Trend reversal in childlessness in Sweden

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ABSTRACT

In the calculations of the future fertility rates for Sweden a cohort approach is used. For every year estimates of cohort fertility rates for the first, second, third and fourth(+1) child are calculated. Fertility rates of the first child are based on assumptions on ultimate levels of childlessness for each cohort.

The proportion of childlessness among women who just completed their fertile period is about 14 percent. This proportion is lowest for cohorts born in the mid 1940s, around 12 percent. So far, we have believed in a continued increase in childlessness due to the postponement of childbearing. Since fecundity declines with age one may expect such a development.

Data from the very last years, though, suggest a quite remarkable fertility recuperation. Cohorts born in the 1970s have not only managed to catch up with the first birth fertility levels of the 1960s cohorts, but also passed them, and we are now seeing a trend reversal in childlessness.

This study examines whether the trend reversal is visible in different socioeconomic groups with special focus on educational levels. In the study some possible explanations of the trend reversal are also explored such as changes in attitudes and norms, and the increasing numbers of infecundity treatments since the 1990s.

The patterns of decreasing levels of childlessness are especially interesting because Sweden is a country that often has been regarded as a forerunner in demographic behaviour.

1. CHILDLESSNESS IS A COMPONENT IN THE FERTILITY MODEL

Statistics Sweden has studied the development of childlessness among women since the early 1980s. One reason was that the level of childlessness was included in the calculation model for prediction of future fertility. In the early 1980s it was believed that childlessness would increase from 12 percent, the level for women who just had completed their childbearing ages at that time, to 17 percent for women in the future (Statistics Sweden 1981). The future women at that time are women who today just have completed their fertile years and between 13 and 14 percent ended up childless. Fewer than the forecasters thought in the 1980s. The assumption on the future level of childlessness has since then fluctuated between 15 and 17 percent.

In the assumption on future births we distinguish between persons born in Sweden and persons born outside of Sweden. Persons born outside Sweden are divided into several groups depending on their country of birth. Separate assumptions for Swedish-born and the different groups of foreign-born have been made since 2008 as fertility differ.

For Swedish-born the calculations on the future fertility is based on information on cohorts. Estimations are made for every year on the probability that women will give birth in that year to their first, second, third or fourth (or more) child. The estimations for each cohort and parity occur with what is known as incidence rates (the number of occurrences divided by the average population of women in each cohort). The total of the cohort’s incidence rates (for the first, second, third and fourth or more child) is the same as the cohort’s age-specific fertility rate.

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The assumption of incidence rates for the first child is based on an assumption of the percent of childless per cohort. Then the age specific incidence rates for the first child are estimated up to age 50, so that the cohort reaches the assumed childlessness.

The method for producing the assumptions for foreign-born is more simple than the one used for Swedish-born. No parity-specific assumptions are made for foreign-born, but the age specific fertility rate is projected forward.

A more thorough description of the model for the fertility projection can be found in *The future population of Sweden 2009-2060* (Statistics Sweden 2009).

2. THE DEVELOPMENT OF CHILDLESSNESS IN SWEDEN

At least since the late 1960s, there has been a continuous postponement in childbearing (see figure 1). In 1970, the average age for women to have the first child was 24. Today the average age is 29. This upward shift accelerated during the 1990s because of the economic recession at that time. The recession led to greater difficulties for women and men to get established on the labour market. That was particularly true for younger men and women. In Sweden several studies have shown that those outside the labour force are less likely to have children (Statistics Sweden, 2008:1). This is largely due to the Swedish parental insurance system, where the compensation paid out to parents is based on income from gainful employment. So in the 1990s an increasing number of young women instead went on to higher education and postponed having children. This pattern has remained in the 2000s.

![Figure 1 - Mean age at birth of first child in Sweden 1970–2009](image)

The postponement in childbearing since the late 1960s has resulted in an increase in childlessness in Sweden. The ability to have children declines with increasing age. The main reason is that the quality of the eggs that women are born with deteriorates with age. The proportion childless is least among women born in the mid-1940s, who were also the youngest first-time mothers (see figure 2). Just over 11 percent of them have ended up as childless. Childlessness has increased slightly among later born cohorts and the proportion of childless among women who just completed their fertile period is about 13-14 percent.

![Figure 2 - Childless women, cohort 1930–1964. Percent.](image)
To get an idea of the development of childlessness among cohorts who have not yet passed their fertile years, childlessness in ages 30-45 is compared for five cohorts.

Figure 3 shows the development of childlessness from age 30 for cohorts born in 1960, 1965, 1970, 1975 and 1977. The data is derived from Statistics Sweden’s Multi-Generation Register as well as the Historical Database. Data on foreign-born residents are excluded. Data include information on the childbearing histories of all women up until the end of year 2008.

Results show that the percentage of women who have not had any children in their 30s is higher for women born in 1970, compared to women born in 1960 and 1965. However, data from the very last years, suggest a quite remarkable fertility recuperation. Cohorts born in the 1970s have not only managed to catch up with the first birth fertility levels of the 1960s cohorts, but also passed them, and we are now seeing a trend reversal in childlessness, at least for the Swedish-born.

