Intergenerational Educational Mobility in South Asia

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Abstract

We estimate intergenerational education mobility across time, space and communities for seven countries in South Asia, a region with low average mobility by international standards. We draw on thirty–nine nationally representative household surveys to create a harmonized dataset with matched parent–child education attainment data for India, Pakistan, Afghanistan, Nepal, Bhutan, Bangladesh and Sri Lanka spanning individuals born between 1960–2001. Our results suggest a distinct hierarchy of South Asian countries in terms of intergenerational mobility. Bhutan and India have the highest and lowest mobility in the region respectively. With the exception of Sri Lanka, where all provinces exhibit high mobility, national mobility measures mask substantial underlying heterogeneity by geography. In all seven countries, the education rank of gender gap in intergenerational education mobility is either negligible or female favoring. We also identify vast gaps in intergenerational mobility by social group membership (i.e. caste, religion, and ethnicity) across the region. Finally, our results suggest that intergenerational mobility increases with local income per capita, urbanization rates, government expenditure on education and school quality. Consistent with prior research at the cross–country level, we find that provinces with high income inequality exhibit low intergenerational mobility across the South Asian region.

1 Introduction

South Asia and Sub-Saharan Africa exhibit the lowest intergenerational mobility across the world (Narayan and Van der Weide, 2018). South Asia is a particularly interesting region for the study of intergenerational mobility for a number of reasons. First, South Asian countries present substantial variation in social structures such as caste hierarchy, religious composition, and historical gender norms. Second, South Asian countries have followed divergent political–economic trajectories in the post–colonial era, resulting in variation in access to education attainment and economic opportunity within the region. Third, a quarter of the world's population and a third of the world's extreme poor live in the region (Castaneda-Aguilar et al., 2020). The interaction between upward mobility and growth in economic opportunities has implications for the persistence of poverty and economic inequality in the region. Prompted by these factors, this study estimates intergenerational mobility across space, time, and social groups for seven countries in South Asia.

A perfectly mobile society is one where the socioeconomic outcomes of individuals are unrelated to the corresponding outcomes of their parents. Parochial social structures, such as the caste system, are linked with low intergenerational mobility in the South Asian region (Jodhka and Shah, 2010). The caste system mandates that occupation is hereditary and forbids occupational mobility. This creates artificial barriers to intergenerational mobility. However, economic growth and widespread access to education can potentially erode intergenerational rank persistence and unlock upward mobility.

In India, Asher et al. (2021) develop a new measure of intergenerational mobility that circumvents data constraints in developing country settings. This measure, *bottom half mobility*, is the average education attainment rank of a child born to parents in the bottom half of the education distribution. The present paper uses bottom half mobility and related measures to study intergenerational mobility in the entire South Asian region.

We assemble matched parent–child education attainment data for seven countries. The underlying data is drawn from thirty–nine nationally representative household surveys across India, Pakistan, Afghanistan, Nepal, Bhutan, Bangladesh and Sri Lanka. The underlying data for the study is a harmonized micro–economic dataset spanning 5.9 million individuals in the South Asian region. [1] For decadal birth cohorts ranging from 1960 to 2001, we generate comparable in-

[1] This data backbone has been released along with the present study. https://www.devdatalab.org/mobility-south-asia

tergenerational mobility measures for men and women separately by birth cohort and country.

Our results suggest a clear hierarchy of South Asian countries in terms of intergenerational mobility. Sri Lanka and Bhutan are the most upwardly mobile countries in the region whereas India and Pakistan exhibit the lowest intergenerational mobility. The average education attainment rank of a male born to parents in the bottom half of the education distribution in the 1980–90 decade is 43.9, 43.7 and 38.1 respectively in Bhutan, Sri Lanka and India.AB: I want to say more to help the reader benchmark that 38.1 is low and surprising, and what a 43.9 rank means.. but can't find the words.

We find vast heterogeneity in bottom half mobility measures across and within countries. Mobility estimates vary substantially by geography and social groups. For instance, some Indian states such as Goa and Kerala exhibit upward mobility as high as Sri Lanka for both men and women. Other Indian states exhibit mobility as low as Taliban–dominated South Afghanistan. Mobility across social groups is least divergent in Bangladesh and most divergent in Nepal. Sri Lanka has witnessed the greatest convergence in upward mobility between historically advantaged and disadvantaged social groups.

Finally, bottom half mobility is positively correlated with income per capita, urbanization, top half mobility, learning outcomes and public education expenditure at the sub–national level. Regions with high income inequality exhibit low bottom half mobility. The descriptive evidence presented in this paper provide insights to anchor policy efforts addressing persistence of socio–economic deprivation across generations in South Asia.

Contributions to the literature

This study contributes to the broad literature on the changing landscape of disparity in access to economic opportunity in developing countries. Page and Pande (2018) show that 60% of the world's poor live in middle–income countries where economic growth has been accompanied by widening income inequality. Reseaarch leveraging tax records across Brazil, India, South Africa and the Middle East has advanced our understanding of trends in income inequality over time (Assouad et al., 2018). Chancel and Piketty (2019) find using previously unavailable tax records that the income share of the top 1% of income earners shrank considerably between 1922 and the mid–1980s but continued to widen thereafter until the 21st century. Widening inequality, new data, and novel methods have led to a renaissance in the study of intergenerational mobility.

Researchers with access to rich official government microdata have shown striking differences

in intergenerational mobility across countries, cohorts, regions, and communities. However, these studies have mostly been confined to rich countries such as the US (Chetty et al., 2020) and Denmark (Boserup et al., 2014). This is an important omission considering that while developing countries tend to have much lower mobility than richer countries, there is considerable heterogeneity in mobility within developing countries (Narayan and Van der Weide, 2018).

Until recently, there was no standardized measure of relative mobility suitable for comparative analysis across population groups in data–constraint developing country contexts. However, the bottom half mobility measure developed by Asher et al. (2021) fills this gap by constructing the bottom half mobility measure. Measures of relative upward mobility were pioneered by Solon (1999) and applied to understand the trends and determinants of intergenerational mobility by Chetty et al. (2014) in the US context. The bottom half mobility measure is similar to prior measures of relative mobility in that it is separable from change in inequality and economic growth. It is different in that it can be constructed using coarse underlying data available in developing country contexts. Our study is the first application of the bottom half mobility measure in a *comparative* analysis of intergenerational mobility across developing countries. This is notable considering that the bottom half mobility measure is the only measure of relative mobility that can be reliably compared across subgroups, countries and time in developed country settings (Asher et al., 2021).

We add to the evidence presented by Narayan and Van der Weide (2018) on disparity in intergenerational mobility across regions by providing sub–regional and sub–national estimates of mobility across space and time in South Asia. Results from Asher et al. (2021) suggest convergence in mobility gaps between Hindu upper–caste and historically oppressed Scheduled Caste communities and widening of mobility gaps between Hindu upper–caste and Muslim communities. We extend this analysis of mobility gaps at the social group level by estimating variation in mobility across communities, gender and sub–national geography in the entire South Asian region. Following Card et al. (2022), we investigate the relationship between variation in upward mobility measures and quality of education within South Asia.

The remainder of the paper proceeds as follows. Section 2 provides context on underlying social and economic characteristics of the countries in our sample. Sections 3 and 4 explain the construction of the bottom half mobility measure and underlying data sources respectively. Section 6 presents the results on national bottom half mobility over time across South Asia, determinants of upward mobility as well as heterogeneity analyses by geography and social

groups. Section 7 discusses the results and concludes.

2 Context

South Asia is home to a quarter of the world's population and is one of the regions with the lowest average relative mobility across the world (Narayan and Van der Weide, 2018). However, not much is known about the variation in relative mobility within the region. We expect variation given the disparity in economic growth within the region (see Figure A.1). As of 2019, the wealthiest and poorest countries in our analysis sample had a GDP per capita of 13,070 USD (Sri Lanka) and 2,065 USD (Afghanistan) respectively. While the poverty rate for the overall region declined dramatically between 2002 and 2014, the pace of decline has varied substantially within the region.

We also expect variation in mobility trends over time across countries due to a vast underlying variation in educational attainment in the region. Over 90% of the adult population in Sri Lanka are literate compared to about 40% in Afghanistan. Our harmonized survey data confirm the differences in education attainment across countries. Respondents in Bhutan and Sri Lanka have substantially higher middle and high school completion rates compared to the rest of the countries in the region (see Figure A.2). Gaps in education attainment persist despite the adoption of universal access to education in some form across the Constitutions of each of these countries [2].

Given the enduring patterns of systemic social class stratification within countries, it is important to map persistent intergenerational disparity in access to economic opportunity within South Asian countries. In India, a vast empirical literature has established that access to economic opportunity is determined by caste, religion and gender (Ito, 2009; Hnatkovska et al., 2012; Asher et al., 2021; Heath and Jayachandran, 2017). Similarly, caste, religion and ethnicity drive socio–economic polarization in Nepal (Wagle, 2010; Gellner, 2007). Rigorous empirical evidence on the interaction between gender, ethnic group membership and region of origin is limited in other South Asian countries. There is some evidence on

[2] In Afghanistan, Article 43 of the Constitution recognizes education as the right of all citizens. The 2018 Bhutan National Education Policy builds on prior attempts to ensure equal education access to all children by emphasizing the need to consider gender, geographical location and socio–economic background for undergraduate scholarshop schemes. The 2010 Bangladesh National Education Policy extends free and compulsory education to all children and emphasizes ensuring equal opportunity for children in minority ethnic groups. The Right to Education Act (2009) in India mandates free and compulsory education for all children below 14 years of age and has provisions for reservation of 25% of seats across privates chools for children from economically disadvantaged social groups. Article 31 and Article 25–A of the Constitutions of Nepal and Pakistan also mandate free and compulsory education for all children below 16 years of age.

geography as a more important determinant of access to economic opportunity compared to religion in Bangladesh (Wodon, 2000), on divergent patterns of inequality by province in Pakistan (De Kruijk and Naseem, 1986) and the association between ethnic group and susceptibility to poverty at the household level in Sri Lanka (Jayasinghe, 2019). A range of affirmative action policies have been adopted by the national governments in each country to bridge the gap in socio–economic outcomes across social groups [3].

3 Methods

This study focuses on the preservation of relative status across generations in developing countries. This is a distinctly different question from changes in growth, poverty or inequality. We define a society with high intergenerational mobility as one where a child's rank in the distribution of socio–economic outcomes is independent of her parent's rank. Following methods isolating relative mobility from absolute mobility of socio–economic outcomes in prior studies (Solon, 1999; Chetty et al., 2014; Chetty et al., 2020), we use a measure of intergenerational mobility suitable for data–constrained developing country contexts. Following the methods in a prior on mobility estimates in India (Asher et al., 2021), we constructed a mobility measure using matched intergenerational education attainment data. This is a common practice in mobility estimation in developing countries in the absence of reliable intergenerational income data (Solon, 1999; Güell et al., 2013; Wantchekon and Stanig, 2015; Card et al., 2022; Derenoncourt, 2019; Alesina et al., 2021).

