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How important is cultural background for the level of intergenerational mobility?

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Abstract

Based on brother correlations in permanent earnings for different groups of second generation immigrants, the findings in this paper indicate that cultural background is not a major determinant of the level of intergenerational economic mobility.

Keywords: Intergenerational mobility; Sibling correlations

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*All of us do not have equal talent, but all of us should have
an equal opportunity to develop our talents.*

(John F. Kennedy, San Diego, June 6th, 1963)

1 Introduction and background

Equality of opportunities in the sense of "leveling the playing field" (Roemer, 1998) is widely seen as a normative goal policy should reach in modern societies. Intergenerational economic mobility (hereafter IM) is often interpreted as an indicator of equality of opportunities. While there is a substantial literature on IM, both in economics and sociology (Black and Devereux, 2011; Solon, 1999), we still know little about the determinants of the transmission process. This note analyzes the importance of cultural background for the level of IM.

Theoretical models (Becker and Tomes, 1979) as well as empirical studies on the determinants of IM suggest that the transmission process can be influenced by numerous factors. In principle, these can be divided into two groups: institutional factors such as the educational system, tax system, and family policy and family related factors such as parental attitudes, parental behavior, and, as a result, parental resources. I assume in the following that these family related factors are heavily influenced by the cultural background of the family.¹

Recent contributions followed different empirical strategies to analyze the determinants of IM. First, international comparisons (Björklund et al., 2002) show that the level of IM differs substantially in different countries. But in a cross-country study both, institutional factors and cultural background vary between the countries. So it is not clear which group causes the differences in the level of IM.

Another approach is followed for example in Björklund et al. (2009) who studied the change in IM over time in Sweden using long-running administrative data. Holding cultural background constant, the change in institutions during the expansion of the welfare state was accompanied by a rise in IM. Another example can be found in Bauer and Riphahn (2009) who used regional variation in institutions (age at

¹For example Javo et al. (2004) show that child-rearing styles in Norway vary significantly between individuals with Norwegian and Sami cultural background.

school entry) in Switzerland to analyze effects on intergenerational educational mobility.

In contrast to the studies mentioned above that controlled for cultural background and used institutional variation as an identification strategy, this note adds to the literature by identifying the importance of cultural background by controlling for the institutional setting. Based on a unique Danish data set I analyze IM among different ethnic groups of second generation immigrants. As the data are collected in the same country and for the same period in time for all groups, it is ensured that all individuals face the same institutional framework. If institutions are the main determinant of IM, then different ethnic groups should show similar levels of IM. If, instead, cultural background matters most, the groups should differ in the estimated mobility levels.

2 Estimation strategy and data

There are several ways to measure IM. In the literature, most authors focused on intergenerational earnings correlations or elasticities. However, recent contributions analyzed sibling correlations instead (Björklund et al., 2009; Mazumder, 2008). Sibling correlations offer a broader measure of IM compared to intergenerational earnings correlations. They cover not only the influence of parental earnings on the economic outcome of the offspring but the influence of all family background and community factors that are shared by siblings (Solon, 1999). Thus they are more adequate to assess the role of the family, especially if one wants to have an indicator of equality of opportunities.²

Following this approach, I use sibling correlations in permanent earnings as a measure of IM. The correlations are estimated as the within-cluster correlation ρ in the following multilevel model:

$$\log y_{ijt} = X_{ijt}\beta + \alpha_i + \mu_{ij} + \epsilon_{ijt} \quad (1)$$

with y_{ijt} reflecting annual earnings of sibling j of family i in year t . The matrix X contains year indicators and polynomials of age. β are coefficients to be estimated. α_i and μ_{ij} denote the family specific and the individual specific component of the error term. ϵ_{ijt} captures transitory fluctuations. The sibling

²For example Björklund et al. (2010) and Mazumder (2008) showed that parental earnings explain only a minor part of the sibling correlation.

correlation $\rho = \sigma_{\alpha}^2 / (\sigma_{\alpha}^2 + \sigma_{\mu}^2)$ is calculated as the ratio of the variance of the family-specific component and the sum of the variances of the family-specific and the individual-specific component of the error term. The sibling correlation is interpreted as the share of the variance (inequality) in permanent earnings that can be attributed to factors shared by siblings. The multilevel model is estimated via restricted maximum likelihood.

I use data from the Danish Integrated Database for Labor Market Research (IDA) which combines information from various registers of administrative data collected by the Danish government and administered by Statistics Denmark. Being administrative data the IDA database covers the entire Danish population. So there is no problem of sample selection or panel attrition (except for natural attrition). Additionally I had access to information on the immigrant status of the individuals in IDA which also comes from administrative registers. The large number of individuals in the data allows me to analyze IM not only for all second generation immigrants in Denmark but also separately for immigrants with German, Pakistani, Turkish and Moroccan background.³ The analysis is restricted to men because there might be a selection bias connected to the labor market participation of women in these subgroups. I use annual earnings for the years 2002-2006 for individuals aged 26-41. Following the literature, I exclude observations with annual earnings lower than 9000 DKK (around 1200 Euro in 2005 prices). The main descriptive statistics of the remaining sample are shown in Table 1.

