

Social Mobility and Fertility Behavior in the Long Run. Applying Diagonal Reference Models (DRM) on Historical Demography (Southern Sweden, 1870-2015)

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Short Abstract

Social science has always been interested in the effect of social mobility on fertility behavior, bringing mixed evidence. Part of this is due to an identification problem. Accordingly, conventional models cannot disentangle which effects are due to social mobility, background, or origin alone. Diagonal reference models accurately estimate the additional impact of social mobility, net of background and destination classes, in different outcomes. In this sense, we propose to apply DRMs for the first time in historical demography to study how social mobility may have affected long-term fertility behavior. We use long-term longitudinal data for southern Sweden (Scania). Our first results show a decrease in the background importance over time and that social mobility related more with lower fertility in the past for couples during the fertility transition periods.

Extended abstract

Social science has always been interested in the effect of social mobility on different demographic outcomes. Among these, one of the most important has been intergenerational social mobility on fertility behavior. In this regard, research on the social mobility on fertility has brought mixed and divergent theoretical and empirical results. For instance, some scholars argue lower fertility for socially mobile couples due to acculturation stress and social dislocation (dissociative hypothesis) (Blau and Duncan 1967; Nieuwbeerta et al. 2000). Other authors instead pinpoint a prevalence of lower fertility, especially among individuals suffering from downward mobility, due to limited resources, or as a strategical choice within the resource dilution hypothesis, while on the contrary, upward mobile couples would have higher fertility (Easterlin, 1969; Van Bavel, Moreels, Van de Putte, & Matthijs, 2011).

Part of these divergent results, in this context, is due to the emergence of the so-called identification problem. Accordingly, social mobility (M) is the result of the difference between the status origin (background) (O) and status destination (D) ($M=D-O$), which makes it impossible for any conventional model to disentangle which effects are due to social mobility, background or origin alone. Therefore, sociologists have used methodological alternatives, the Diagonal Reference Models (DRM)(Sobel, 1981, 1985). DRMs are currently considered the only ones capable of accurately estimating the additional effect of social mobility, net of

background and destination classes, in different outcomes (Billingsley, Drefahl, & Ghilagaber, 2018).

In this sense, we propose to apply DRMs for the first time in historical demography to study how social mobility may have affected long-term fertility behavior. The basic idea of these models is that those who remain at the same social class throughout their lifecycle are the reference, and the socially mobile shows fertility behaviors that are somewhere between the social class they were born into and the one they joined as adults. In other words, these models allow capturing the effect of origin and destination simultaneously, and therefore when adding covariates for social mobility, informing more accurately whether being socially mobile had or not an impact on fertility.

We use longitudinal data for southern Sweden (Scania). We have individual-level information on socioeconomic variables such as income and occupations and several other sociodemographic outcomes (Bengtsson, Dribe, Quaranta, & Svensson, 2020). We study a significant part of the nineteenth century and the entire twentieth century up to 2015, with continuous information about the socioeconomic status of individuals and their parents and various demographic outcomes from which we can derive several fertility variables.

Therefore, our sample design consists of two different parts. In the first stage, we select couples of reproductive ages (15-49) and reconstruct their entire fertility history, based on the total number of children ever born, the age at first birth, and subsequent time intervals between parities. We estimate the SES for parents and children, which takes the highest occupation ever achieved at ages 40-49 for both generations and classified with HISCLASS (Van Leeuwen & Maas, 2011).

Preliminary results

Table 1 presents the DRM estimates for couples' total number of births for three birth cohorts (mothers), 1870-1919, 1920-1944, and 1945-1969. At the top of the table, we see the values for the diagonal cells of a social mobility table, which in other words, capture those individuals who ended up in the same social group as their fathers. The results are displayed with estimates compared to the reference group of Unskilled workers. Therefore, it can be seen fertility differentials between non-mobile couples. For those cohorts of mothers born between 1870 and 1919, when compared to the Unskilled workers, we observe higher and statistically significant results only for farmers, while almost all other groups with higher status show slightly lower completed fertility (e.g., Medium skilled workers and Low Managers).