In the South Asian context, it is difficult to replicate the standatd intergenerational income mobility measure ($p25$). This measure has been used by Chetty et al. (2014) in a series of studies on absolute upward mobility in the United States. It describes the average rank of a child born to a parent in the 25th percentile of the income distribution. The $p25$ measure cannot be replicated in India and similar contexts as existing data on income are narrow and unreliable. Further, education attainment, a proxy measure of income in developing country contexts, is non–granular. As an illustration of this limitation, consider the education attainment ranks of fathers and sons across three ten–year birth cohorts in Pakistan in Table 1

[3] Until 2020, a 50% reservation for entry level government jobs existed for the kin of freedom fighters, women, residents of disadvantaged districts and members of indigenous communities in Bangladesh. The Indian Constitution provides quotas in schools, national and state legislatures, village panchayats, and a share of government jobs for members of Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Classes (OBCs) (Borooah, 2005). Sri Lanka provides gender quotas for political positions and admission quotas for residents of disadvantaged regions in university education (de Silva et al., 2021; Vijeyarasa, 2020). In Nepal, affirmative action policies exist for the inclusion of marginalized castes in civil service jobs (Sunam et al., 2022).

and Figure 1. Table 1 shows transition matrices for each decadal birth cohort for matched father and son pairs in Pakistan. Figure 1 shows the average son education rank for each father education rank group. In the 1971–80 birth cohort, 59% of fathers are in the bottom–coded education category. In the 1991–2000 birth cohort, the corresponding share is 45%. In this context, we are unable to identify a father at the 25th percentile of the distribution and the expected education rank for their sons due to the coarseness of the distribution.

To circumvent the issue presented by coarseness of education distribution in South Asia, the bottom half mobility measure uses a partial identification approach described in Asher et al. (2021). The framework underlying this measure allows us to construct precise bounds on the expected child education rank, conditional on parent education rank. The resulting measure describes the education outcome of the average child born to parents in the bottom half of the parent education distribution.

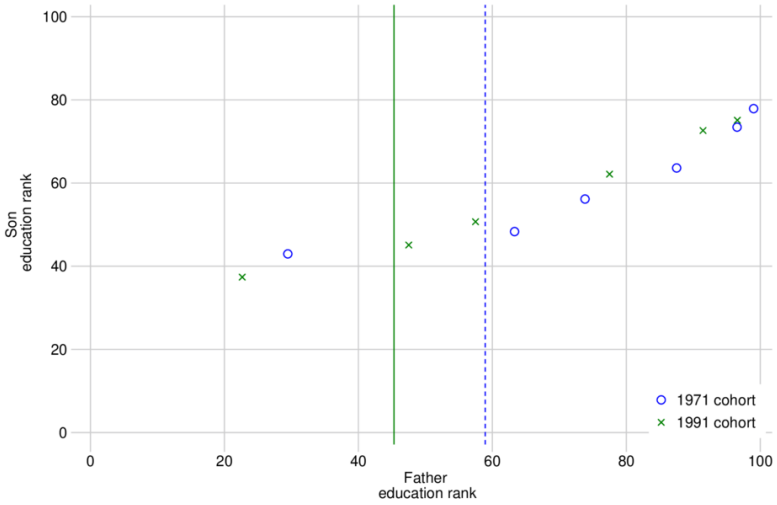
Table 1

Transition Matrices for Father and Son Education in Pakistan

	A. Sons Born 1971–80					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(34%)	(9%)	(17%)	(19%)	(20%)	
<2 yrs. (59%)	0.43	0.11	0.16	0.17	0.13	1158.00
Some primary (9%)	0.33	0.09	0.23	0.19	0.15	142.00
Completed primary (12%)	0.21	0.09	0.24	0.21	0.24	237.00
Some middle (15%)	0.18	0.03	0.16	0.27	0.36	296.00
Some secondary (3%)	0.09	0.00	0.10	0.31	0.50	77.00
Some Sec+ (2%)	0.09	0.01	0.02	0.22	0.66	84.00
	B. Sons Born 1981–90					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(23%)	(6%)	(18%)	(26%)	(28%)	
<2 yrs. (47%)	0.38	0.08	0.21	0.21	0.13	31425.00
Some primary (5%)	0.22	0.10	0.24	0.28	0.17	3226.00
Completed primary (16%)	0.14	0.06	0.25	0.31	0.24	9887.00
Some middle (22%)	0.06	0.03	0.13	0.35	0.43	13269.00
Some secondary (4%)	0.03	0.01	0.05	0.22	0.69	2395.00
Some Sec+ (7%)	0.02	0.00	0.03	0.14	0.81	4353.00
	C. Sons Born 1991–2000					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(19%)	(5%)	(15%)	(25%)	(36%)	
<2 yrs. (45%)	0.33	0.07	0.19	0.22	0.19	51594.00
Some primary (4%)	0.17	0.11	0.19	0.28	0.25	4221.00
Completed primary (16%)	0.12	0.05	0.20	0.29	0.33	15612.00
Some middle (25%)	0.05	0.02	0.10	0.31	0.51	22780.00
Some secondary (3%)	0.02	0.01	0.04	0.17	0.76	2619.00
Some Sec+ (7%)	0.02	0.01	0.03	0.11	0.83	9186.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in Pakistan. Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

Figure 1
Father–Son Rank–Rank Moments in Pakistan, 1971–80 and 1991–2000



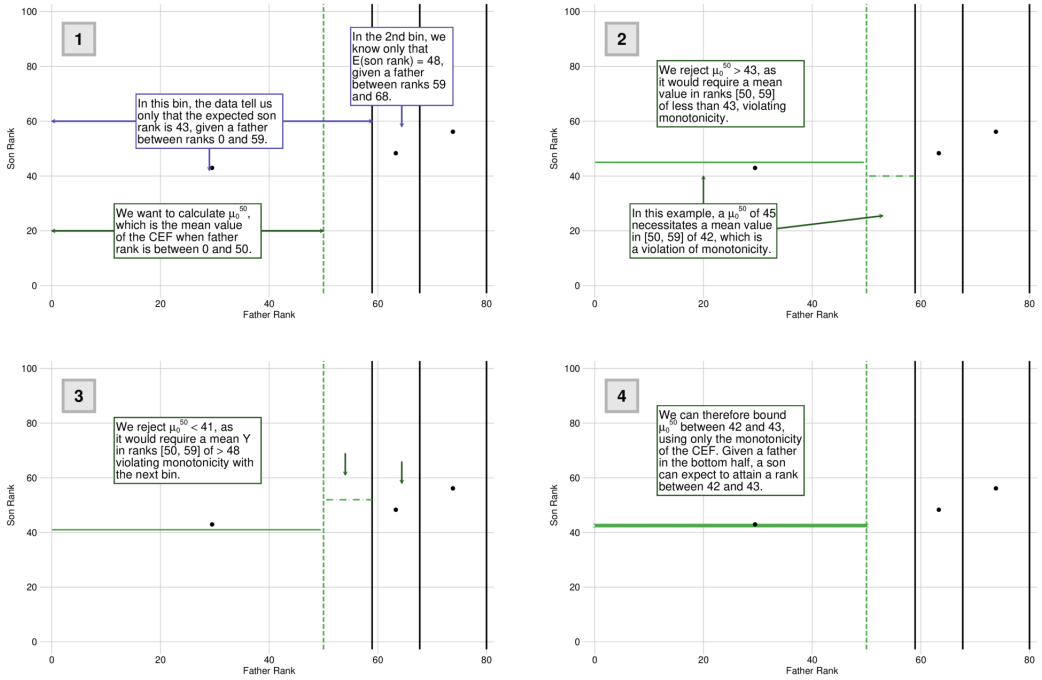
Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for two ten–year birth cohorts in Pakistan. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1991–2000 birth cohort, and the dashed line corresponds to the 1971–1980 birth cohort. The x–coordinate of each point on the figure is the mid–point of the corresponding father education bin. The y–coordinate is the weighted average rank of sons born to fathers in the specific education bin.

The mathematical representation of the bottom half mobility measure is: $\mu_0^{50} = E(y|x \in [0,50])$, where x is the parent education attainment rank and y is the child's education attainment rank. The advantage of this measure lies in the ability to generate tight bounds on intergenerational education mobility despite the coarseness of education attainment distribution in developing country contexts. Figure 2 illustrates the calculation of bounds on bottom half mobility (μ_0^{50}) for the 1971–80 birth cohort in Pakistan. As described in each panel of Figure 2, we are able to estimate precise upper and lower bounds on bottom half mobility (μ_0^{50}) for matched father–son pairs for the 1971–80 birth cohort in Pakistan based on a simple principle of monotonicity. The central assumption is that the average education rank of children born to parents in a particular bin of the education distribution cannot be lower than the rank of children born to parents in the preceding bin, and will

not exceed the rank of children born to parents in the subsequent bin.

Figure 2

Sample Calculation of μ_0^{50} for 1971–80 Birth Cohort, in Pakistan



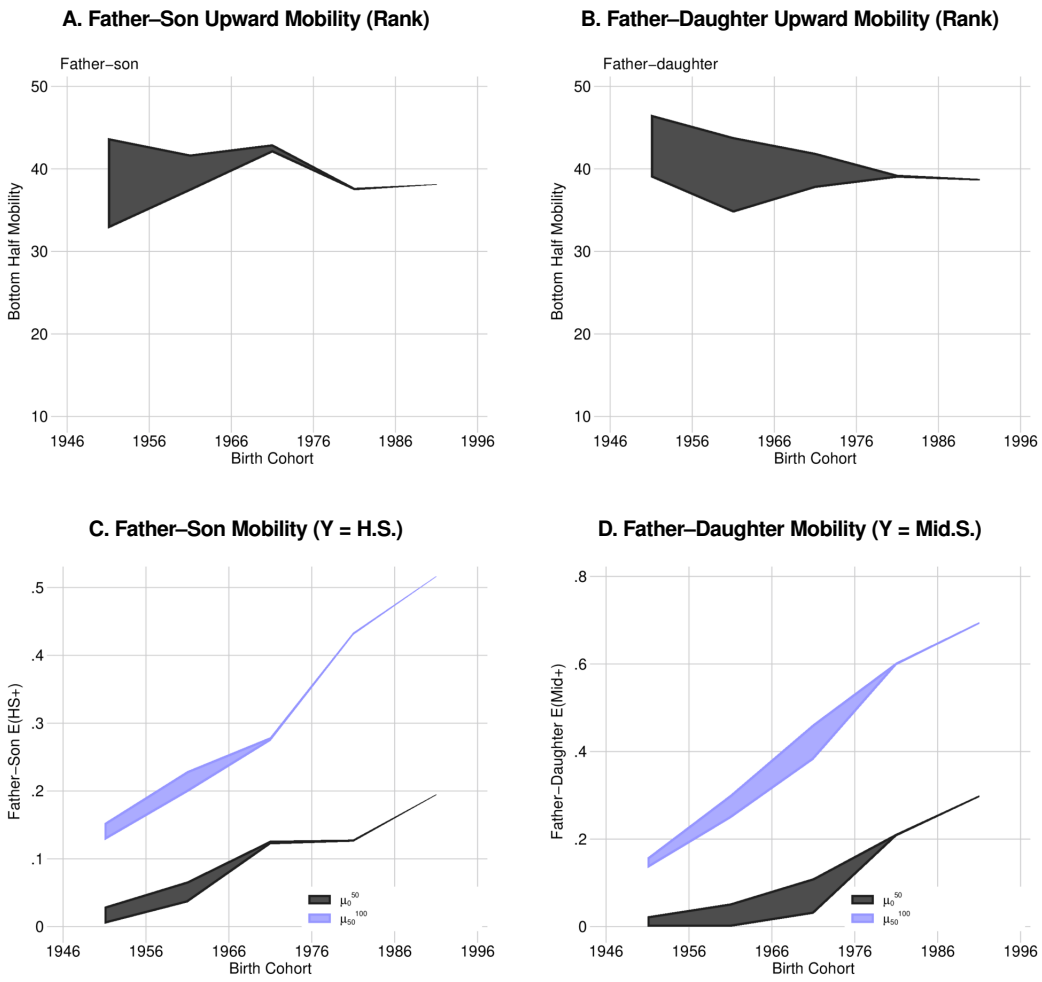
Note: Figure 2 illustrates the process of calculating bounds on $\mu_0^{50} = E(y|x \in [0,50])$ *using data from the 1971–80 birth cohort in Pakistan. Note that this figure applies Figure 3 in Asher et al. (2021) to matched parent–child education data from Pakistan.*

Figure 3 illustrates upper and lower bounds on μ_0^{50} for each birth cohort in Pakistan. These bounds were constructed as illustrated in Figure 2 and give us a precise measure of persistence of education ranks across generation despite the coarseness of underlying data, evident in Table 1 and Figure 1.

