Understanding the relationship between men's education and childlessness: an approach using Swedish register data

Margarita Chudnovskaya, Stockholm University

In this study I examine the educational gradient in childlessness among Swedish men, and use a multi-step regression approach to study the robustness of this gradient. Based on theoretical considerations on the role of education as a status marker, we would expect education to have a positive relationship with fatherhood: not only because highly educated men have higher income, but because education in itself should *to some extent* be a desirable resource in the partner search process and in the family formation process. However, I find that among men born 1967-1972, the educational gradient is not strongly pronounced, and that education seems to simply capture the effect of other forms of status.[1]

In addition to considering education, I use detailed register data including information on men's social origin, their income, their IQ (from military conscription registers), and their marital status.

Theoretical Background

Socio-economic status stratification in family outcomes is a key focus of demographic and sociological research: the transition to parenthood (and fatherhood specifically) as well as educational stratification in family outcomes have both been the subject of dozens of recent studies. Nevertheless, despite the significant contributions on these questions, an explanation of how education is related to the transition to fatherhood is underdeveloped, and the goal of this study is to contribute to such an explanation.

Our current understanding of the role of education in the transition to fatherhood draws upon several theories. First, is the classic "role incompatibility" theory. Education is related to parenthood because the majority of students do not wish to combine the roles of "student" and "parent", and thus education has a postponing effect on the transition to parenthood. This postponing effect may act to reduce the total number of children for individuals, but generally in the modern societal context we can argue that the postponement effect does not have a substantial negative effect on men's likelihood to transition to fatherhood, and thus this perspective is not of primary importance for the question.

Secondly, education matters from the New Home Economics, specialization perspective—or more generally, the *"resource perspective."* In this view, education is a resource. Resources are a positive factor in the transition to parenthood, particularly for men—whose resources are typically at least somewhat more important for family outcomes than women's resources. Education is a resource because it is connected to income (which has a strong positive relationship with parenthood), and presumably also to cultural and social capital (which are assets in the partner search process). Many research studies thus use educational level as a predictor of the transition to parenthood, usually with the addition of income. Current research is insufficient to conclude whether education matters as a resource in its own right, or matters because it is linked to other resources.

Additionally, there is what we can call the *"values perspective"* on education. Individuals with certain values and life orientations are more likely to end up in certain educational groups (e.g. the lowest educated or the highest educated group). In other questions answered by sociologists, educational stratification is acknowledged as a values/life orientation stratification. For example, highly educated individuals generally have better health outcomes (regardless of income), more stable unions, and education tends to be a major divisive variable in individual attitudes towards recent European and American political developments (again, regardless of income). Thus in many fields,

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[1] Results in abstract based on register data up to 2012, presentation at EPC and final manuscript will use data up to 2017 and thus men born up to 1975-77.

sociologists find that education seemingly captures a really important facet of individuals' mode of living and attitudes. The *"values perspective"* should presumably be important when it comes to questions of reproduction.

Education is occasionally connected to parenthood via the *"values perspective"* as well. Some studies differentiate preferences for family size or parenthood by educational level. The most highly educated group are sometimes referred to in passing as more likely to have "individualized" or "post-materialist" or simply "de-traditionalized" values, and thus likely to deviate in behavior from other educated groups. Recent work combining the resource and the values perspective highlights how stratification in family outcomes is related to stratification in education: there are differences in parenthood by field of study (those these differences are less pronounced for men than for women, and may be mediated by income and career opportunities than education per se).

Theoretically we can conclude that education may be a resource or lead to resources which are desirable, may have a transformative effect (with regard to values and life orientation), and it does not operate linearly because selection into different educational levels and fields is associated with factors which are associated with fatherhood. Additionally, the relationship between education and fatherhood must be understood within the context of educational expansion and the changing social meaning and socio-economic value of different educational levels. Most researchers agree that following educational expansion, the lowest-educated group is much more negatively selected and the highest-educated group is less positively selected than in previous decades.

