The relationship between fertility and education for Dutch men

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Introduction

Research and data on fertility have traditionally focused primarily on women. Men usually enter the picture only in their role as partners, with characteristics that may be of influence on women's fertility. Or just one aspect of fertility is studied. For example, various studies have focused on childlessness among men (e.g. Keizer et al. 2008, Mulder 2003). The statistical offices in the UK and Norway started to publish male fertility rates and the mean age of fathers at childbirth (Office for National Statistics, 2009; Statistics Norway, 2010). Recent studies, especially in the Nordic countries, have also started to focus on the fertility of men (e.g. Kravdal and Rindfuss 2008, Lappegard and Ronsen 2008). The overall picture is that there are major gender differences in fertility in general, and that a key characteristic like educational attainment tends to influence male fertility differently than female fertility. This led us to the decision to extend our previous study on the relationship between fertility and education of Dutch women (Van Agtmaal-Wobma&Van Huis 2008), to that of men. In this paper, we will use register data to describe and analyse the fertility of Dutch men of different birth cohorts in relation to their education level.

Background and research questions

It is well known that higher educated women postpone motherhood. A similar relationship between education and age at first birth was found for Dutch and Flemish *men* (Liefbroer&Corijn 1999). Some studies however, found this effect was only significant for higher educated men with higher educated partners (e.g. Latten & Hooghiemstra 2002). While highly educated women clearly have a higher risk to remain childless, the relationship between education and childlessness is less clear-cut for men. Keizer et al (2008) and Mulder (2003) both found no significant effect of education on the probability that Dutch men would remain childless. Kravdal&Rindfuss (2008) found the proportion of childless Norwegian men was higher among the *lower* educated. This is in line with the lower childlessness among highly educated Australian men found by Parr (2009).

Unlike childlessness and age at first birth, the relation between total number of children or parity progression rates is not very clear for women or men. We found that the total number of children per mother was slightly lower for higher educated women. The progression from first to second child was highest, by a fraction, for medium educated women and variation over the birth cohorts was found (Van Agtmaal-Wobma&Van Huis, 2008). In Denmark, higher educated women were found to have a higher progression rate from first to second child. There were no differences observed for men by education (Gerster et al. 2007). A similar result was reported for Swedish and Hungarian women and men (Oláh, 2003). A positive relation was found for German women as well, but after controlling for the partner's education level the effect disappeared (Kreyenfeld 2002). In contrast, Kravdal and Rindfuss (2008) reported a lower progression to the second child for higher educated women. For men the opposite was found in the younger birth cohorts, with a greater probability for higher educated men of having a second child.
In our study, we look at childlessness, mean age at first birth, parity progression, and completed fertility for men of various birth cohorts. We compare the results with that of

women in the Netherlands, and with results found in other countries and explore the reasons behind differences or similarities. We will also look into how the education of the partner plays a role in explaining fertility outcomes of couples.

Data and method

The cohort fertility rates for men and women are based on data from the Dutch municipal population register. In order to distinguish fertility rates by education level we linked the population dataset to a second source: the dataset on education. Recently, this dataset with information on education on a semi-integral basis has become available at Statistics Netherlands, enabling analyses with the variable 'education' on large data sets of men and women. The third data source for our study is the Family and Fertility Survey (FFS) 2008. This five-yearly survey by Statistics Netherlands gives information on the course of relationship and family formation.