In Figure 3, we observe bounds on national intergenerational mobility for Pakistan, using birth cohorts between 1951–2000. Panels A and B show bottom half mobility where x is parent education rank and y is child education rank. Panels C and D show an analagous measure where y is education level (high–school or middle school) attainment rates of children born to parents in the bottom half of the education distribution.

Figure 3

Bottom Half Mobility, Fathers to Sons and Daughters in Pakistan



Note: Panels A and B show bounds on bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent education rank and y is child education rank. This is the average education rank attained by children born to parents who are in the bottom half of the education distribution. Panels A and B correspond to μ_0^{50} measures for father–son and father–daughter pairs respectively. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). $E(HS|x \in [0,50])$ (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. $E(HS|x \in [50,100])$ (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

The corresponding transition matrices, nonparametric parent and child education rank

graphs and figures illustrating bounds on μ_0^{50} over time for India, Afghanistan, Bangladesh, Nepal, Bhutan and Sri Lanka can be found in the Appendix.

4 Data

We draw on thirty–nine national household survey rounds across Pakistan, Afghanistan, India, Bangladesh, Sri Lanka, Bhutan and Nepal for the analyses presented in this paper. Table 2 describes the corresponding survey details (i.e. survey name, year, sample size) for each country. In the Appendix, Table B.1 documents additional administrative datasets that were explored and explains why these were not suitable for the present study. Table B.2 provides background on each national survey that was incorporated in the analysis.

To construct intergenerational education mobility measures, we require matched parent–child education attainment, disaggregated by gender. The ideal underlying data would report education attainment of parents, even if those parents are deceased or do not co–reside with their children. However, this requirement is only met by the data we have at hand for India. We found surveys that report matched parent–child education for all individuals irrespective of coresidence status in Sri Lanka, Nepal, Pakistan and Bhutan [4]. However, the sample sizes of these standalone surveys were too small to accurately estimate intergenerational mobility over time. Small sample would also preclude disaggregated analyses of upward mobility by gender, geography, and social groups across these countries. For these reasons, following the approach in Asher et al. (2021), we turned to nationally representative household sample survey rounds for all countries. Each of these surveys provide a household roster module with age, gender, education, and in most cases, religion and social group details for each individual in a household. However, these data are only available for individuals residing in the household at the time of the survey. As a result, we are able to link parent–child education attainment only when parents and children reside in the same household. This presents a sample bias issue for all datasets in our analysis set except a few instances as highlighted in the last column in Table 2.

[4] The Pakistan Integrated Household Survey (1991), STEP Skills Measurement Household Survey (Sri Lanka), Nepal Living Standards Survey (2011), Bhutan Living Standards Survey (2003)

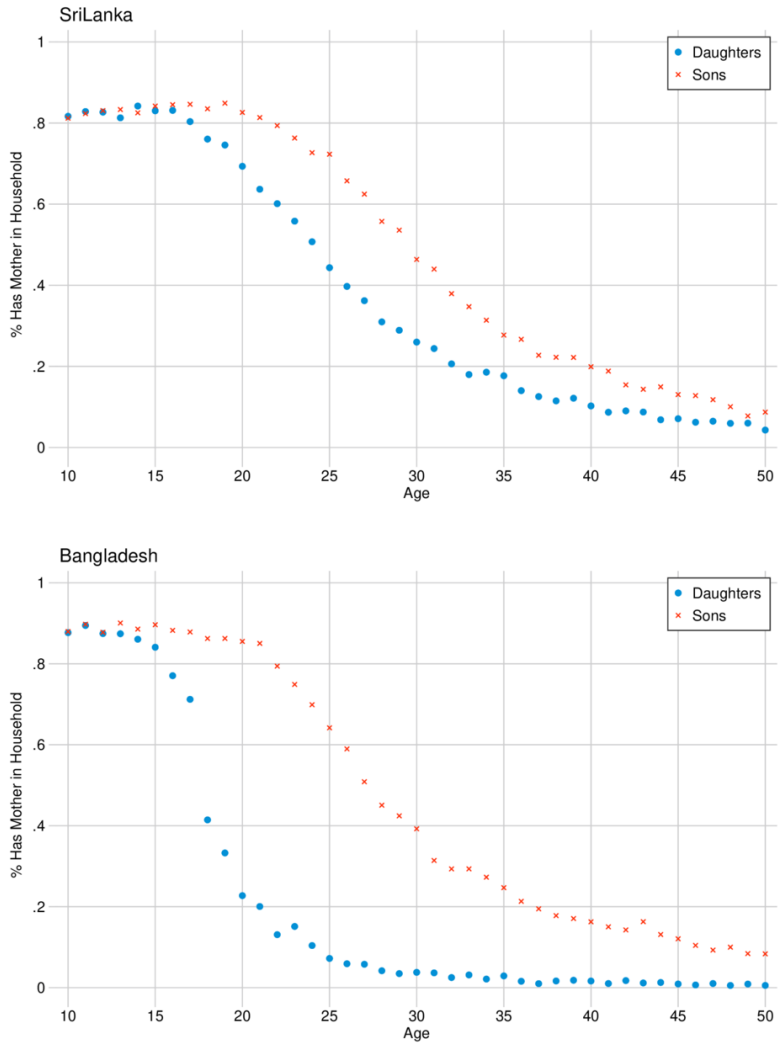
Table 2
Datasets Harmonized for Analysis

Country	Survey Name	Years of Data	N: HH	Co-resident
Afghanistan	Afghanistan Living Conditions Survey	2013, 16	40607	Yes
Afghanistan	National Risk & Vulnerability Assessment	2008, 12	41404	Yes
Afghanistan	Income, Expenditure & Labor Force Survey	2019	18344	Yes
Sri Lanka	Household Income & Expenditure Survey	1991, 95, 2002, 06, 09, 12	95719	Yes
Nepal	Nepal Living Standard Survey	1995, 2003, 11	7316	Yes (exc. 2011)
India	India Human Development Survey	2012	38387	No
Bangladesh	Household Income & Expenditure Survey	2000, 05, 10, 16	75828	Yes
Bhutan	Bhutan Living Standards Survey	2003, 07, 12, 17	34415	Yes (exc. 2003)
Pakistan	Pakistan Integrated Household Survey	1991	4791	No
Pakistan	Pakistan Social & Living standards Measurement Survey	2006, 08, 10, 12, 14, 19	283426	Yes
Pakistan	Household Income & Expenditure Survey	2001, 04, 05, 07, 10, 11, 13, 15, 18	129906	Yes

Note: The last column titled "Co–resident" asks if parent education data is available only for individuals who coreside with their parents, or all individuals regardless of coresident status.

Since our analysis set excludes linked parent–child education attainment data for children who have moved out of their parents' homes, we face a risk of selection bias if upwardly mobile children are more likely to stay or exit. To address this, we need to limit the analysis sample to an age group where children have completed the highest level of education, and yet coresidence rates are high. This optimal age window differs across genders since girls leave home at a younger age than boys. The ages at which girls and boys leave home also differ vastly across countries. For instance, consider the graphs in Figure 4 showing share of sons and daughters coresiding with their mothers at each age across Bangladesh and Sri Lanka. In Bangladesh, 60% of 18 year old women have left their natal homes, whereas this share is about 25% in Sri Lanka in our analysis sample.

Figure 4
Coresidence Share at each age varies by Gender and Country



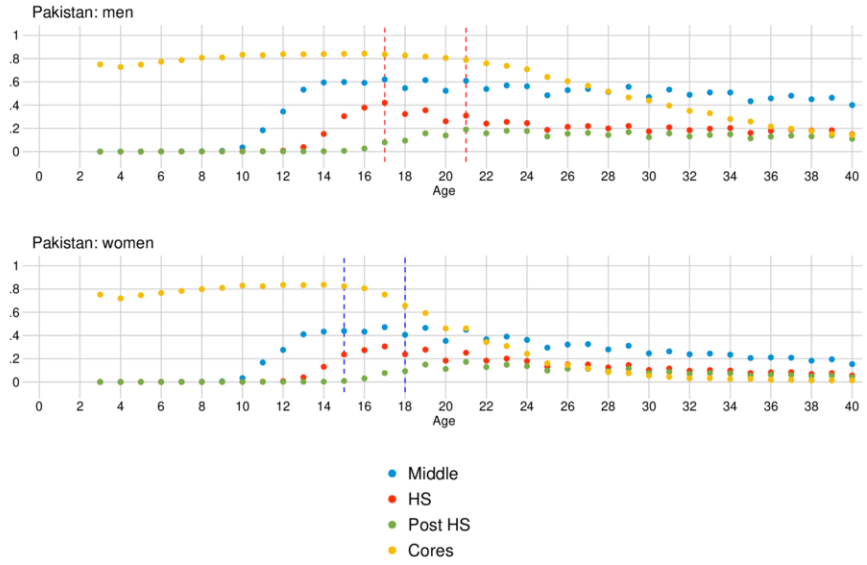
Note: Corresponding coresidence plots showing coresidence with father share for Sri Lanka and Bangladesh, and coresidence graphs for all other countries have been included in the Appendix.

In addition to the variation in ages at which coresidence rates start to decline across countries, we also need to address the dramatic difference in education attainment rates across countries. For instance, in Bangladesh, about 50% of women in our sample had completed high school education at age 17 in our sample. However, this share is 20% for 17–year old

women in Afghanistan. Given the variation in education attainment and coresidence rates across countries, our final age window for analysis differs by gender. Figure 5 illustrates that in the ideal age window of analysis, two conditions are met. First, coresidence rates are relatively high and stable. Second, education attainment has stabilized and does not continue to increase. Note that since girls are likely to have left home during the age window when high school completion stabilizes across all countries except Sri Lanka, we top–coded education attainment at middle school completion for girls. For men in the sample and Sri Lankan women, education has been topcoded at high school attainment.

Figure 5

Sample Selection Accounting for Coresidence and Education Completion



Note: For each country with coresident only data, we restrict the analysis sample to ages where children are still residing with their parents and education attainment is relatively stable. Education has been top–coded at middle school for women in all countries and at high school attainment for men in all countries. This was necessary as women are already leaving their natal home during the high school attainment age window across all countries, except Sri Lanka, where high school education attainment rates are high and stable early on for women while they still reside with their parents. Corresponding figures for other countries have been included in the Appendix.

As an added test to confirm that bias from exclusion of non–coresident individuals is eliminated after restricting our sample based on the rules described above, Figure A.3 shows that education ranks of parent–child pairs as well as bounds on bottom half mobility are similar across the coresident and full–sample. We were able to conduct this test using underlying data from country–survey years where we had matched parent–child education records for coresident and non–coresident individuals.

Our final analysis sample comprises of 292,397 father–son pairs, 309,386 mother–son pairs, 216,075 mother–son pairs and 229,326 mother–daughter pairs across the South Asian region. A challenge of working with household survey datasets is the harmonization of key variables and values – education attainment, social groups, geographic identifiers and so on. In developing countries such as those within the scope of the present study, it is often difficult standardizing definitions of key variables across several rounds of the same survey. Using multiple surveys in each country and the need to standardize dataset structure, variable definitions and coding mechanisms across the seven countries in our sample compounded the data harmonization process. We standardized the key variables across all surveys listed in Table 2.