So what is the summary of how education is related to fatherhood in Europe? Higher education is generally associated with higher likelihood of becoming a father in some European countries, but not in others. As stated in the introduction, in the Swedish (and Nordic) context, the gradient in childlessness is basically flat, with the exception of the lowest educational group, which is quite small among contemporary cohorts. Although this group is very important as a vulnerable group, fewer than 15% of the 25-64 population in Sweden have an ISCED 0-2 level education, and this level is even lower among younger men (SCB, 2017). In the Nordic countries, there are only minor differences in education and childlessness among men with medium and high education (Jalovaara et. al 2017). Given the theories spelled out above, we would expect that education should have a stronger association with fatherhood as an outcome.

Data and Research Design

I use detailed Swedish register data to examine the relationship between education and childlessness among a contemporary cohort of men (born 1967-1972, and aged 40-45 when data is last available).[2]

I use a seven level classification system for men's educational attainment. For the results presented here, education has been measured at age 40, but the finished study will include supplementary analysis with alternative specifications. Education is classified as Primary, less than 9 years; Secondary, up to 10 years; Upper-secondary, up to 2 years; Upper-secondary, 3 years; Post-secondary, up to 2 years; Post-secondary, 3+ years; Research education. This granularity should pick up on differences in educational prestige and education-related capital. I also combine this with information on whether the degree is a vocational degree, and do some basic analysis on broad field of study (Engineering/Technical, Medicine, Social Sciences, Education, etc).

Using detailed data from Swedish registers, I am able to construct a rich data set for the other relevant socio-economic factors. For social origin, I use the following varaibles: Man born in Sweden (dummy); Mother and father born in Sweden (dummies); Parents cohabiting at age 15 (dummy); Mother's and Father's educational attainment (same 7-level coding and 3 level-coding); Mother's and Father's relative income (quintiles compared to other men or women in their age); Birth order, number of full siblings and half siblings; Type of municipality at age 15 (metropolitan, commuter

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[2] Again, note that these are results presented here, but that upodated cohorts will be presented at EPC (though with no substantive changes).

city, larger city, smaller city, rural area). I use IQ, from conscription records. I use income at ages 35 and 40, measured as a rank compared to other men born within the same year. I also control for marital status.

Results and Discussion

I am showing the results in three figures. Figure 1 is simply the educational gradient in childlessness: the dark shadowed area is the share of men in each educational category who are childless. Here we can see mostly that men with the lowest education are the least likely to be fathers. In Figure 2, I show the share of men who are childless by educational field. The different circles represent the different levels of education within the same field (e.g. short post-secondary, upper-secondary, etc), and the area of the circle represents the size of that educational group. The take-away from this figure is that the variation between the different educational fields seems to be just as important as the variation between the educational levels: another confirmation that "more [of a status variable] is better" does not hold true for education and men's fatherhood.