3. THE RELATIONSHIP BETWEEN EDUCATIONAL LEVEL AND CHILDLESSNESS

To see if the trend reversal applies to different socioeconomic groups the data on childbearing histories have been linked to individual data on educational levels for the five different cohorts: 1960, 1965, 1970, 1975, and 1977. In the analyses educational level attained at age 30 is used.

As can be seen in figure 4 there has been a rapid educational expansion in Sweden during the recent decades, and the proportion of women with higher education has increased substantially across cohorts (figure 4). In the 1960 cohort, 11 percent of Swedish women had attained more than 3 years of tertiary education by age 30, while the corresponding proportion for cohort 1977 was 41 percent. At the same time, the group with primary or secondary education has declined.

Figure 3 - Childless women at certain ages by year of birth. Percent. 


Figure 4 - Women’s educational level at age 30 for cohorts 1960-1977
Figure 5 shows the development of childlessness from age 30 for five cohorts of women with different educational levels. It is only for women with the highest level of education that has a clear trend reversal. Women born in 1965, is to a smaller extent childless after the age of 35 compared to women born in 1960. Childlessness seems to fall even further for women born 1970 and later. Among women born in 1965, the share of childless is now smaller for women with the highest level of education in ages over 40 than it is for those with the lowest educational level.

There is a strong relationship between educational level and age at first motherhood. Women with higher education start their childbearing later than women with lower education. One would expect that this would lead to a higher level of childlessness as fecundity is related to age. This has turned out to be true. Women with a higher education have to a larger extent ended up childless. Data from the very last years, however, show that this does not have to be true in the future. Among women born in 1965, childlessness is now lower among women with the highest educational level than among the less educated.

Figure 5 - Share of childless women by age and educational level
Educational attainment at age 30
4. INFERTILITY TREATMENTS

What is the reason for the trend reversal in childlessness among women with a high educational level? One possible explanation is an increased possibility to get infertility treatments. For example, the number of IVF treatments increased from around 3,000 in 1991, to over 12,000 in 2007. Today, around one fourth of the treatments lead to a live born child (Swedish National Board of Health and Welfare, 2009).

A survey carried out by Statistics Sweden in spring 2009 about women’s and men’s attitudes towards having children showed that it was common to have used aid to have children (Statistics Sweden (2009:2). Nearly 40 percent of those who had their first child after the age of 34 had used one or multiple forms of aid to have children. The most common was the use of an ovulation test to get help to become pregnant. The second most common was aid by In Vitro Fertilization and the third most common was hormone treatments.

In figure 6 the share of women who used aid to have children has been broken down by educational level. It is obvious that women with a tertiary education are more likely to have used aid to become pregnant than women with a lower educational level. That is true for all age groups. Maybe those with higher education have better knowledge of and access to infertility treatments. That could possibly be an explanation to why the trend reversal is mainly visible among the highly educated.

5. ATTITUDES TO HAVING CHILDREN

Through administrative registers it is impossible to find the reasons for childlessness. It is therefore difficult to distinguish who is childless because of free choice or who is involuntary childless. Through attitude surveys it is possible to get an idea of the causes of childlessness. In such surveys questions about women’s and men’s plans and desires when it comes to having children or not can be asked. In the survey conducted by Statistics Sweden in 2009 childless women have been asked if they think they will have children at some time in the future. Among cohabiting or married women the proportion responding “yes” is highest for women with a higher educational level (figure 7). This could mark a slightly more positive attitude toward having children for the more educated. Unfortunately we are not able to find out if the attitudes among the highly educated have changed over time. If so, that could be another explanation to the trend reversal.
6. DISCUSSION AND CONCLUSIONS

The level of childlessness is used in the model for calculating the future fertility rates for Sweden. In the last population forecast (Statistics Sweden 2009) an increased level of childlessness was assumed, from today’s level 13-14 percent to 15 percent in the future. Now we see evidence of a trend reversal in childlessness. Data from the very last years suggest a quite remarkable fertility recuperation. Cohorts born in the 1970s have not only managed to catch up with the first birth fertility levels of the 1960s cohorts, but also passed them. When studying the development for women with different educational levels, it is obvious that the trend reversal is visible mainly for women with high levels of education, a group that has increased substantially in number. Some possible explanations to the trend reversal could be changes in attitudes and norms, and an increased use of aid to get pregnant.

The pattern of decreasing levels of childlessness is especially interesting because Sweden is a country that often has been regarded as a forerunner in demographic behaviour. In explanations of the timing and level of fertility, the role of education has often been emphasized. Higher educational levels have been seen as a gradient of depressing fertility. Results from this study shows that the role of education on childbearing is not yet quite clear.

In Sweden, at Statistics Sweden, the new pattern will perhaps lead to a reconsideration of the assumption on the future level of childlessness in future population projections.

7. REFERENCES


Statistics Sweden (2009) Having children or not? – Results from a questionnaire survey about women’s and men’s attitudes towards having children. (Available only in Swedish, but with a summary in English)
