Comparative analysis of the relationship between partner's educational attainment and the transition to second birth in Europe based on EU-SILC data

Klesment, Martin and Puur, Allan[1]

1. Background

Educational attainment is one of the important individual variables that influence transitions to parenthood and to higher order parities. While transition to parenthood and woman's educational level are usually negatively associated, the evidence is more heterogeneous for second and higher order births. The association between second births and educational attainment has been studied extensively and it has been established that in some countries higher level of education has no inhibiting effect on the intensity of higher order births among women, whereas in other countries it operates according to the prediction of microeconomic theory (Becker 1993). The majority of examples about the non-negative effect of high educational attainment come from the Nordic countries and Western Europe (Hoem and Hoem 1989, Kravdal 2007, Kreyenfeld 2002). On the other hand, in Central and Eastern Europe, the highly educated tend to have lower second birth intensity (Koytcheva and Philipov 2008, Oláh 2003, Perelli-Harris 2008). Only a few studies cover a larger number of countries applying comparable analytical approach (for instance van Bavel and Rózanska-Putek 2010).

Most of these studies focus on woman's education using event history modelling. As such, the measured outcome is dependent on both quantum and timing of second childbearing. An almost standard approach is to include age at first birth and partner's education in the event history models. This is done to reduce bias that would appear in the estimates for woman's education either due to different timing of first birth (time squeeze) or possible influence of partner's education (partner effect). Of these two control characteristics, partner's education can be considered in the micro-economic framework as contributing to income effect – having a highly educated partner results in better resources for childbearing and thus should increase the intensity of second birth.

2. Questions and hypotheses

The present study is a comparative analysis of the effect of male partner's education on second birth intensity in Europe. We are focusing on three questions. First, how does the effect of partner's education vary at the regional and country level? It is expected that partner's education has a more pronounced positive effect (as income effect) in countries that have more traditional gender and family norms (e.g. German speaking countries).

Second, what are the effects of educational homogamy and hypergamy? In this case, we are interested in results that emerge from interaction of women's and men's educational attainment. According to income effect hypothesis, homogamous highly educated couples could have the highest second birth intensity, but the results are probably dependent on the effect of female educational attainment which varies from country to country. Therefore we seek to explore regional variation in the interaction effect between partners' education.

Third, how does partner's educational attainment variable affect the timing of second birth? It is possible that we observe a positive effect of female education on second birth intensity mainly because highly educated women prefer to space first births close to each other. Even if biological age limit would allow longer birth interval. We are interested in whether education of the partner has duration-dependent effect on female's second birth intensity, perhaps compressing the time to second birth for certain educational groups of women. This would also allow to examine the extent

1 Both authors from Estonian Institute for Population Studies, Tallinn University, Uus-Sadama 5-553, 10120 Tallinn, Estonia. Contact: klesment@tlu.ee.

of bias that is introduced by preferences for spacing of second births.

3. Data and methods

We use survey rounds of the European Statistics on Income and Living Conditions (EU-SILC), considering 29 countries (27 EU member states, plus Iceland and Norway). The survey is not designed for demographic studies or event history analysis; the EU- SILC data includes neither women's total number of children ever had nor the details of fertility history. In this study, we apply the own-child technique that links co-resident children to their mothers in the same household. In order to minimise errors in the procedure, we need to apply assumptions and age limitations, some of which are suggested by Bordone et al. (2009). We focus on women who have at least one child and a partner at the time of interview. Possible selection biases are assessed using sources that provide complete partnership histories (Generations and Gender Survey).

We apply both separate regional models and mixed models of pooled data with country level random effects for educational attainment. EU-SILC data also permits us to work with smaller administrative units (NUTS level 2) if necessary. Duration-dependence is modelled using polynomials to allow for more flexible shape.

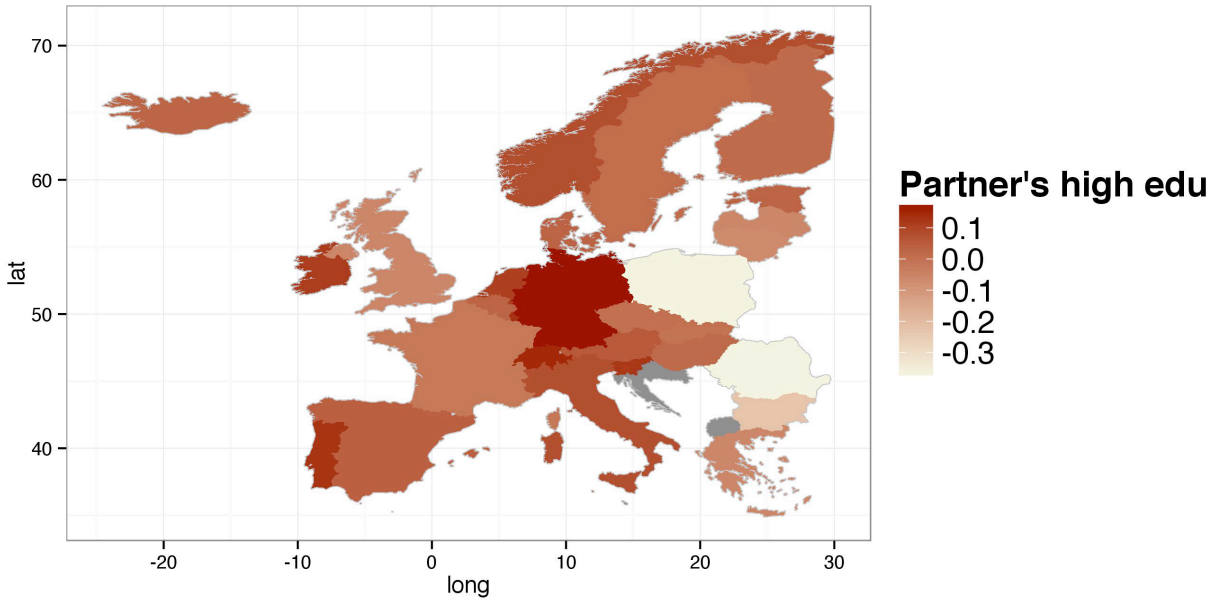

Figure 1: Country-level random effect of a having highly educated partner

Note: log-odds scale, the fixed effect coefficient for having a highly educated partner is 0.21.

4. Preliminary results

With regard to our three research questions, we observe the following.

1) There is a clear distinction between regions of Europe in terms of the effect of partner's education on second birth intensity. Indeed, as hypothesised, remarkably high positive effect is observed for German speaking countries. Somewhat less, but still positive, is the effect in other Western European countries and Northern Europe. The relationship is reversed for Central and Eastern Europe and South-Eastern countries, where high education

of the partner has an inhibiting effect on second birth intensity.

2) As of the interaction between female and male education in the couple, larger differences in the effect on second birth appear in terms of partner's education. The partner's high education increases the second birth intensity for both high and medium educated women. The effect is reversed for those couples with large educational gap between partners (low educated woman and highly educated man).
3) Finally, the duration-specific effects of partner's education appear more prominently for highly educated women for whom the spacing of second birth seems to be compressed. However, for certain regions the compression induced by highly educated partner is accompanied by higher quantum of second childbearing.

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