The primary variables of interest for our analysis are parent and child education. The resulting education variables after harmonization have six categories commonly used in education data. The categories are (i) less than two years of education; (ii) some primary; (iii) completed primary; (iv) some middle school; (v) completed middle school; (vi) completed high school; (vii) post–secondary. The education variable has been further top–coded at high school completion for men and Sri Lankan women, and at middle school completion for all other women. As explained above, this has been done because our sample is restricted to ages where individuals are mostly coresident with parents and education attainment is stable. Parent education attainment has not been top–coded since the age restrictions for coresident children do not apply to parents. Creation of parent–child links, standardization of education categories, standardization of survey weights and additional variables used in heterogeneity analyses of mobility have been described in greater detail in Appendix B.

Appendix Table A.1 summarizes education attainment means and rural population shares for each country in our analysis sample against the means for the population according to World Bank Development Indicators and Demographic Health Surveys for the corresponding year. The table displays this comparison for the most recent year for which external data were available across indicators for each country.

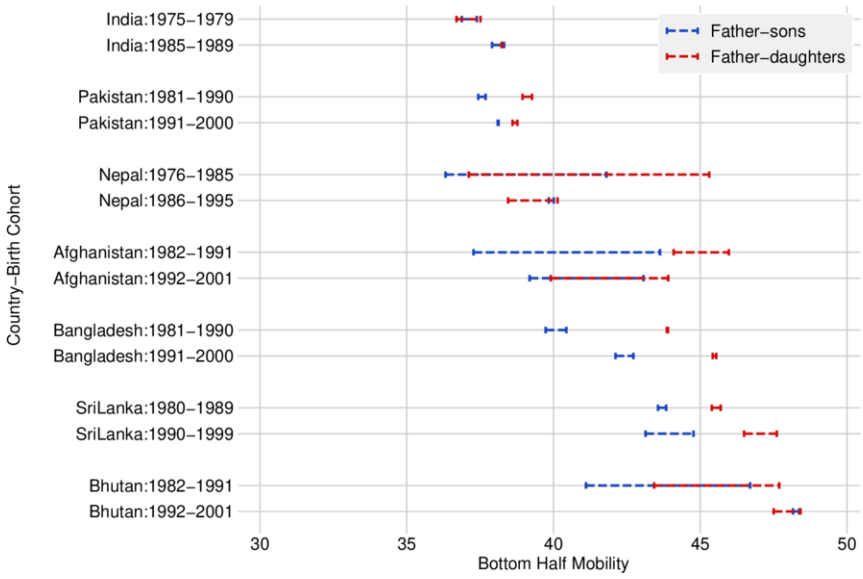
5 Results: Intergenerational Mobility in South Asia

5.1 Bottom Half Mobility across and within South Asia

Figure 6 shows changes in bottom half mobility in South Asia across two decades. Each row illustrates intergenerational upward mobility for father–son and father–daughter pairs within a specific birth cohort.

A clear hierarchy of countries from least to most upwardly mobile emerges in Figure 6. Prior research on relative upward mobility suggests that South Asia and Sub–Saharan Africa present the lowest average relative mobility across developing countries (Narayan and Van der Weide, 2018). Our results exhibit substantial heterogeneity in relative mobility within South Asia.

Figure 6
Bottom Half Mobility across countries in South Asia



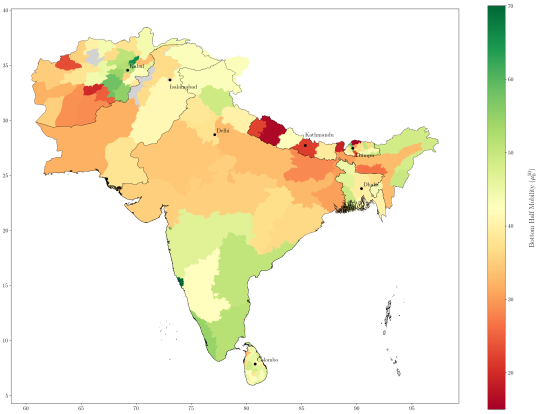
Note: The figure above shows bounds on μ_0^{50} for males and females in each country in our sample, where $\mu_0^{50} = E(y|x \in [0,50])$, and y and x are the child and father education attainment ranks respectively. For each country, selected birth cohorts have been displayed in the graph to illustrate the change in μ_0^{50} across South Asia over a broadly consistent time period. The corresponding figure showing intergenerational bottom half mobility for mother–child pairs has been included in the Appendix (see Figure A.4).

Figure 6 also displays variation in the gender gap in upward mobility across the South Asian region. In Bangladesh and Sri Lanka, girls are substantially more upwardly mobile than boys. Overall, Bhutan and Sri Lanka are the most upwardly mobile countries in the region. India and Pakistan are the least mobile societies in South Asia. However, some of these countries are expansive and mask substantial heterogeneity in socio–economic status, education attainment, social norms, poverty and inequality. Figure 7 maps bottom half mobility at the sub–national level across South Asia, for the youngest birth cohort in each country.

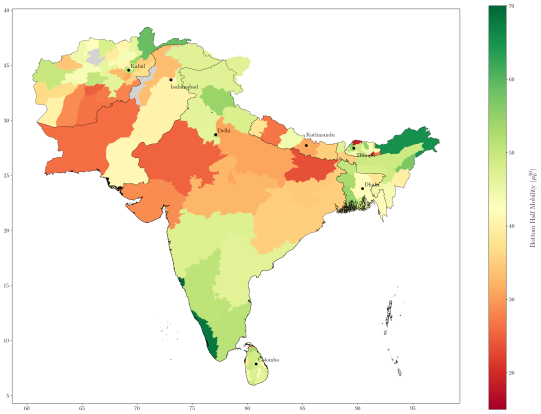
Figure 7

Mobility within countries in South Asia: $Y =$ Child education Rank

A. Father–Son Upward Mobility



B. Father–Daughter Upward Mobility



Note: Panel A shows μ_0^{50} *for sons at the subnational level for each country in our sample, where* $\mu_0^{50} = E(y|x \in [0,50])$*, and* y *is the child education attainment rank. Panel B shows the corresponding bottom half mobility measures for father–daughter pairs for each province in the region. Note that the parent and child education ranks are calculated at the country, birth–cohort, gender level.* μ_0^{50} *for the youngest cohort within each sub–national unit has been illustrated in the figure.*

From Figure 7, we identify southern Afghanistan, Mid–western Nepal, Central Nepal, Balochistan, and Bihar as the regions with the lowest intergenerational mobility for both men and women across South Asia. It is immediately clear that national mobility measures for each country masks underlying geographic heterogeneity in upward mobility. Consider India, where on one hand, states like Kerala, Goa and Arunachal Pradesh are the most upwardly mobile provinces for women across the entire South Asian region. On the other

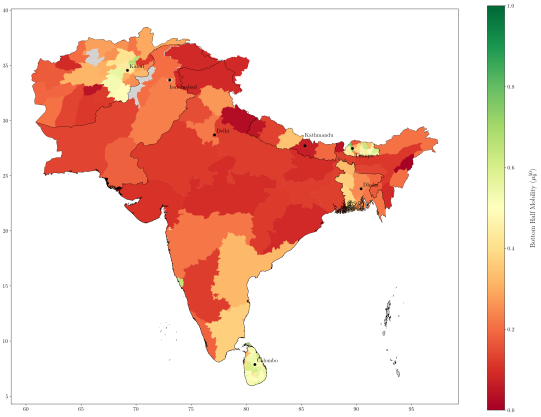
hand, women in Indian states such as Rajastan and Bihar experience bottom half mobility as low as peers in Balochistan and Taliban-dominated parts of Afghanistan. Sri Lanka is an exception where all regions in the country consistently exhibit high mobility.

The mobility measures displayed in Figure 7 have been calculated based on education ranks within country, birth cohort and gender bins. However, the 75th percentile of the education distribution for Afghan men may vary substantially in meaning than the 75th percentile for Sri Lankan men due to the variation in the underlying education distributions across these countries. To account for this, we present a corresponding mobility map in Figure 8 which displays the share born to children of parents in the bottom half who have achieved the highest education level in each sub–national region. As described earlier, the highest education level attained has been topcoded at high–school for men and middle–school for women based on the underlying education distribution in the analysis sample.

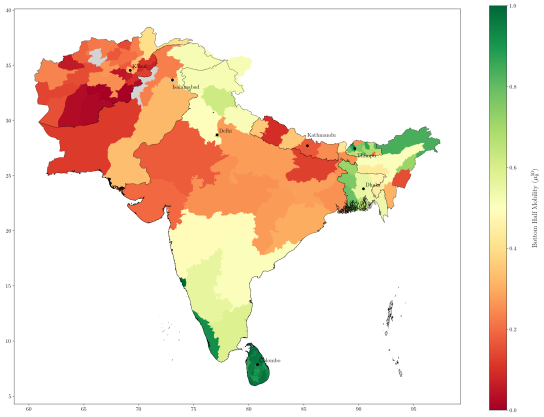
Figure 8

Mobility within countries in South Asia: $Y =$ Child education Level

A. Father–Son Upward Mobility (HS+)



B. Father–Daughter Upward Mobility (Middle+)



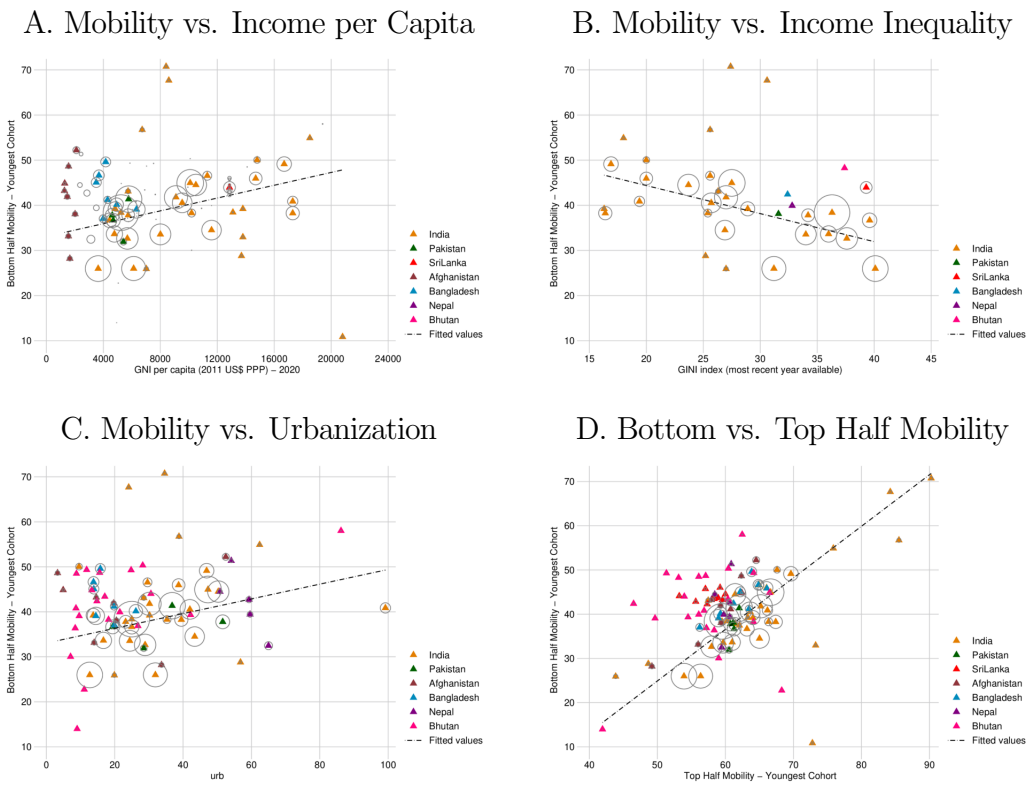
Note: Panel A shows μ_0^{50} for sons at the subnational level for each country in our sample, where $\mu_0^{50} = E(y|x \in [0,50])$, and y is the child education attainment level. Panel B shows the corresponding bottom half mobility measures for father–daughter pairs for each province in the region. Note that the highest education category in our sample is high school and above for men, and middle school and above for women. We are unable to top–code education at high school and above for women in our sample as coresidence declines sharply for women during the ages corresponding to high school completion.

