

Lower fertility for twins in Sweden

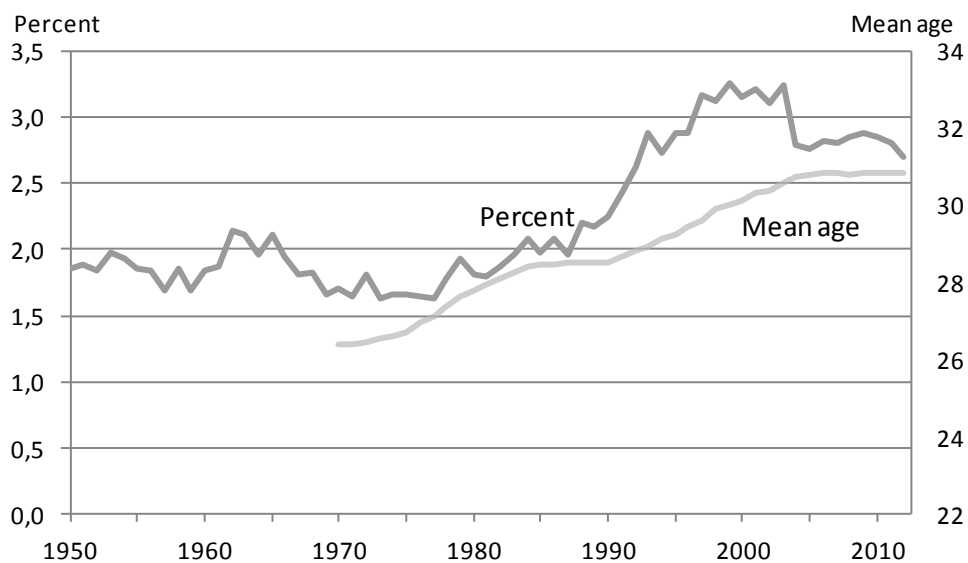
Extended abstract

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Introduction

The proportion of children born in a multiple birth has increased since the middle of the 20th century. During the year 2012 almost 3 100 were born as twins or triplets, a number which accounts for 2.7 percent of the births in Sweden for that year. In 1950 that same proportion was 1.9 percent. The highest increase in multiple births was during the 1990's, see figure 1. This increase can be explained by the advancing female age at child birth but also that in vitro fertilization (IVF) was becoming more common. Earlier studies have shown that women in Sweden that give birth to twins are on average two years older than other childbearing women. The decline in the multiple births in Sweden in 2003 is explained by a change in the law concerning in vitro fertilization.

Figure 1
Proportion of children born in a multiple birth in Sweden 1950–2012 and age of mothers for all births 1970–2012



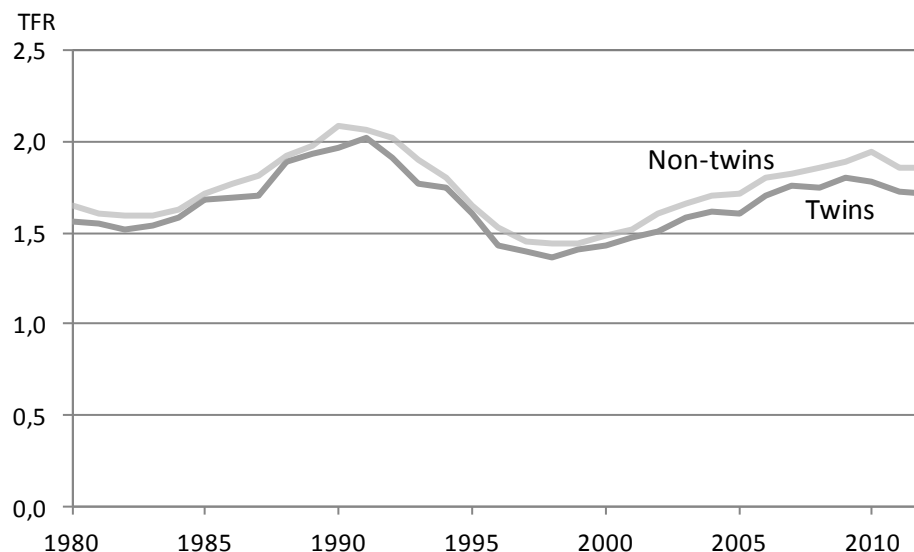
Data material and method

Many studies compare twin siblings. In this study twins are instead compared with non-twins. The analysis is based on Swedish register data and the children are considered twins when they have the same mother and have the same birth date. The database contains 8.8 million individuals born between 1932 and 2012 of which 187 000 are twins, triplets or quadruplets. There is no information from the registers showing if the twins are monozygotic or dizygotic twins.

Results

During the 20th century, the fertility rate in Sweden was characterized by big fluctuations and this study shows that both twins and non-twins followed the same trends during that time. As shown in figure 2, over time the twins have had a lower fertility rate than the non-twins. In 2012 the total fertility rate for twins in Sweden was 1.72 children per woman and the same number for non-twins was 1.86. Additionally, women born between 1950 and 1967 with a twin sibling gave birth to a lower total number of children when compared to non-twin women.

Fig. 2
Total fertility rate for women in Sweden 1980–2012. Twins and non-twins.



