

Education and Fertility: a Meta-Analysis

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Long abstract

Throughout most of modern history, women's educational attainment lagged far behind men's. Today the situation has reversed itself in most advanced countries: women not only have higher enrolment's rates in tertiary level of education but they have surpassed men in completion rates (UNESCO 2012).

In parallel, demographic behaviour have shifted from rapid population growth fuelled by high fertility to concerns about population decline produced by very low sub replacement fertility.

The rapid spread of tertiary education as well as the parallel endemic low fertility have stimulated considerable interest among researches on the relationship between education and childbearing.

Education can exert a double influence on fertility. It is likely to influence the moment of first birth (*tempo*) and the overall number of children (*quantum*). Studies that have focused on the former have typically found a clear postponement effect (Rindfuss et.al., 1988, 1996; Martin, 2000; Lappegaard and Rønsen, 2005).

Conversely, research on demographic consequences of the reversal of gender educational inequalities on *quantum* has unreached definite conclusions. On one side, there is clear evidence that education depresses fertility (Skirbekk, 2008). This conclusion supports the predictions of the New Home Economics and of the post modernist variant of the SDT theory (Becker 1993, 145-154; Schultz 1969; Lesthaeghe 1983, 1995; Van de Kaa 1987, 1994).

However, studies that focus on more recent women's cohorts do not find any clear relation between women's educational level and fertility (intentions and

realization). Scholars demonstrate that the desired family-size distribution do not vary across educational group: a substantial uniformity between higher and lower educated women regarding their ideal number of children is not observed in Western European countries (and in the US) (Esping Andersen et al 2013). In addition, recent international studies have suggested that the educational gradient have reversed itself, at least in some countries (Kravdal and Rindfuss, 2008; Mencarini and Tanturri, 2006; Mills et.al., 2008; Sobotka, 2004, Lappegard and Ronsen 2005).

In order to systematize these conclusions, we summarize empirical research on the changing relationship between education and childlessness across countries and women's birth cohorts. The first stage of this study involves analyzing where and when there has been a weakening of the educational gradient over time.

Moreover we assess important societal factors that contribute to the variation of the educational gradient of childlessness over time and space. In particular, we focus our attention on key contextual variables that shape the relationship between women's education and childbearing decisions. Firstly we consider the configuration of the welfare state since it may explain cross-national variation of the gradient. As the literature shows, the structure of the welfare state can be beneficial for childbearing, since it can mitigate employment risks, as well as the opportunity costs that accompany childbirth (Hoem et al 2006). In particular, when it is characterized by strong elements of de-familization, de-gendering and commodification, it can relieve the positive educational gradient of childlessness.

Secondly we consider contextual variables that can explain the change of the gradient across cohorts, namely the structure and the flexibility of the educational system the differences in labor market and employment conditions for women and the gendered patterns in education. In particular we take into consideration three macro characteristics

- * the expansion of tertiary education as a measure of educational expansion,
- *the increase in female labour market participation as a measure of women's economic independence,
- * the distance in the graduation rate between men and women as a measure of gender equity.

In order to conduct this study, we take advantage of meta-analysis systematizing about 85 publications and exploiting census data. Our meta-dataset includes empirical results from 17 countries (Western European countries and the US)

associated to women's birth cohorts from 1920 to 1970 (we consider ten five years birth cohorts). The total number of coefficients that we collect is 209.

The aim is to test the shape of the relationship (linear or U-shaped) at the aggregate level across countries. Our dependent variable is the relative propensity to have at least one child for higher educated women compared to lower educated.

The statistical model implemented is called meta-regression.

The descriptive results are reported in figures 1a-d where we group countries according to the welfare state typology (Neyer 2013). The results suggest a lack of a uniform pattern across countries, showing that the negative impact of education on fertility quantum has not to be taken for granted. In particular, we do observe a reversal in the educational gradient of fertility quantum precisely in those countries that pioneered not only the demographic transition but also the transformation of women's roles.

More precisely, the educational gradient has changed only in welfare regimes characterized by process of de-familization, de-gendering and commodification.

In the second part of the study we examine to what extent macro-variables account for the variation of the link education childbearing across countries. Our results (not reported here) suggest that the change in educational gradient of childlessness is associated to educational expansion of tertiary level of education, to the increase of female labour market participation and to the diffusion of gender equity.

