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Gender, Geography, and Generations: Intergenerational Educational Mobility in Post-Reform India

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Summary. — The existing studies report substantial improvements in educational mobility in post-reform India using intergenerational regression coefficient (IGRC) across age cohorts in a cross-section survey. In contrast, our estimates of sibling (SC) and intergenerational (IGC) correlations for the same age cohort from two surveys show strong persistence, stronger than in Latin America, which remained largely unchanged from 1991–92 to 2006. Only the women in urban areas experienced substantial improvements, with the lower caste urban women benefitting the most. As measures of mobility, IGC and SC are more informative and robust than IGRC, and the widely accepted conclusions based on IGRC alone may be misleading.

Key words — intergenerational mobility, education, sibling correlation, intergenerational correlation, rural–urban inequality, gender gap

1. INTRODUCTION

Following wide ranging economic liberalization in the early 1990s, India experienced sustained high economic growth; per capita GDP grew at a 4% rate over the two decades after liberalization. The evidence indicates that while growth led to a significant poverty reduction, it was also associated with a rise in inequality (World Bank, 2011). [1] There is increasing concern that the benefits of economic growth were not shared broadly, and led to a widening of the rural–urban gap (Bardhan, 2007, 2010; Basu, 2008; Dreze & Sen, 2011). [2] Dreze and Sen (2011) argue that Indian economic reform has been an "unprecedented success" in terms of economic growth, but an "extraordinary failure" in terms of improvements in the living standards of general people and social indicators.

However, an important question is whether the observed increase in cross-sectional inequality is an outcome of efficient incentive structure in a liberalized and market-oriented economy that rewards hard work and entrepreneurial risk-taking, or is it primarily due to inequality of opportunity arising from differential access to education, markets, and political power? [3] The rise in cross-sectional inequality becomes a serious concern especially when it is a result of inequality of opportunity, i.e., the inability of children born in poorer families and disadvantaged social groups such as low castes to move beyond their parents' position in economic ladder by their own effort and choices. [4] The goal of this paper is to analyze the trends in and levels and patterns of educational mobility over a period of almost a decade and a half after the liberalization in 1991 (1993–2006), with a special focus on possible gender and spatial differences (rural–urban and village/neighborhood fixed effect). Education is used as an indicator of economic status in the absence of suitable data on permanent income. [5] The role of education may be especially important in post-reform India where growth has been concentrated in skill intensive sectors: the software industry and call centers being iconic examples (Bardhan, 2010; Kochhar, Kumar, Rajan, Subramanian, & Tokatlidis, 2006; Kotwal, Ramaswami, & Wadhwa, 2011). [6]

Our results show that the choice of the measure and data matters for the substantive conclusions: while the existing studies conclude that educational mobility has improved substantially in India in recent decades, the evidence presented in this paper paints a more sober picture: educational persistence is very high in India and it has remained stagnant on an average. There are however important gender and geographic differences concealed by the average measures (see below).

An important finding from the sibling studies in developed countries is that gender or geographic location (as measured by neighborhood effect) exerts little influence on educational or income mobility of children in recent decades (Bjorklund & Salvanes, 2011; Solon, 1999 for a survey). [7] Are gender and geography also largely irrelevant for educational mobility of children in developing countries? One can argue that the role of gender and geography is likely to be much more prominent in a developing country such as India, because gender bias against women is more common and stronger, geographic mobility is lower, and many areas (especially rural) are not integrated with the urban growth centers because of underdeveloped transport infrastructure. [8] One might also worry that the disadvantaged social groups (e.g., low caste) in India may not be able to take advantage of the opportunities offered by economic reform and globalization, and there might be complex interactions among gender, geography, and social identity.

To understand the educational mobility in post-reform India, we use two related measures: (i) sibling correlation (SC) and (ii) intergenerational correlation (IGC) in educational attainment. In contrast, most of the available evidence on intergenerational educational mobility in India is based on variants of intergenerational regression coefficient (IGRC).

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The data used in this paper come from the 1992–93 and 2006 rounds of the National Family Health Survey (NFHS) in India. The first period of our sample nearly overlaps with the timing of economic liberalization (1991–92), and thus provides a plausible benchmark for understanding the nature of mobility over a period of 15 years after liberalization. We focus on the role of family background in educational attainment of the youth (16–27-year olds at the time of the survey) who constitute the bulk of the new entrants into the labor market. Thus we compare the estimated effects of family background on the educational attainment of the "youth of 1991" (i.e., the 16–27-year age cohorts at the time of the 1991–92 survey) to that of the "youth of 2006" (i.e., the 16–27-year age cohorts at the time of 2006 survey). In contrast, most of existing studies rely on different age cohorts from a single cross-section survey.