Figure 8 presents a dramatic contrast between bottom half mobility of sons and daughters. South India, Sri Lanka, Arunachal Pradesh, West Bangladesh emerge as pockets of relatively high mobility for women. Daughters born to fathers in the bottom half seem more likely to break out of low education attainment than sons in these regions. On the other hand, Afghan women trail Afghan men substantially in terms of bottom half mobility. Overall, the combination of gender and place of birth yields vastly different bottom half mobility outcomes for children within the same birth cohort and socio–economic status.

5.2 Bottom Half Mobility in relation to Measures of Wealth, Inequality & Education

Figure 9 illustrates the relationship between bottom half mobility and broad economic indicators at the sub–national level. Wealthier and relatively urbanized regions are more likely to be upwardly mobile. As expected, sons born to fathers in the bottom half are less likely to break out of rank persistence in regions with high income inequality. The dashed black line in all panels of Figure 9 represents the line of best fit from a population–weighted linear regression of μ_0^{50} on the X–axis variable.

Figure 9
Bottom Half Mobility in relation to Economic Indicators

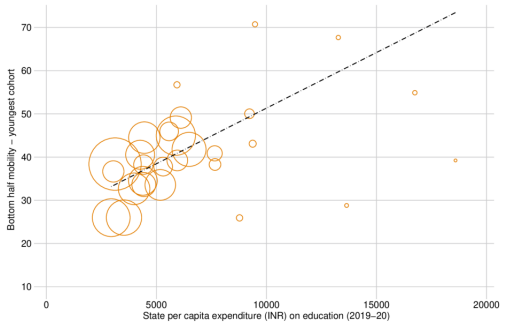


Note: Panel A plots μ_0^{50} against a measure of income per capita at the subnational level for each country in our sample. Panel B plots μ_0^{50} against the subnational GINI index for each country. Panel C plots μ_0^{50} against the urban population share at the subnational level for each country. Panel D plots μ_0^{50} against μ_{50}^{100} at the subnational level. Note that in Panels A–C, the national economic indicator was used in the absence of data at the sub–national level.

Figure 10 plots bottom half mobility estimates for states in India against measures of government expenditure on education and learning levels. Panel A. shows a positive relationship between education expenditure per capita by state governments in India and μ_0^{50}. Panel B. suggests a positive association between learning levels in each state and μ_0^{50}. As in Figure 9, the black dashed line represents the line of best fit from a population–weighted linear regression on the underlying data.

Figure 10
Bottom
Half Mobility of Indian States against Education Expenditure and Quality

A. Mobility vs. Education Expenditure



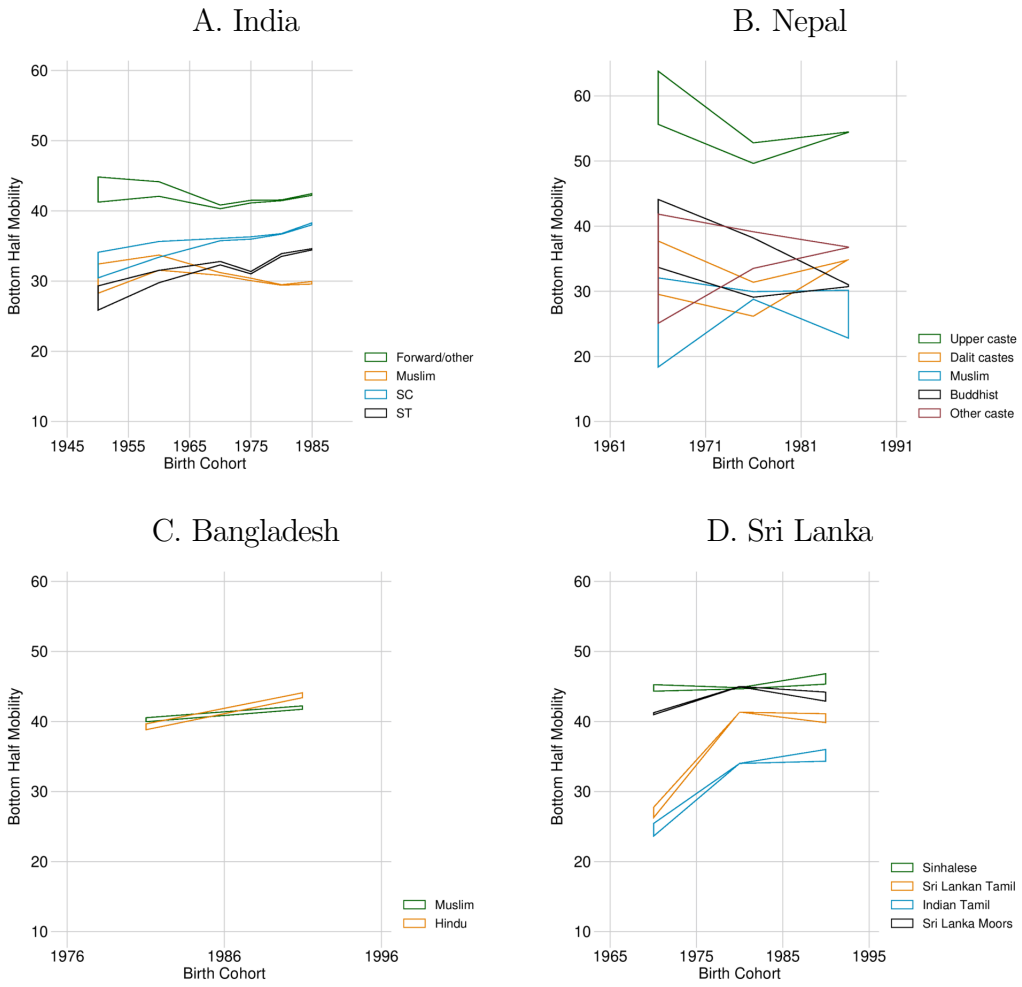
B. Mobility vs. Learning Levels

Note: Panel A plots μ_0^{50} against the per capita expenditure on education by the government in each Indian state. The per capita expenditure on education at the state level was accessed through the open budgets portal for India platform. Panel B plots μ_0^{50} against a measure of foundational literacy from the ASER 2018 survey for each state in India.

5.3 Bottom Half Mobility across Social Groups in South Asia

Asher et al. (2021) report substantial convergence in bottom half mobility of fathers and sons between upper–caste Hindus and historically oppressed Scheduled Castes and Scheduled Tribes in India. The analysis also reveals a sharp decline in Muslim upward mobility, widening the bottom half mobility gap between the Hindu upper–caste and Muslim community between 1960–69 and 1985–89. For the youngest birth cohort, the average Hindu upper caste son born to fathers in the bottom half has a rank of 44 whereas the average Muslim son has a rank of 29. The upper and lower bounds on the mobility gap between Hindu upper–caste and Muslim sons born to the bottom half are 13.9 and 9.8 respectively for the 1985–89 birth cohort. This section extends the analysis in Asher et al. (2021) and reports corresponding mobility gaps between social groups with the most and least upward mobility advantage in India's neighboring countries.

Figure 11
Bottom Half Mobility of Father–Son pairs, by Social Groups

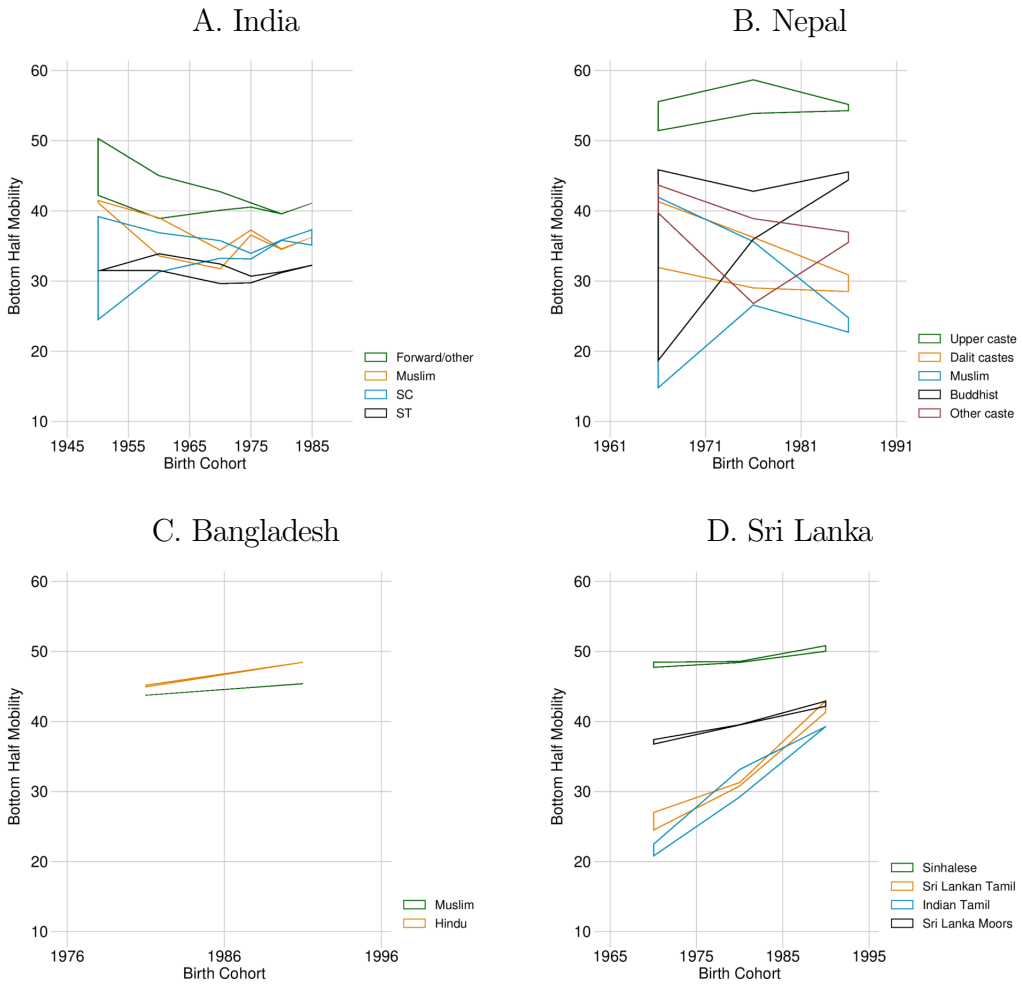


Note: The figure shows trends in father–son bottom half mobility over time, disaggregated at the social group level, for a subset of countries in our sample. The distribution of social groups in the analysis sample is as follows: India – Hindu Upper caste (59%), Muslim (12%), SC (20%) and ST (8.24%). Bangladesh – Muslim (87.29%), Hindu (10.26 %). Nepal – Hindu (84.7%), Buddhist (7.77 %), Muslim (3.51 %), Kirants, Jains & others (4.1%). Sri Lanka – Sinhalese (74.02%), SL Tamil (9.96%), Indian Tamil (5.49%), SL Moors (9.94%)

The gap between the most and least advantaged social groups in terms of upward mobility varies substantially across South Asia. In India, the mobility gap between Hindu upper caste

groups and Muslims is 14 percentage points whereas in Bangladesh, the mobility gap between Hindus and Muslims is 2 percentage points for the youngest birth cohorts. On the other hand, in Nepal, the mobility gap between Hindu upper caste and the Muslim community is 25 percentage points for the youngest cohort. In Sri Lanka, while the gap betweeb the most advantaged group, the Sinhalese, and the relatively disadvantaged Indian Tamils remains high at 10 for the youngest birth cohort, we also observe the greatest narrowing of mobility gaps between advantaged and disadvantaged social groups over time. Finally, the absence of a mobility gap between social groups in Bangladesh is notable considering the striking social group–level upward mobility disparities we observe in other South Asian countries. Figure 12 presents corresponding bottom half mobility trends for father–daughter pairs, disaggregated by social groups across South Asia. In terms of bottom half mobility of girls, Bangladesh remains the country with the lowest mobility gaps and Sri Lanka exhibits the highest degree of convergence in mobility gaps between disadvantaged and advantaged social groups over time.