The only exception in fertility behavior would be the group with the most elevated position (Higher manager and professionals), which shows higher fertility than unskilled workers; however, the results are not statistically significant. Conversely, for the two youngest cohorts, born from 1920 up to 1969, the fertility differentials overall reduce primarily among social groups, with only farmers and Higher Managers keeping higher fertility levels.

In the following part of the DRM table, we see two sets of coefficients, called origin and destination. These values refer to fertility estimates of intergenerationally mobile individuals compared to non-mobile ones. In this regard, origin and destination are weights showing the

resemblance in fertility terms for social mobile and non-mobile individuals, between their background social status (social group of their fathers) and their destination status (their social group as adults). The DRM specification constrains both weights to be always positive and to sum together to 1. Thus, a high value in the origin weight would inform that socially mobile resemble the non-mobile in their origin class to a large extent in terms of fertility; a higher value in the destination would mean precisely the contrary, while coefficients close to 0.5 point that mobile individuals resemble non-mobile equally in both background and destination. Therefore, we observe an essential difference between the oldest birth cohorts and others. For those born between 1870 and 1919, the resemblance is much higher in origin, while for the youngest cohorts, it is much more balanced between background and destination.

Finally, once controlled for the diagonal cells and weights in origin and destination, the models include covariates for individuals with upward and downward mobility compared to non-mobile. For the oldest cohorts born between 1870 and 1919, facing intergenerational social mobility was related to lower fertility than non-mobile, both upward and downward. Conversely, for cohorts born 1920-1944, social mobility did not show any difference with non mobility in terms of completed fertility. Only for the cohort 1945-1969, there was a slightly negative relationship between downward social mobility and couples' total number of children.

Preliminary conclusions and following analysis

Our first results show a decrease in the background importance over time and that social mobility related more with lower fertility in the past. The results, especially for those born between 1870 and 1919, including childbearing periods during the fertility transition in Sweden, show a likely effect of social mobility into fertility. This aspect was not observed in previous studies working with younger cohorts. Therefore, this might confirm the utility of using DRMs within historical demography.

Our following analysis will include different fertility outcomes, as time interval by parities and probabilities of parity transitions (as getting 3rd children). Moreover, we plan to include analysis considering income mobility, which has not been extensively studied for fertility outcomes.

Quoted References

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Table 1: Estimates from diagonal mobility models on the total number of children had by couples and social group (HISCLASS) (Cohorts born between 1870 and 1969)

	Total N of alive children								
	Cohort 1870-1920			Cohort 1920-1944			Cohort 1945-1969		
	β	<i>s.e.</i>	<i>p-value</i>	β	<i>s.e.</i>	<i>p-value</i>	β	<i>s.e.</i>	<i>p-value</i>
Diagonal cells (HISCLASS)									
Unskilled Work.	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Lower Skilled Work.	-0.05	0.06	0.13	0.10	0.06	0.87	0.03	0.02	0.00
Farmers	0.26	0.12	0.03	0.21	0.13	0.42	0.45	0.05	0.00
Medium Skilled Work.	-0.17	0.06	0.01	0.05	0.06	0.33	0.03	0.02	0.00
Lower Manager, prof. Clerical	-0.15	0.09	0.10	0.05	0.05	0.30	0.03	0.02	0.00
Higher Managers, prof.	0.20	0.15	0.17	0.24	0.08	0.09	0.14	0.02	0.16
Origin									
<i>I-q</i>	0.93	0.29	0.00	0.45	0.28	0.11	0.43	0.07	0.00
Destination									
<i>q</i>	0.07	0.29	0.82	0.55	0.28	0.05	0.57	0.07	0.00
Social Mobility (HISCLASS)									
Same (ref)	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Down	-0.16	0.08	0.05	0.00	0.06	0.99	-0.03	0.02	0.04
Up	-0.13	0.07	0.05	0.00	0.05	0.97	0.00	0.01	0.89
Birth year									
	-0.01	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00
N (mothers)	1,916			2,144			21,610		
AIC	6209.7			5484			55343		