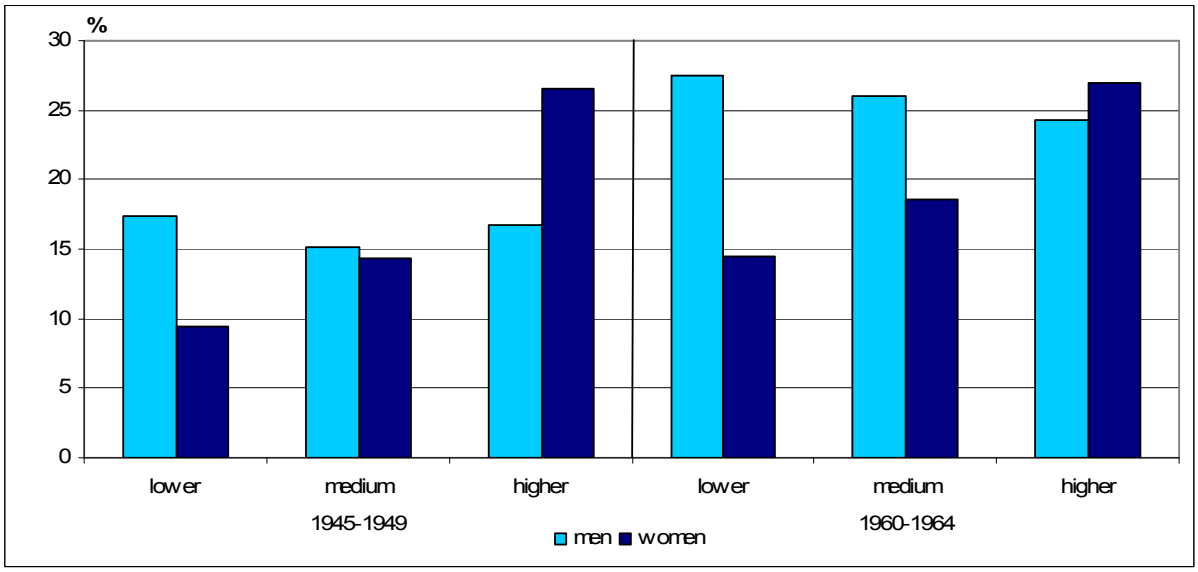
First results

Childlessness

Childlessness has become more prevalent over time: 14 percent of women born between 1945 and 1949 had no children, while in the last completed cohort (1960-1964) this share has risen to 19 percent. For men the shares of childlessness in these cohorts have increased even more, from 16 to 26 percent. The childlessness in this youngest cohort of men can still decrease slightly as these men may not have fully completed their fertility yet.

There is a strong positive relationship between education and childlessness for women. In all generations under study, about a quarter of the higher educated women remained childless. Lower and medium educated women remained childless less often than the higher educated, but this percentage has risen over the generations (figure 1). For men the relation between education and childlessness is less obvious. In the eldest cohort, medium educated men have the lowest share of childlessness, but the differences are small. In the 1960-1964 cohort the relation between childlessness and education seems the opposite to that of women: the higher the education level of men, the lower the percentage of childlessness. This inverse relationship between education and childlessness for men is also seen in Norway (Kravdal & Rindfuss, 2008). Men and women who are voluntarily childless gave similar reasons for their childlessness in the FFS 2008; children interfere with their freedom and it costs too much time to raise children. Another major reason not to have children is that it is difficult to combine children with work. This reason was given far more often by women than by men.

Figure 1. Percentage of childless men and women by cohort and education



Mean age at first birth

The mean age at which women and men become parents for the first time has increased over the years. Women born between 1945 and 1949 had their first child at 24.8 years, while women in the cohort 1960-1964 were 28.0 years old on average. The eldest generation of men had their first child at 27.6 years, while the youngest generation entered fatherhood at 31.0 years. The relationship between mean age at first birth and education is the same for men and women. For each generation the higher educated men and women become parents later than the lower and medium educated (table 1). The postponement of parenthood is observed for all education levels, but the higher educated men and women have postponed parenthood most.

Table 1. Mean age of women and men at first birth by cohort and education

		lower	medium	higher	difference higher-lower
	women				
1945-1949		23.8	25.4	27.6	3.7
1950-1954		24.1	26.0	28.8	4.7
1955-1959		25.0	27.2	30.1	5.1
1960-1964		25.5	28.3	31.0	5.5
	difference youngest and eldest cohort	1.7	2.9	3.4	
	men				
1945-1949		26.8	27.4	29.0	2.2
1950-1954		27.5	28.6	30.7	3.2
1955-1959		28.6	30.0	31.9	3.3
1960-1964		29.3	30.9	32.6	3.3
	difference youngest and eldest cohort	2.5	3.5	3.6	

Number of children

The average number of children per woman and per man has decreased with the generations. This is partly explained by the increase of childlessness. In all generations, the relation between education and the number of children is clearly negative for women. For men the relation is less clear but tends to be positive. When we only look at the average number of children per mother, the differences between education levels are much smaller. The lower educated mothers have slightly more children, and the higher educated fewer children on average in each generation. Medium educated fathers on average have fewer children than higher and lower educated fathers (table 2).

Table 2. Average number of children per mother and father by cohort and education

birth cohort	Education level			
	Lower	Medium	Higher	Total
mother				
1945-1949	2.28	2.18	2.18	2.24
1950-1954	2.30	2.25	2.28	2.28
1955-1959	2.33	2.31	2.27	2.31
1960-1964	2.33	2.26	2.23	2.28
father				
1945-1949	2.36	2.24	2.33	2.31
1950-1954	2.35	2.31	2.37	2.34
1955-1959	2.35	2.31	2.36	2.34
1960-1964	2.30	2.23	2.28	2.26

Further research
The relationship between education and fertility for men is different and less clear-cut than it is for women. We studied the effect of education on fertility separately for men and women. It is also interesting to look into the effect of the partner's education on fertility, as various studies showed that the relationship between education and fertility for men is to a large extent explained by the education of their partners (e.g. Kalmijn, 1996). For a select cohort of women we will study what the relationship between fertility and education is, taking into account the partner's educational level.

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