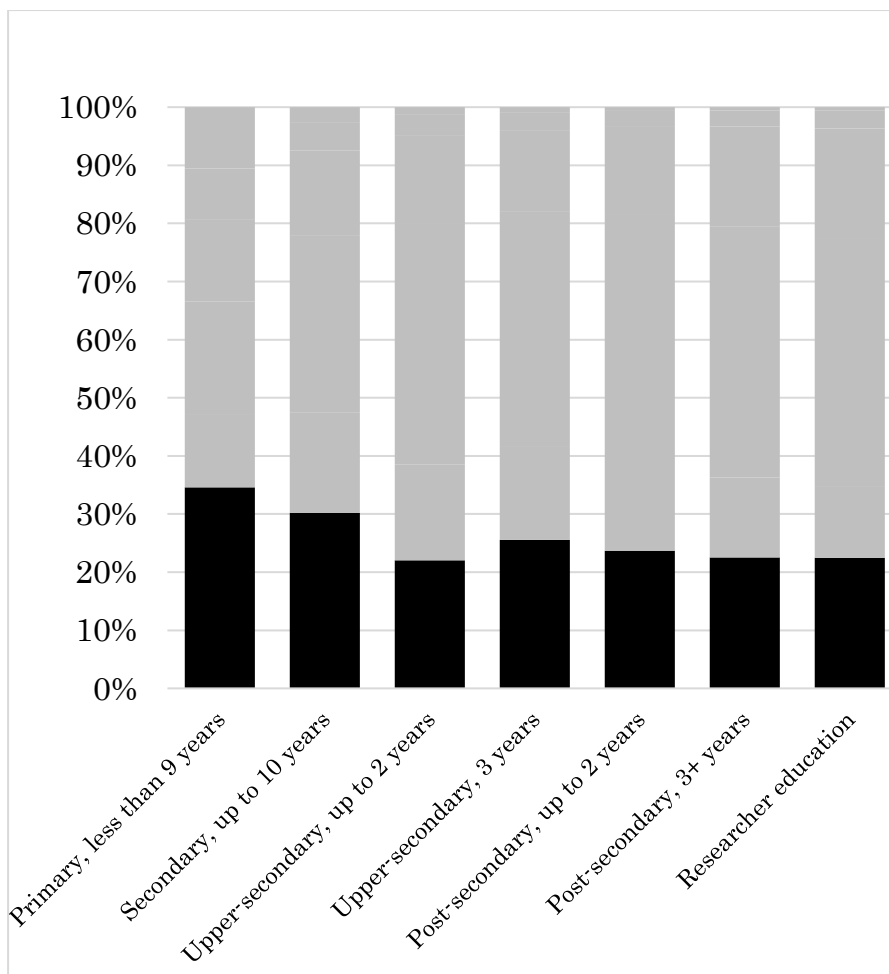**Figure 1:** Childlessness by education at age 40.

Figure 2: Childlessness by field of education
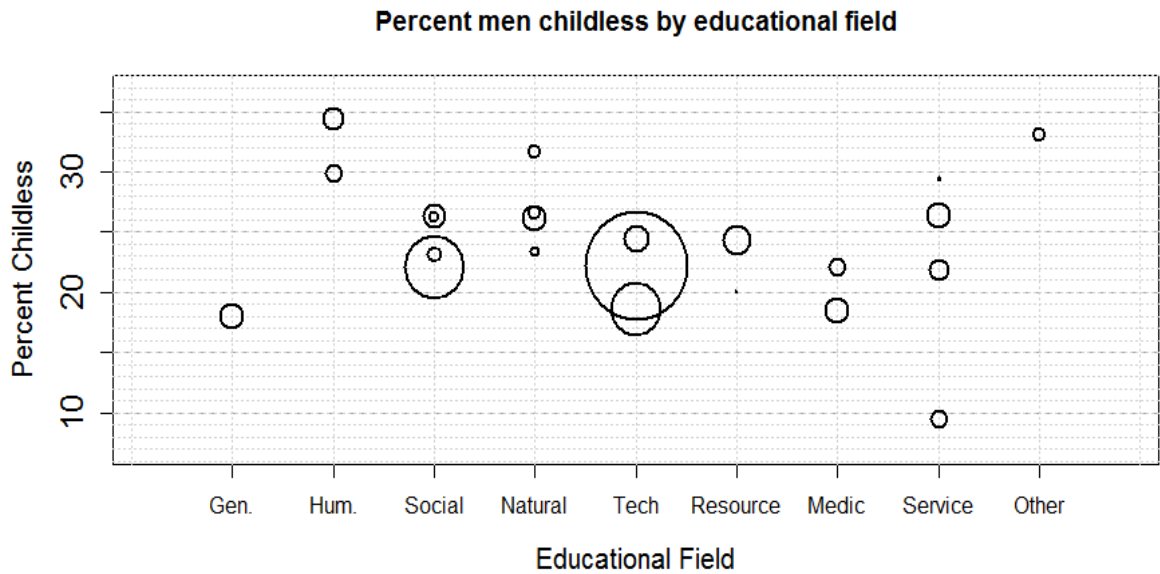

Percent men childless by educational field

Figure 3 shows the LPM regression coefficient of the outcome "any kids at age 40" for each educational level, for 5 separate models.