Table 1a: de-familistic and de-gendering countries (Nordic + France + Belgium).

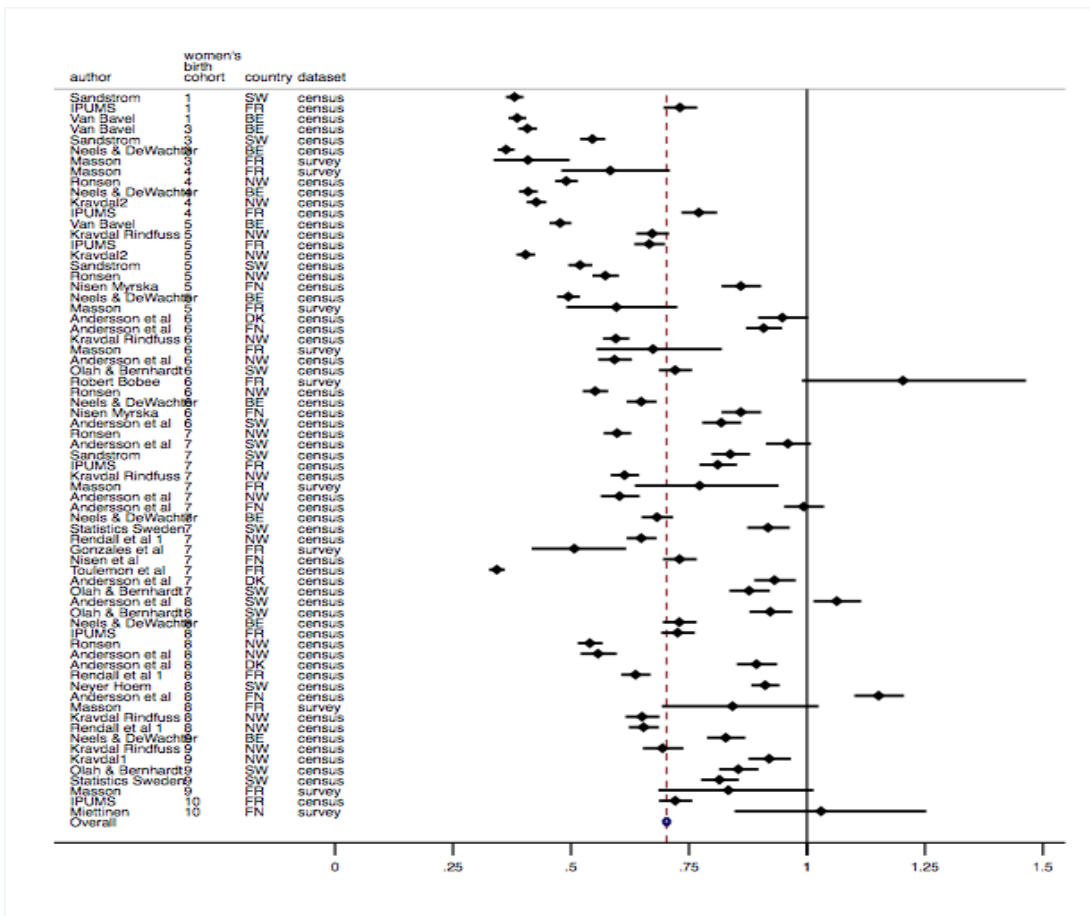


Table 1b : de-familistic liberal contries.