3 Results

Table 2 shows the estimation results. The estimated brother correlation for Danish natives shows the well known result that the level of IM is very high in Denmark (Björklund et al., 2002). Only about 17 percent of inequality in permanent earnings can be attributed to family and community factors (first element in bold type row of Table 2). The next five columns of Table 2 contain the estimated brother correlations for the second generation immigrant subsamples. With the institutional setting being the same for all these groups, I interpret the differences in the level of IM between the immigrant groups as an indicator of the

³In an earlier version of this note, I also present results for immigrants with Yugoslavian background. But as this group contains a high number of refugees and thus is not comparable to the other groups that mainly consist of labor migrants I did not include them here. The results for this group and a discussion can be found in Schnitzlein (2011a).

importance of cultural background.

The estimated brother correlations range from 0.238 for German immigrants to 0.285 for Moroccan immigrants. This is remarkable for two reasons: first, even though the cultural background varies significantly between these groups this seems to have no influence on the level of IM. Second IM estimates based on brother correlations, for example, for Germans in Germany lie around 0.43 (Schnitzlein, 2011b). I interpret these results as support for the hypothesis that cultural background is not a major influence factor and that instead the institutional framework is an important determinant of IM. This is in line with the result, mentioned above, that the change in the institutional framework in Sweden was accompanied by a clear rise in IM (Björklund et al., 2009).

There remains one deviation to explain: The estimates for all immigrant groups are higher compared to that for native Danes, even though the result for natives falls within a 95 percent confidence interval of the correlations for the immigrant groups. At first glance, this seems to be in contrast with the just stated hypothesis on the role of cultural background. But as mentioned in section 2, a sibling correlation has to be interpreted as a broad measure of IM. It covers not only the influence of family related factors, but also neighborhood and community effects. So in the absence of perfect integration such neighborhood and community effects should lead to higher brother correlations for immigrants than for natives. Additionally their importance should increase with the (cultural) distance of the immigrant's country of origin to Denmark. This explanation is supported by two aspects of the results in Table 2. First, the only estimate that is clearly lower than all others is the one for native Danes. Second, among the immigrant groups, the estimated brother correlation is lowest for Germans which are, at least compared to the other groups, closest to native Danes.

4 Conclusions

Using results on brother correlations for different groups of second generation immigrants based on administrative data from Denmark, this note analyzes the role of cultural background in the determination of the level of IM. The results indicate that cultural background is not a major determinant of IM and that instead the institutional framework is more relevant for the level of IM. This implies, e.g., that low IM is

not a culturally determined, fixed feature of a society but could be influenced by means of social policy. To derive detailed policy advice, future research should more explicitly try to identify the most important institutions.

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Table 1: Descriptive statistics

	Natives		German		Pakistani		Turkish		Moroccan	
	Earnings	Age	Earnings	Age	Earnings	Age	Earnings	Age	Earnings	Age
2002	260,252	33.57	266,501	34.80	200,348	27.38	192,019	27.63	212,132	28.29
2003	270,561	33.69	273,997	34.81	210,920	27.84	201,167	27.81	209,578	28.66
2004	280,379	33.79	279,368	35.01	225,833	28.45	201,180	27.93	230,989	28.98
2005	291,579	33.87	298,395	35.29	238,450	28.88	217,261	28.16	232,983	29.17
2006	308,586	33.92	311,344	35.18	264,614	29.32	231,791	28.42	262,680	29.41

Note: descriptive statistics for natives and four different groups of second generation immigrants; given are median earnings and mean age for every group; only male individuals aged 26-41 with annual earnings higher than 9,000 DKK are included. All figures in 2005 real values. Basis is the full population of second generation immigrants and a 10 percent random sample of natives. The number of observations, individuals and families for the different groups are shown in the last three lines of Table 2.

Table 2: Brother correlations

	Natives	all 2nd gen	German	Pakistani	Turkish	Moroccan
Family component (σ_α^2)	0.059 (0.004)	0.126 (0.021)	0.105 (0.054)	0.109 (0.035)	0.105 (0.046)	0.144 (0.090)
Individual component (σ_μ^2)	0.298 (0.004)	0.353 (0.022)	0.337 (0.057)	0.315 (0.038)	0.308 (0.048)	0.362 (0.093)
Transitory component (σ_ν^2)	0.142 (0.000)	0.275 (0.004)	0.156 (0.007)	0.299 (0.011)	0.360 (0.013)	0.303 (0.022)
Correlation (ρ)	0.165*** (0.010)	0.263*** (0.042)	0.238** (0.119)	0.256*** (0.079)	0.255** (0.108)	0.285* (0.169)
Observations	240,737	13,512	1,384	2,502	2,518	601
Families	49,584	3,661	328	611	843	152
Individuals	63,829	4,423	392	832	982	209

Note: restricted maximum likelihood estimates based on a sample of male 2nd generation immigrants (excluding immigrants from Yugoslavia) and native Danes, lower earnings limit of 9,000 DKK, age between 26 and 41; the standard errors of the brother correlations are calculated via bivariate delta method; standard errors in parentheses; *** indicate significance on 1 percent level; ** indicate significance on 5 percent level; * indicates significance on 10 percent level.