Figure 12
Bottom Half Mobility of Father–Daughter pairs, by Social Groups



Note: The figure shows trends in father–daughter bottom half mobility over time disaggregated at the social group level for a subset of countries in our sample. The distribution of social groups in the analysis sample is as follows: India – Hindu Upper caste (59%), Muslim (12%), SC (20%) and ST (8.24%). Bangladesh – Muslim (87.29%), Hindu (10.26 %). Nepal – Hindu (84.7%), Buddhist (7.77 %), Muslim (3.51 %), Kirants, Jains & others (4.1%). Sri Lanka – Sinhalese (74.02%), SL Tamil (9.96 %), Indian Tamil (5.49 %), SL Moors (9.94 %)

As a measure of baseline differences across social groups, Figures A.22 – A.26 in the Appendix illustrate the educational distribution of social groups for the oldest birth cohort in

each country. We were unable to conduct an analogous social group level analysis for Pakistan and Bhutan due to data limitations that precluded disaggregation at the social group level.

6 Conclusion

In this paper, we apply the bottom half mobility measure developed in Asher et al. (2021) in a comparative analysis of intergenerational mobility over time across South Asia. As expected, we find a clear hierarchy among countries with respect to relative mobility. Bhutan and Sri Lanka are the most upwardly mobile countries in South Asia whereas India and Pakistan have the lowest mobility in the region. Our findings confirm the insight from Narayan and Van der Weide (2018) that the hierarchy of South Asian countries varies substantially based on whether we measure absolute or relative mobility. Due to the granularity of our data, we are also able to determine differences in mobility estimates over time at the sub–national level. We find substantial geographical heterogeneity in mobility estimates at the sub–national level. On one hand, different states in India are similar to the most as well as least upwardly mobile regions of South Asia. On the other hand, Sri Lanka and Bangladesh exhbit relatively limited sub–national geographical heterogeneity in terms of upward mobility.

Following Chetty et al. (2020), Derenoncourt (2019),and Asher et al. (2021), we also estimate gaps in mobility across social groups. Across most countries and provinces, women born to fathers in the bottom half of the education distribution exhibit higher intergenerational mobility than men. We find that caste, ethnic group and religious identity are important and persistent determinants of the level of upward mobility over time in India, Nepal and Sri Lanka. However, unlike other countries, the gaps in mobility have converged over time between the most advantaged (Sinhalese) and disadvantaged (Indian Tamil) ethnic groups in Sri Lanka over time.

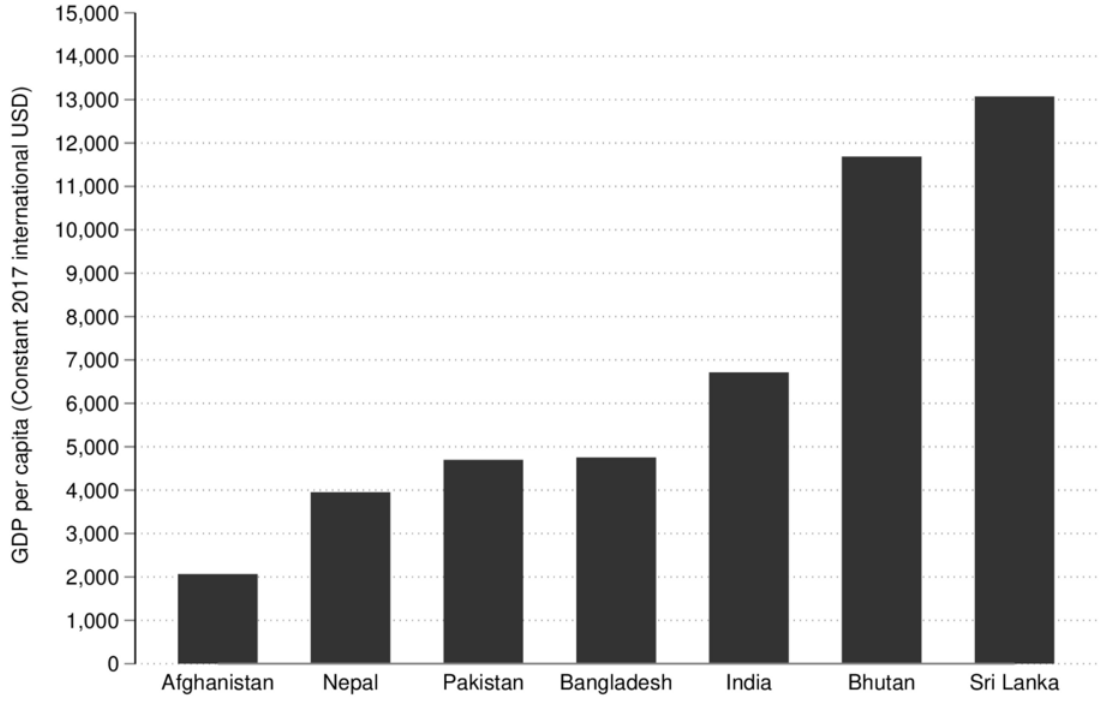
Consistent with Card et al. (2022), we find a positive relationship between school quality and intergenerational mobility based on education attainment. We also find that mobility increases with local income per capita and urbanization rates. Our results provide additional evidence of "The Gatsby Curve" (Corak, 2013) as we find that provinces with higher income inequality have low intergenerational mobility.

The present study mobilizes an array of large household–level datasets across countries and years to establish previously unknown facts about variation in intergenerational mobility across space and time in South Asia. We provide suggestive evidence of potential determinants of intergenerational mobility. Future research should leverage additional data to establish the causal impact of investment in public education and positive shocks to urbanization

on intergenerational mobility. Additional channels of impact could be driven by social norms. Social–group specific gender norms are a potential determinant of variation in upward mobility of women across South Asia. Similarly, caste–specific norms, land and property ownership rules and preferences for redistribution are potential determinants of mobility gaps across social groups identified in this study.

Appendix A: Additional Tables & Figures

Figure A.1
Variation in Income Levels across South Asia

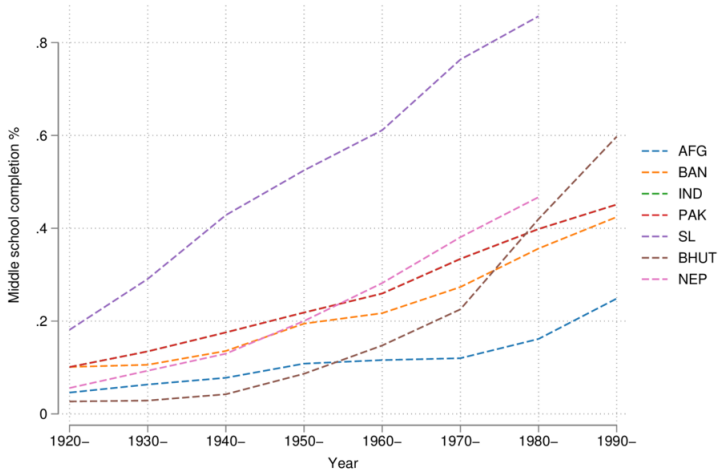


Note: The figure above shows GDP per capita (PPP Constant 2017 International USD) for all countries in our sample as of 2019. Source: World Development Indicators.

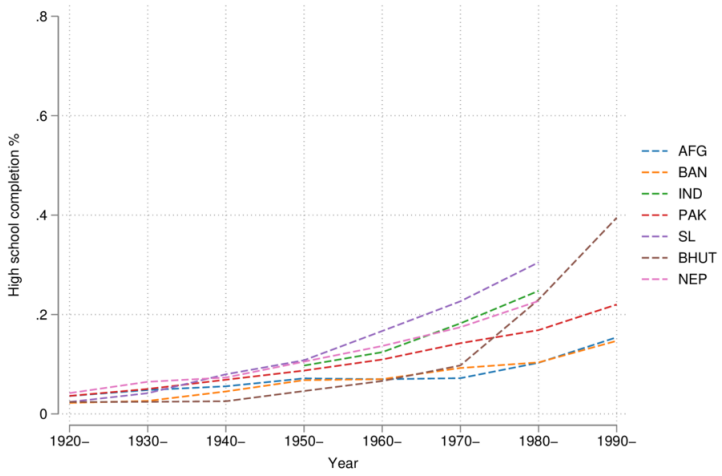
Figure A.2

Education Attainment over Time across South Asia

Panel A: Middle–school Completion



Panel B: High–school Completion

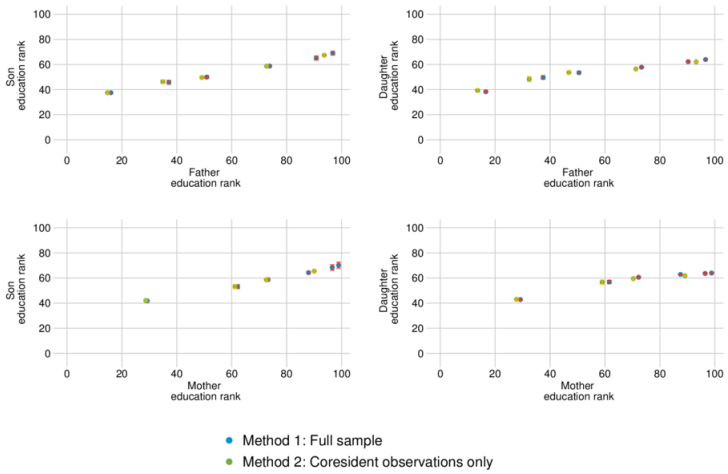


Note: Panels A & B in the figure above show the middle and high school completion rates over time for the countries in our sample respectively. The X–axis represens birth–cohorts and the Y–axis plots education attainment rates.