Starting with "1", these are coefficients for a model which simply includes the likelihood of being a father with the level of education, controlling only for birth year. Here we can see that compared to the most common educational category, 2 year upper-secondary, there is a slight advantage to having 3+ years of college, and a slight disadvantage to having compulsory education, as well as longer gymnasium or shorter post-secondary education. Model "2" adds social origin variables listed above: we can see that the relationship between education and fatherhood does not seem to be capturing any social origin effects, as the estimates do not change.

Figure 3: Regression results, Outcome: Any kids at age 40 (>0 is "more likely")
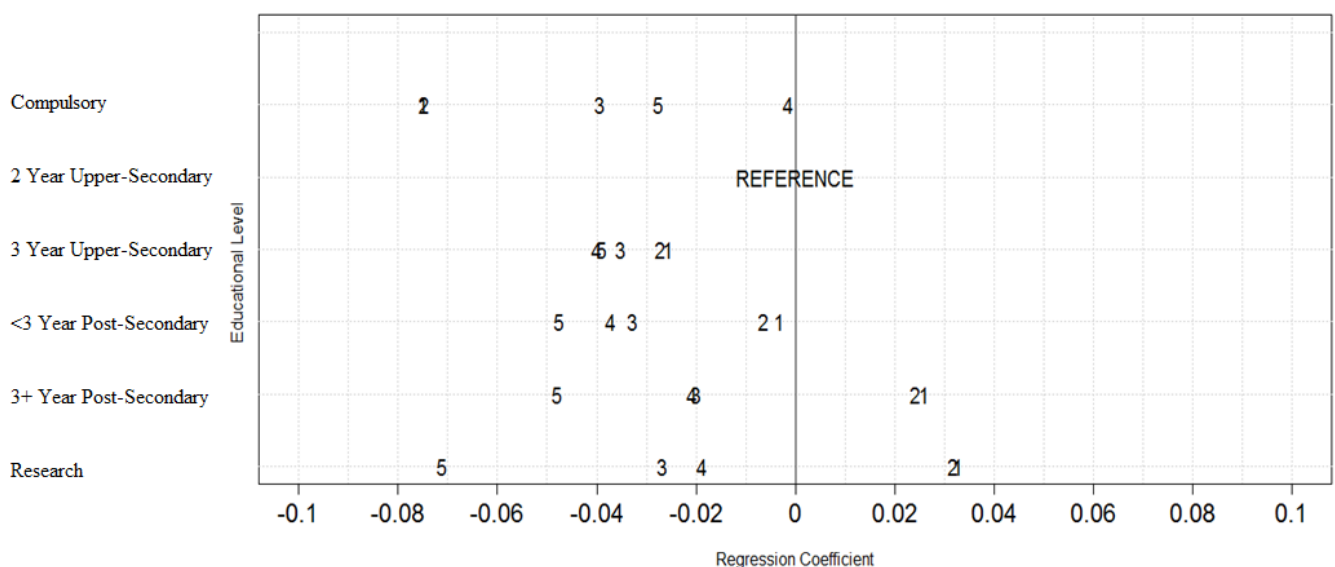
Model "3" adds relative income at age 35. Once we control for income, the "2 year post-secondary" group are the most likely to become fathers. The advantage of the post-secondary educated group becomes a disadvantage. This result shows that the correlation between higher education and the transition to fatherhood operates via income, consistent with previous research that shows that income is the major socio-economic determinant in the transition to fatherhood among the highly educated (Chudnovskaya 2018). Model "4" adds an IQ measure from military conscription registers, and we can see that the biggest change is for those with compulsory only education. This result suggests that the lower likelihood of becoming a father may be driven by capabilities rather than by the status marker of having low education.

Finally, Model "5" adds marital status and we see that the relationship between education and fatherhood is mediated to some extent by the likelihood of marriage.

The conclusion of this analysis is that education does not seem to have a robust relationship with the likelihood of becoming a father, and that the "more is better" model of status does not seem to work with regard to education. Perhaps Swedish women have a strong preference for men with a short upper-secondary education, or perhaps these men have greater preferences or opportunities for family formation—such ideas should be further investigated by research to understand childlessness among men.