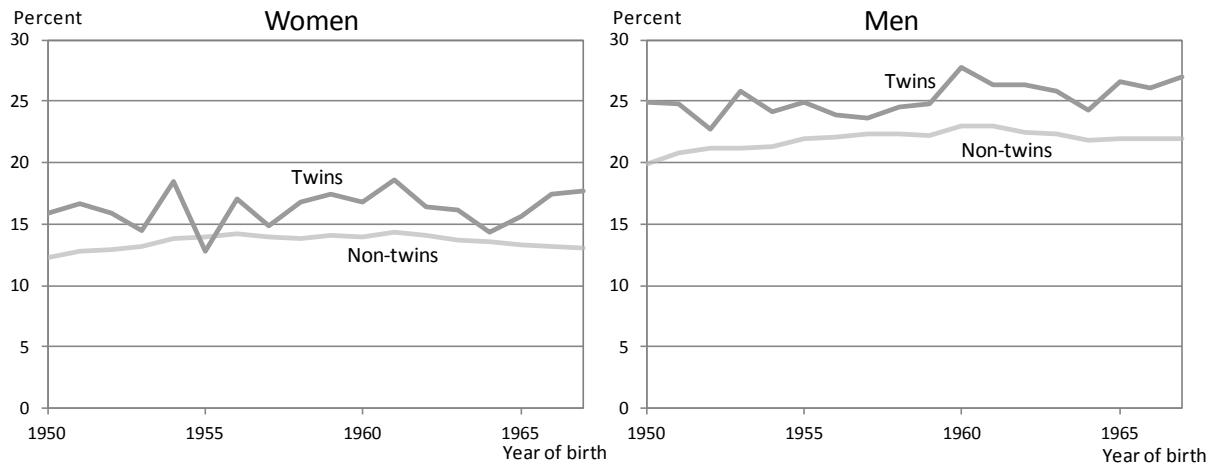
It is not only between twins and non-twins that we find differences. When a comparison is made between twins with a sisters and brother twin, the study shows that the women with a twin sister had a lower fertility rate than those with a twin brother, see table 1.

Table 1
Total fertility rate for women in Sweden by sex of twin sibling. 1983-2012 (five year groups).

Year	Non-twins	Twin women with twin brother	Twin woman with twin sister
1983–1987	1.70	1.65	1.63
1988–1992	2.01	2.02	1.90
1993–1997	1.67	1.65	1.57
1998–2002	1.50	1.45	1.43
2003–2007	1.74	1.70	1.63
2008–2012	1.88	1.81	1.73

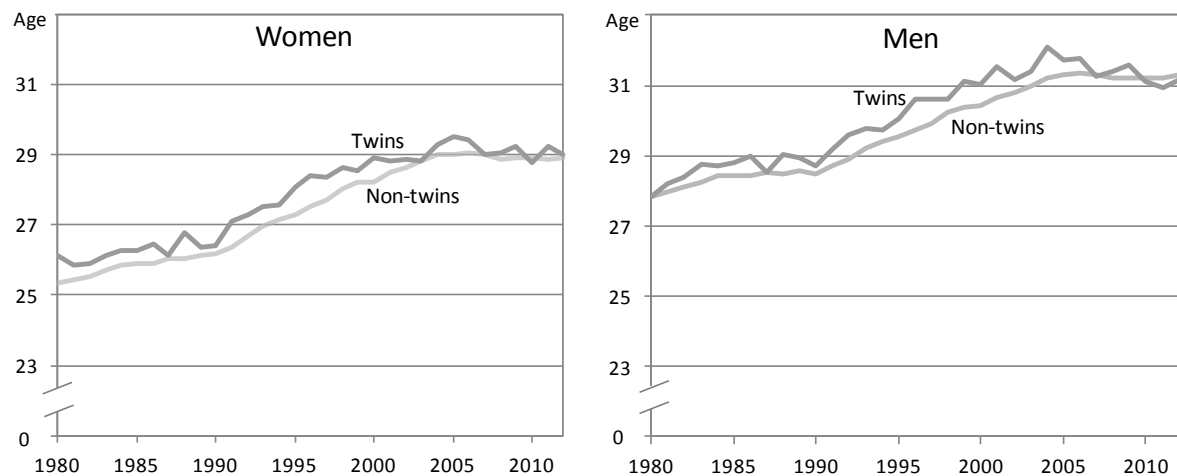
The lower fertility for twins is confirmed when studying the proportion of individuals still childless at age 45 where twins are shown to be childless to a larger extent than non-twins. This applies for both women and men. The childless rate for women born between 1950 and 1967 is 16 percent for twins and 13,5 percent for non-twins. For men born during the same period, 25 percent of the twins and almost 22 percent of the non-twins were childless.

Figure 3
Proportion of women and men still childless at age 45. Born in Sweden 1950–1967.



The twins that bore children were on average older than the non-twins. As figure 4 shows the mean age at birth of the first child was higher than for non-twins, both for men and women.

Figure 4
Mean age at birth of first child 1980-2012.



The differences between twins and non-twins are not substantial but the study does show that there are differences in fertility between the groups. One theory for the differences in fertility is that twins possess a unique kinship to their twin sibling and are less prone to seek the companionship of a partner to the same extent that non-twins would. Another explanation is that children follow their parents' fertility pattern. If parents of twins in general are older than parents of non-twins, then it is possible that even the children, in this case the twins, would have children at a later stage and the differences are a consequence of the postponed childbearing. Could other demographic and socioeconomic variables also help in explaining the differences?