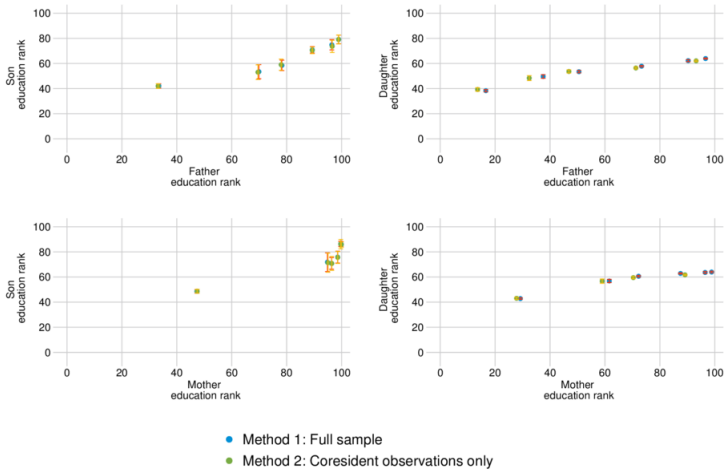
Figure A.3

Father–Son Rank–Rank
Moments across Coresident and Full Samples, India and Pakistan

Panel A: India



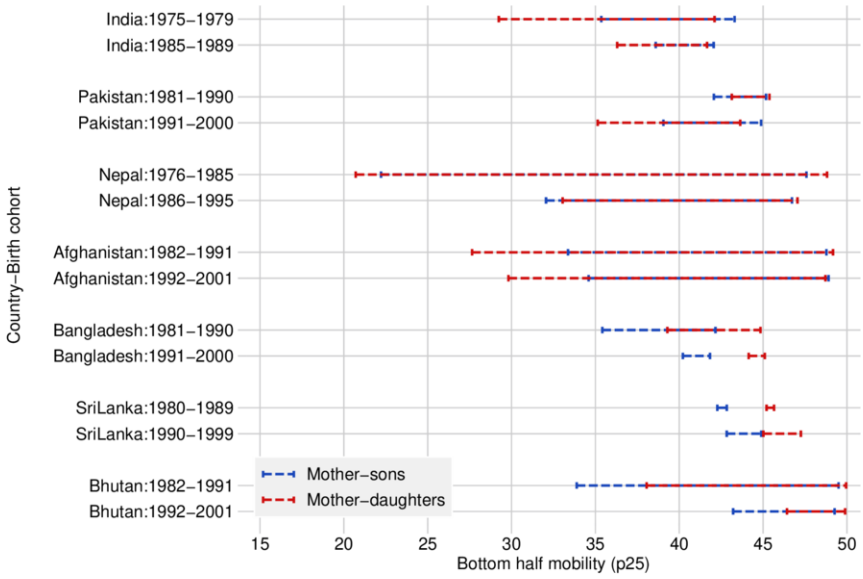
Panel B: Pakistan



Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for two groups – full sample (Method 1) and coresident individuals only (Method 2), for India (Panel A) and Pakistan (Panel B). Based on this ranks, bounds on μ_0^{50} *are [40.5, 41.1] and [41.1, 41.7] for Methods 1 and 2 in India, and [38.3, 42.1] and [38.4, 42.0] for Methods 1 and 2 in Pakistan.*

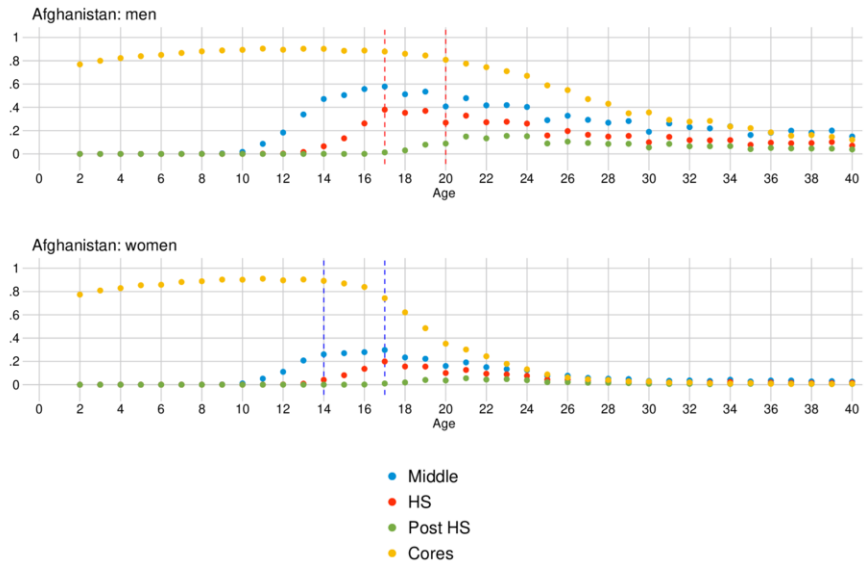
Figure A.4

Bottom Half Mobility of mother–child pairs across countries in South Asia



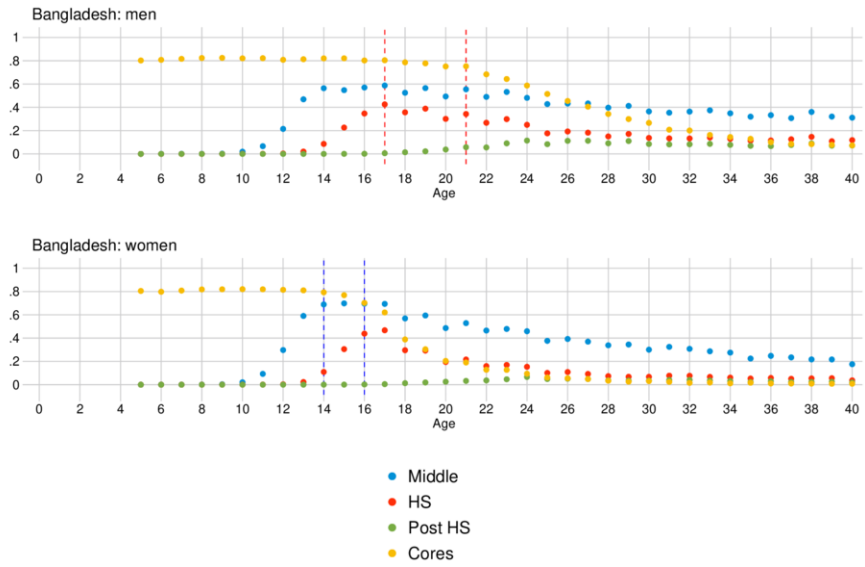
Note: The figure above shows bounds on μ_0^{50} *for males and females in each country in our sample, where* $\mu_0^{50} = E(y|x \in [0,50])$*, and* y *and* x *are the child and mother education attainment ranks respectively. For each country, selected birth cohorts have been displayed in the graph to illustrate the change in* μ_0^{50} *across South Asia over a broadly consistent time period. The education distribution is particularly coarse for mothers. Most mothers of children in the relevant birth cohorts are concentrated in the bottom–coded education bin. This results in wider bounds on bottom half mother–child mobility estimates.*

Figure A.5
Coresidence and Education Distribution, Afghanistan



Note: We restrict the analysis sample to ages where children are still residing with their parents and education attainment is relatively stable. Education has been top–coded at middle school for women in all countries and at high school attainment for men in Afghanistan. The selected age sample for each gender has been indicated using dashed lines in the plots above.

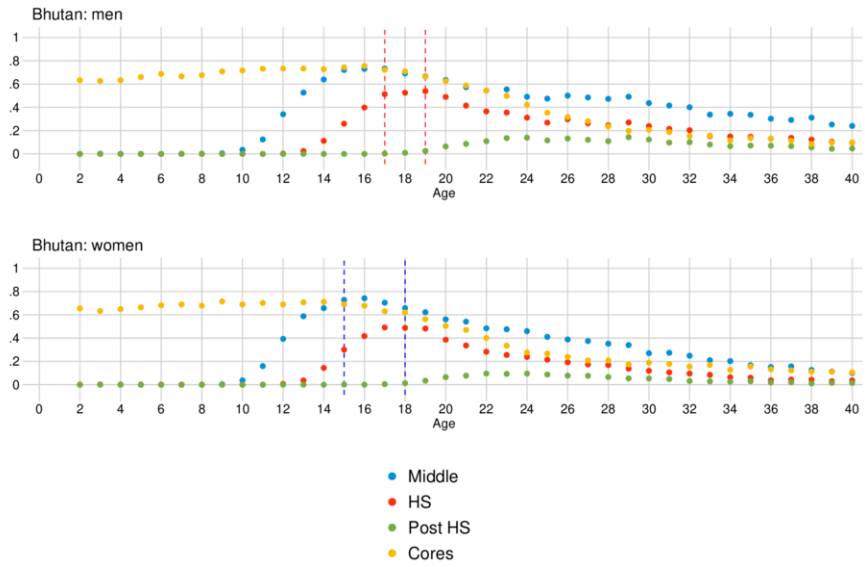
Figure A.6
Coresidence and Education Distribution, Bangladesh



Note: We restrict the analysis sample to ages where children are still residing with their parents and education attainment is relatively stable. Education has been top–coded at middle school for women in all countries and at high school attainment for men in Bangladesh. The selected age sample for each gender has been indicated using dashed lines in the plots above.

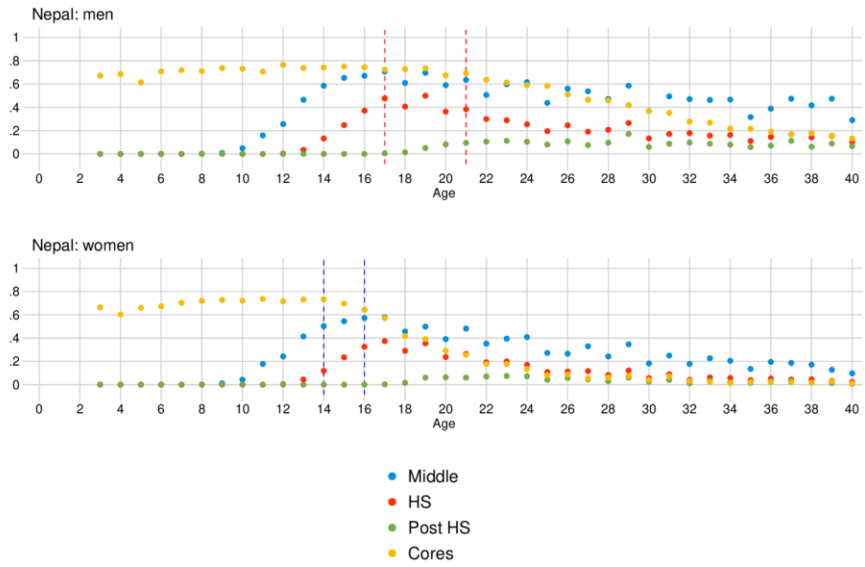
Figure A.7

Coresidence and Education Distribution, Bhutan



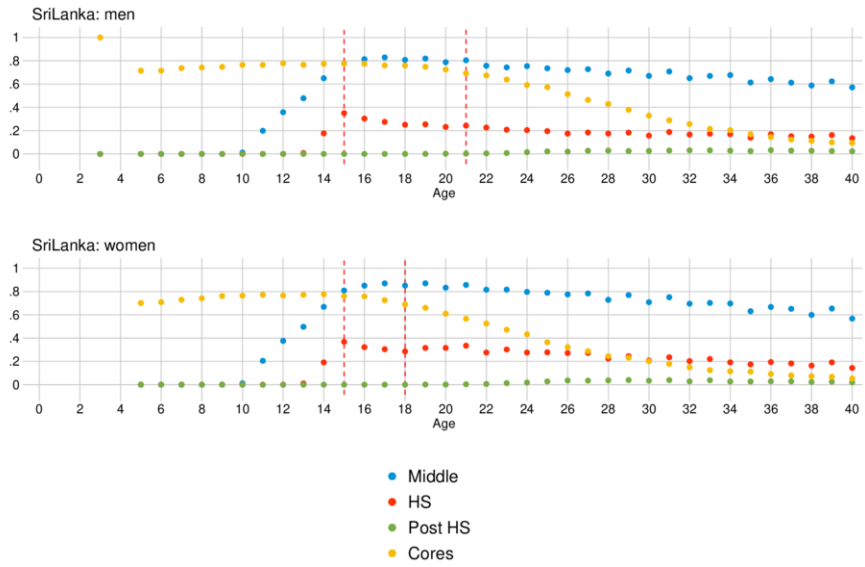
Note: We restrict the analysis sample to ages where children are still residing with their parents and education attainment is relatively stable. Education has been top–coded at middle school for women in all countries and at high school attainment for men in Bhutan. The selected age sample for each gender has been indicated using dashed lines in the plots above.

Figure A.8
Coresidence and Education Distribution, Nepal



Note: We restrict the analysis sample to ages where children are still residing with their parents and education attainment is relatively stable. Education has been top–coded at middle school for women in all countries and at high school attainment for men in Nepal. The selected age sample for each gender has been indicated using dashed lines in the plots above.

