Fertility among Austrian female scientists

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Extended Abstract

Motivation

Earlier studies investigated the impact of motherhood among research scientists on career and scientific productivity (Hargens et al. 1978; McDowell 1982; Romanin and Over 1993). Using the number of published papers and citation scores of U.S. chemists, Hargins et al. (1978) found a negative relationship between fertility and scientific productivity. A similar finding was derived for U.S. doctorate recipients by McDowell (1982), but only for physical sciences and not for the humanities. In fact, in a survey on Australian academics, female researchers with children reported that "family commitments have limited their options for attending conferences, taking study leave, seeking a job elsewhere, completing research, and publishing", producing negative consequences for their academic career (Romanin and Over 1993, p. 426). Hence, motherhood is seen as an obstacle to scientific career. Not surprisingly, Australian female scientists were found to be less likely married or to have children than women in the population in general (Romanin and Over 1993).

Differently to previous studies, we aim to investigate the fertility among Austrian female scientists. In particular, it is the fertility and family behaviour of highly-educated women with scientific career aspirations which is the primary focus of our paper. Based on theoretical arguments, we claim that female researchers should have lower average number of children and higher percentages of childlessness than not only the general population but also the population with tertiary education.

Theoretical framework

There are several theories about the link of education and marriage and parenthood. In the New Home Economics theory (Becker 1976, 1981), higher education associated with better market opportunities reduces the gains from marriages for women, thus predicting a higher share of individuals remaining single among highly-educated women. Moreover,

increased market opportunities make mother's time for childrearing relatively more expensive, raising the relative costs of children, which reduces the demand for children for highly-educated women. As argued above, the opportunity costs of children are particularly high for female scientists, implying even a lower number for children and higher levels of childlessness than highly-educated women.

A scientific career requires not only to complete tertiary education, but also to obtain a Ph.D. degree, further prolonging the period of education. Hence, female scientists spend more time in education than average highly-educated women. A prolonged period of education implied by higher educational levels has itself a substantial impact on the timing of marriage and motherhood, as the incompatibility of student and parental roles delays family formation until the educational career has been completed (Rindfuss et al. 1980; Marini 1985; Blossfeld and Huinink 1991). Hence, highly-educated women with scientific aspirations will postpone family formation even more than tertiary-educated women. In addition, as argued above, roles of mother and researcher are difficult to reconcile, thus, reducing the demand for children.

Data

The analysis is based on an additional sample of the Generations and Gender Survey (GGS) in Austria, carried out in fall 2008. This sample includes 247 women under the age of 45 years who applied for a scholarship at the Austrian Academy of Sciences within the last ten years and therefore constitutes a sample of women with tertiary education who aspire to an academic career. The sample size allows to analyse in detail fertility intentions and family formation of female scientists as well as comparisons to Austrian women in general, but also to women with tertiary education. Up to now, very little is known about the fertility behaviour of academic women in Austria, but also in other modern societies. The current sample – although very selective – will allow new insights in the fertility behaviour and in the family formation process of women working in the academic field.

Study framework and proposed analyses

Among the countries included in the Eurobarometer 2001, the desired number of children is lowest in Austria (Lutz, Skirkekk and Testa 2006). Moreover, Austria, together with Germany, has "larger-than-normal minorities" who choose 'none' as their personal ideal number of children (Fahey 2007, p. 5). It is therefore of high interest for the Austrian society to investigate in detail the phenomenon of low fertility intentions and fertility ideals.

In a survey performed among 193 female academics at the Johannes Gutenberg University in Germany, Kemkes-Grottenthaler (2003) found that many childless academic women merely postpone motherhood until their career prospects are established, only few explicitly have decided to forgo children in favour of other life

pursuits. Certainly, the postponement of fertility might end up in involuntarily childlessness. According to Romanin and Over (1993), Australian academic women were more likely than men to be single and childless, "thereby being able to devote time and energy towards a career without the pressure of multiple roles" (p. 426).

We want to analyse the current parity of female scientists as well as their desired number of children. Furthermore, the ideal number of these women is of interest, as it might be different from Austrian women in general as well as from women with tertiary education. According to Fahey (2007), better educated women have a larger gap between actual and ideal family size than those less educated. It is therefore interesting to see if there is also an under-attainment of fertility ideals among scientific women and to compare the actual-ideal gap of women in research with that of women with tertiary education, secondary education and lower education.

Following McDowell (1982) the study distinguishes between different scientific fields, namely physical sciences and humanities, arguing that in physical disciplines knowledge base becomes more rapidly obsolete than in the humanities, where knowledge is assumed to be more durable.

Romanin and Over (1993) analysed the extent to which Australian academics perceived childcare or family responsibilities as having limited different academic roles, like attending conferences or rate of publication. According to their study, the extent of perceived disadvantage increased with number of children, with women feeling more disadvantaged than men (Romanin and Over 1993). Moreover, "women more often than men felt that concurrent responsibilities to childcare and household labour limited the time they could commit to activities as an academic" (Romanin and Over 1993, p. 427). Therefore, the reconciliation of work as an academic and family life is another aspect the current study focuses on. The rich GGS-data also allow to analyse perceived private, financial and occupational constraints and consequences of a further child. We will therefore analyse perceived constraints that might prevent women from attaining their ideals. As work experience has an important impact for first parenthood (Winkler-Dworak and Toulemon 2007), detailed information included our data, like job security, flexible working hours and workload measured in hours, will be further indicators that might explain the transition to parenthood of academic women.

The results of our study will help to learn more about fertility patterns and aspirations of scientific women in Austria and might reveal family policy strategies that facilitate scientific women having the number of children they desire.

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