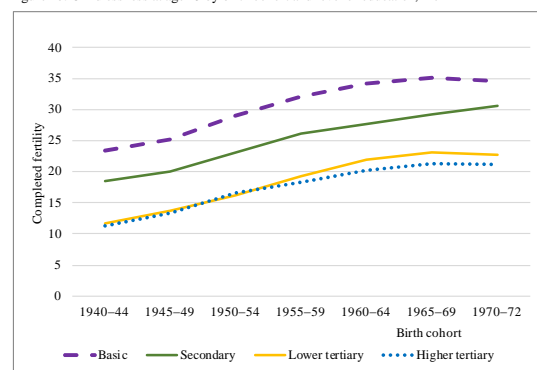


Figure 3a. Cohort Total Fertility at age 40 by birth cohort and level of education, women parity>0

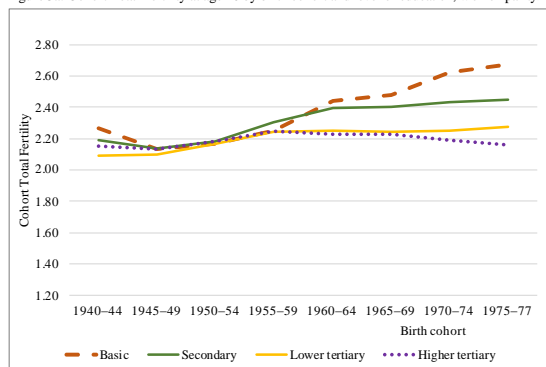


Figure 3b. Cohort Total Fertility at age 45 by birth cohort and level of education, men parity>0

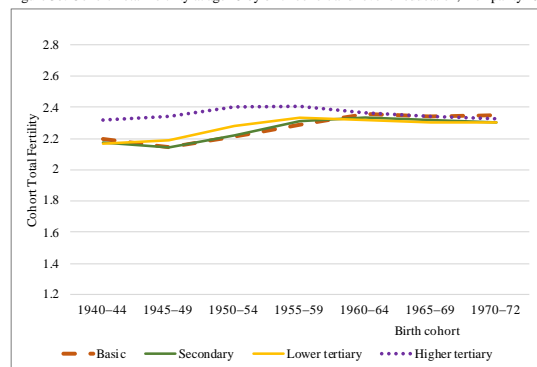


Figure 4. Parity progression ratios by birth cohort and level of education, women.