Our estimates of sibling and intergenerational correlations suggest no significant change in educational mobility for a large proportion of the relevant population (especially men) in India from 1992–93 to 2006. Sibling (and intergenerational) correlations in our full sample have declined only marginally from 0.64 (0.57) in 1992–93 to 0.62 (0.54) in 2006, respectively. [9] The estimates indicate that a decade and a half after the economic liberalization in 1991, the absolute magnitudes of sibling and intergenerational correlations in India in 2006 are still very large, larger than the available estimates for the Latin American countries (for sibling correlations) and other Asian countries (for intergenerational correlations). [10] The aggregate picture of stagnation, however, hides important gender and spatial differences, particularly some of the good news. While the evidence indicates that the sibling correlation among men (brothers) has increased slightly from 0.614 in 1993 to 0.624 in 2006, it experienced a moderate decline for women (sisters), from 0.780 to 0.696. Geographic location is important, both in 1992–93 and 2006; the neighborhood effect accounts for about 40% of the sibling correlation among women and a third among men. In terms of geographic pattern, we find that sibling correlation remained essentially unchanged in rural areas (for both men and women), but declined marginally in urban areas. Perhaps the most interesting trends and patterns emerge when we partition the data using both gender and geography. The sibling correlations among men (brothers) in rural areas have increased a bit, but the correlation has in fact declined marginally in the urban areas. In contrast, the sibling correlations among women (sisters) registered a decline in both rural and urban areas. However, geography matters for women also, the women in urban areas experienced much more substantial decline in sibling correlations. As a result, the gender gap in sibling correlation has virtually disappeared in urban areas, a welcome development in a country with strong son preference. Despite moderate improvements in mobility among women, the gender gap in rural areas, however, remains substantial. We also find that among the urban women, it is the lower caste women who experienced the largest decline in the sibling correlation. The evidence on improvements in educational mobility of women in India is similar to the available evidence on China and Malaysia (see Emran and Sun (2011) on China and Lillard and Willis (1994) on Malaysia). [11] The analysis by age cohorts reveals moderate improvement in mobility for younger age cohort (16–19-year olds). The broad trends in and patterns of educational persistence as measured by sibling correlations and discussed above are also observed in the estimates of intergenerational correlations in education between parents and children. The analysis of mobility at different points of the joint distribution of parent and children education indicates that the improvement in mobility was concentrated mostly at the upper part of the distribution. For children of least educated parents, mobility worsened in 2006 even for girls.

The rest of the paper is organized as follows. The conceptual framework underpinning empirical work is described in Section 2. Data and empirical strategy are elaborated in Section 3. Section 4 organized in different subsections presents the main empirical results, and Section 5 reports as set of robustness checks. Some preliminary conjectures for explaining the observed trends in and patterns of educational mobility in post-reform India are offered in Section 6. The paper concludes with a summary of the findings.

(a) *Related literature*

Literature on intergenerational economic mobility in developed countries is large, most of which focuses on intergenerational correlation between parents' and children's incomes (for reviews, see Solon (1999), Black and Devereux (2011)). [12] However, economic analysis of intergenerational mobility in the context of developing and transitional countries remains a relatively unexplored area of research. The available contributions on developing countries focus on intergenerational regression coefficient (IGRC), but do not estimate intergenerational (IGC) or sibling correlations (SC); see, for example, Jalan and Murgai (2008) and Maitra and Sharma (2010) on India, Lillard and Willis (1994) on Malaysia, Emran and Shilpi (2011) on Nepal and Vietnam, and Emran and Sun (2011) on China. The only study known to us that uses sibling correlation in the context of developing countries is Dahan and Gaviria (2001) who provide estimates of sibling correlations in education for 16 Latin American countries. They find that El Salvador, Mexico, Colombia, and Ecuador are the least mobile (high sibling correlation) countries, with sibling correlation explaining almost 60% of the variation in educational outcomes.

Most of the existing studies on intergenerational educational mobility in developing countries uses IGRC (and in some cases IGC) to understand persistence between parents' and children's educational attainments. [13] However, it has been increasingly appreciated in the literature that the IGRC and IGC are partial and incomplete measures at best, and the influence of family background on children extends much beyond what is implied by parental characteristics (Bjorklund, Lindahl, & Lindquist, 2010; Mazumder, 2008). There is now a substantial literature in economics that uses sibling correlation in economic outcomes as an omnibus measure of immobility (for early contributions, see among others, Corcoran *et al.* (1990, 1991), Solon, Corcoran, Gordon, and Laren (1991); for a recent discussion on the advantages of sibling correlation for understanding intergenerational mobility see Björklund and Jäntti (2012)). [14] The available evidence in the context of developed countries shows that the factors common to siblings explain from 40% to 65% of variation in educational outcomes (Bjorklund & Salvanes, 2011). In contrast, the intergenerational correlation between parents and children – the traditional measure of intergenerational persistence – explains only 9–21% of variations in children's educational outcome. Recent evidence also indicates that IGRC estimates are substantially biased due to coresident sample selection, but the bias in IGC is very small (Emran & Shilpi, 2014). To the best of our knowledge, there is no study in the literature on developing countries that exploits estimates of both sibling and intergenerational correlations to trace out the levels, trends in and patterns of intergenerational mobility. [15]