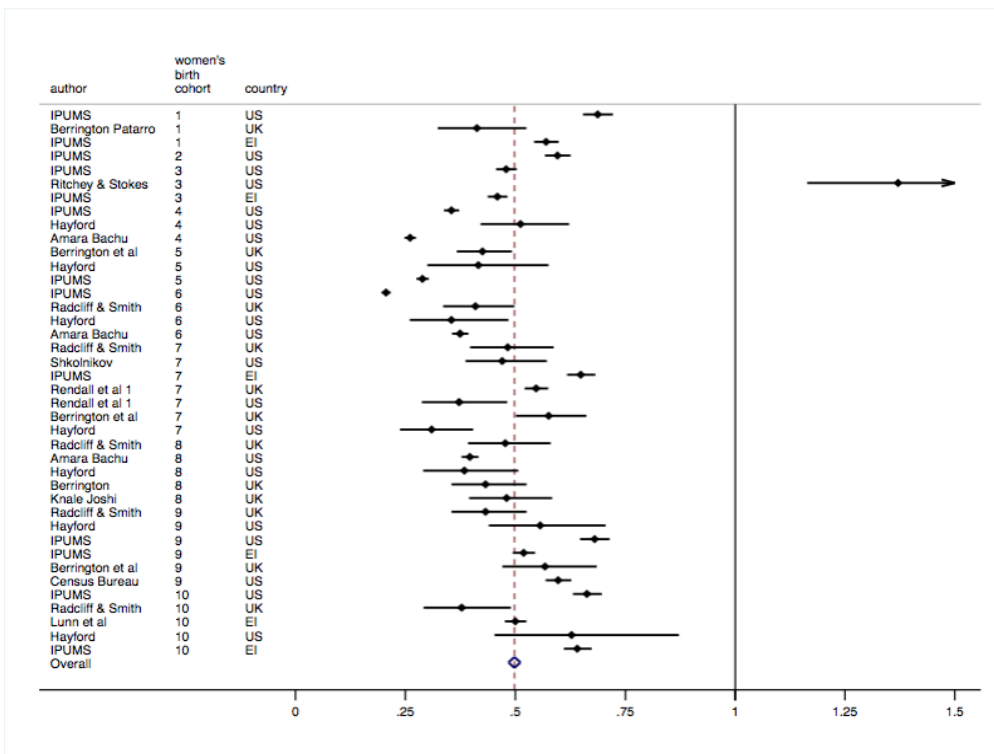


Table 1c: familistic Continental countries.

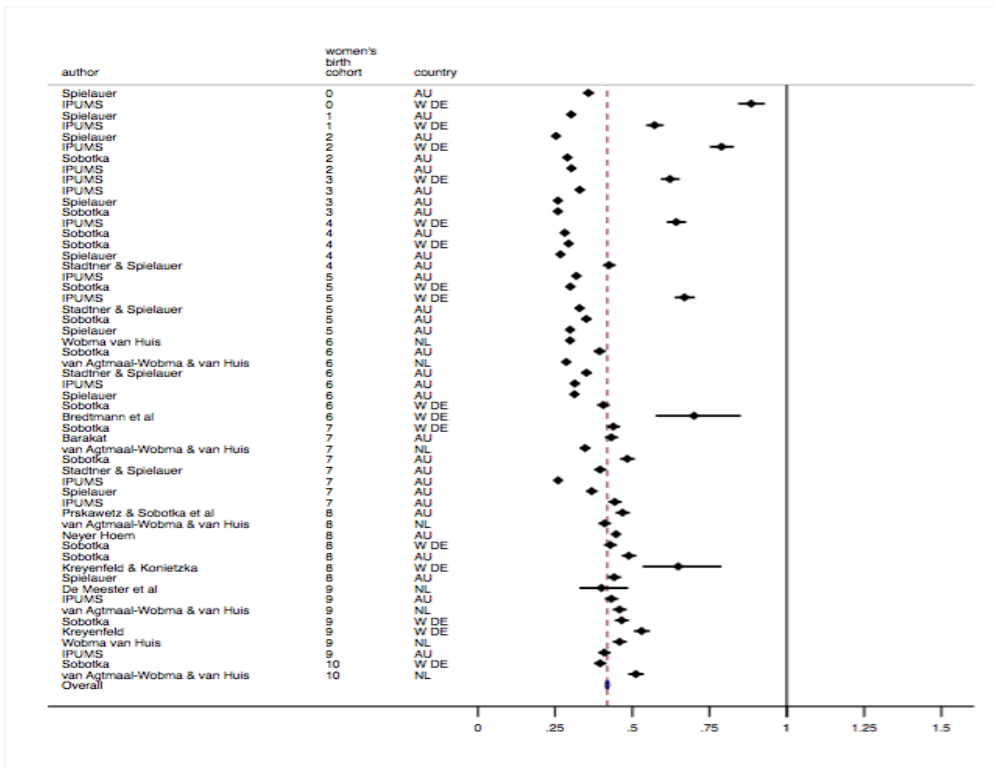


Table 1d: familistic and gendering Mediterranean countries.