Figure A.9
Coresidence and Education Distribution, Sri Lanka



Note: We restrict the analysis sample to ages where children are still residing with their parents and education attainment is relatively stable. Education has been top–coded at middle school for women in all countries and at high school attainment for men in SriLanka. The selected age sample for each gender has been indicated using dashed lines in the plots above.

Table A.1
Descriptive Statistics: Analysis Sample vs. Population

		Adult Total Literacy (%)		Middle school completion (%)		High school completion (%)		Rural population (%)	
Country	Year	Sample	Population	Sample	Population	Sample	Population	Sample	Population
Afghanistan	2019	30	31	22	20	11	12	77	74
Bangladesh	2016	62	73	35	41	14	29	69	65
Bhutan	2017	62	66	38	28	23	17	61	59
India	2012	71	69	47	38	19	27	62	68
Nepal	2011	59	60	40	27	22	17	85	83
Pakistan	2019	53	58	40	26	19	28	69	63
Sri Lanka	2009	99	92	62	74	17	56	73	82

Note: The population estimates for each country have been acquired from World Bank Development Indicators or DHS data for corresponding survey years. From the WDI data, "lower secondary completion" and "upper secondary completion" have been interpreted as middle and high school completion respectively. For Sri Lanka, data were not available on upper secondary/high school completion for the year displayed in the table.

Table A.2

Transition Matrices for Father and Son Education in Afghanistan

	A. Sons Born 1982–91					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(44%)	(11%)	(12%)	(20%)	(13%)	
<2 yrs. (70%)	0.56	0.11	0.11	0.15	0.08	3993.00
Some primary (9%)	0.22	0.21	0.17	0.29	0.11	518.00
Completed primary (6%)	0.18	0.13	0.19	0.29	0.22	313.00
Some middle (10%)	0.12	0.07	0.14	0.39	0.28	565.00
Some secondary (2%)	0.03	0.06	0.11	0.47	0.33	112.00
Some Sec+ (3%)	0.07	0.01	0.08	0.36	0.48	142.00
	B. Sons Born 1992–2001					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(29%)	(5%)	(8%)	(14%)	(44%)	
<2 yrs. (65%)	0.40	0.06	0.08	0.14	0.31	14047.00
Some primary (6%)	0.12	0.11	0.12	0.17	0.48	1283.00
Completed primary (8%)	0.09	0.05	0.08	0.18	0.59	1416.00
Some middle (8%)	0.08	0.03	0.06	0.17	0.65	1572.00
Some secondary (7%)	0.05	0.02	0.04	0.08	0.82	1101.00
Some Sec+ (7%)	0.03	0.00	0.03	0.11	0.83	1046.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in Afghanistan.Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

Table A.3
Transition Matrices for Father and Son Education in Bangladesh

	A. Sons Born 1981–90					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(23%)	(4%)	(24%)	(21%)	(28%)	
<2 yrs. (54%)	0.36	0.06	0.27	0.17	0.14	1621.00
Some primary (5%)	0.13	0.09	0.34	0.28	0.17	156.00
Completed primary (14%)	0.11	0.04	0.31	0.29	0.26	465.00
Some middle (17%)	0.07	0.01	0.16	0.30	0.46	588.00
Some secondary (5%)	0.02	0.00	0.04	0.18	0.77	167.00
Some Sec+ (5%)	0.01	0.01	0.02	0.15	0.80	161.00
	B. Sons Born 1991–2000					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(10%)	(9%)	(22%)	(16%)	(43%)	
<2 yrs. (53%)	0.16	0.13	0.27	0.15	0.29	3708.00
Some primary (11%)	0.04	0.12	0.24	0.17	0.43	842.00
Completed primary (13%)	0.05	0.05	0.23	0.20	0.47	1009.00
Some middle (16%)	0.02	0.03	0.09	0.20	0.66	1178.00
Some secondary (4%)	0.01	0.01	0.04	0.14	0.80	270.00
Some Sec+ (3%)	0.00	0.00	0.01	0.04	0.95	227.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in Bangladesh.Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

Table A.4
Transition Matrices for Father and Son Education in Bhutan

	A. Sons Born 1972–81					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(51%)	(13%)	(10%)	(15%)	(11%)	
<2 yrs. (90%)	0.55	0.13	0.10	0.14	0.08	1025.00
Some primary (4%)	0.31	0.25	0.10	0.17	0.18	36.00
Completed primary (3%)	0.14	0.06	0.21	0.41	0.17	48.00
Some middle (3%)	0.00	0.04	0.08	0.22	0.65	64.00
Some secondary (0%)	0.00	0.00	0.03	0.48	0.49	12.00
college	0.00	0.00	0.00	0.00	1.00	7.00
	B. Sons Born 1982–1991					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(26%)	(9%)	(10%)	(17%)	(38%)	
<2 yrs. (79%)	0.31	0.10	0.11	0.17	0.31	1276.00
Some primary (9%)	0.14	0.10	0.11	0.23	0.42	149.00
Completed primary (5%)	0.08	0.07	0.06	0.21	0.57	87.00
Some middle (6%)	0.02	0.00	0.02	0.10	0.86	133.00
Some secondary (1%)	0.00	0.00	0.00	0.06	0.94	28.00
Some Sec+ (1%)	0.00	0.00	0.14	0.02	0.84	14.00
	C. Sons Born 1992–2001					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(7%)	(6%)	(8%)	(17%)	(62%)	
<2 yrs. (64%)	0.09	0.06	0.09	0.19	0.58	994.00
Some primary (14%)	0.07	0.08	0.07	0.18	0.59	223.00
Completed primary (8%)	0.04	0.03	0.09	0.19	0.65	155.00
Some middle (9%)	0.02	0.06	0.02	0.09	0.81	160.00
Some secondary (2%)	0.00	0.00	0.05	0.14	0.80	56.00
Some Sec+ (3%)	0.01	0.00	0.00	0.01	0.98	57.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in Bhutan.Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

Table A.5
Transition Matrices for Father and Son Education in India

	A. Sons Born 1960–69					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(27%)	(10%)	(16%)	(30%)	(17%)	
<2 yrs. (58%)	0.40	0.12	0.16	0.24	0.07	5947.00
Some primary (13%)	0.11	0.16	0.18	0.38	0.16	1334.00
Completed primary (13%)	0.10	0.05	0.25	0.38	0.23	1383.00
Some middle (11%)	0.04	0.03	0.08	0.48	0.37	1245.00
Some secondary (2%)	0.02	0.01	0.03	0.27	0.67	218.00
Some Sec+ (2%)	0.01	0.00	0.02	0.11	0.86	257.00
	B. Sons Born 1985–1989					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(9%)	(6%)	(16%)	(35%)	(34%)	
<2 yrs. (36%)	0.19	0.08	0.25	0.33	0.14	2490.00
Some primary (11%)	0.06	0.13	0.16	0.43	0.22	801.00
Completed primary (17%)	0.04	0.04	0.18	0.42	0.31	1307.00
Some middle (26%)	0.01	0.02	0.07	0.38	0.52	1961.00
Some secondary (5%)	0.01	0.00	0.05	0.19	0.75	318.00
Some Sec+ (5%)	0.01	0.00	0.02	0.14	0.84	403.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in India.Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

Table A.6

Transition Matrices for Father and Son Education in Nepal

	A. Sons Born 1966–75					
	Son highest education attained					
Father ed attained	< 2 yrs. (28%)	Some primary (16%)	Completed primary (18%)	Completed middle (27%)	Completed HS (11%)	N
<2 yrs. (85%)	0.31	0.17	0.19	0.24	0.09	1132.00
Some primary (4%)	0.25	0.20	0.22	0.24	0.08	61.00
Completed primary (4%)	0.07	0.02	0.17	0.61	0.13	58.00
Some middle (6%)	0.08	0.09	0.10	0.37	0.36	115.00
Some secondary (0%)	0.18	0.00	0.00	0.35	0.48	14.00
Some Sec+ (1%)	0.00	0.00	0.16	0.25	0.58	35.00
	B. Sons Born 1976–1985					
	Son highest education attained					
Father ed attained	< 2 yrs. (17%)	Some primary (16%)	Completed primary (20%)	Completed middle (29%)	Completed HS (17%)	N
<2 yrs. (69%)	0.24	0.18	0.23	0.26	0.09	1371.00
Some primary (9%)	0.07	0.16	0.20	0.37	0.21	196.00
Completed primary (8%)	0.02	0.14	0.18	0.42	0.24	208.00
Some middle (10%)	0.02	0.04	0.12	0.39	0.43	289.00
Some secondary (2%)	0.02	0.00	0.03	0.27	0.68	56.00
Some Sec+ (2%)	0.00	0.01	0.00	0.24	0.75	84.00
	C. Sons Born 1986–1995					
	Son highest education attained					
Father ed attained	< 2 yrs. (8%)	Some primary (10%)	Completed primary (15%)	Completed middle (21%)	Completed HS (45%)	N
<2 yrs. (49%)	0.14	0.15	0.21	0.20	0.30	814.00
Some primary (14%)	0.07	0.13	0.15	0.22	0.42	237.00
Completed primary (14%)	0.03	0.04	0.12	0.25	0.55	252.00
Some middle (19%)	0.00	0.02	0.05	0.20	0.73	380.00
Some secondary (3%)	0.00	0.00	0.03	0.18	0.80	70.00
Some Sec+ (2%)	0.03	0.00	0.00	0.15	0.82	71.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in Nepal.Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

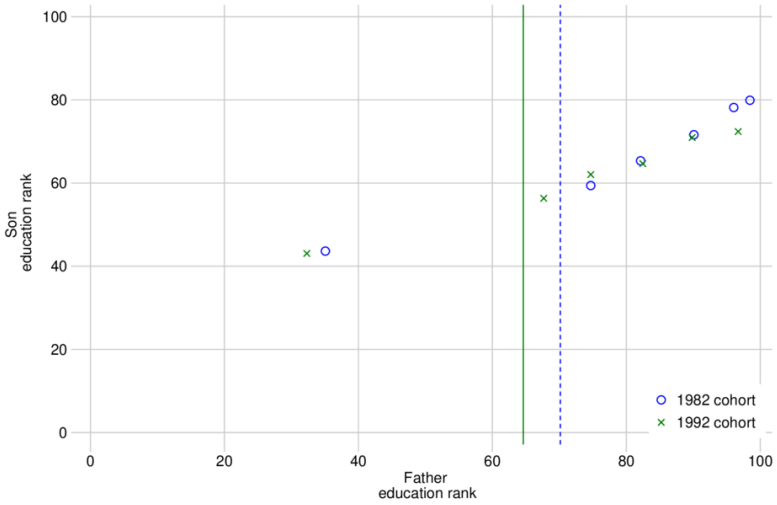
Table A.7
Transition Matrices for Father and Son Education in Sri Lanka

	A. Sons Born 1970–79					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(3%)	(10%)	(20%)	(64%)	(4%)	
<2 yrs. (9%)	0.11	0.22	0.28	0.38	0.01	803.00
Some primary (35%)	0.03	0.16	0.26	0.53	0.01	3232.00
Completed primary (27%)	0.01	0.06	0.22	0.68	0.03	2329.00
Some middle (26%)	0.01	0.02	0.09	0.82	0.06	2396.00
Some secondary (2%)	0.00	0.01	0.06	0.79	0.15	188.00
Some Sec+ (1%)	0.00	0.00	0.03	0.73	0.24	144.00
	B. Sons Born 1980–1989					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(1%)	(2%)	(7%)	(61%)	(29%)	
<2 yrs. (5%)	0.03	0.07	0.19	0.56	0.14	419.00
Some primary (19%)	0.01	0.05	0.16	0.63	0.15	1633.00
Completed primary (24%)	0.01	0.02	0.07	0.71	0.19	1815.00
Some middle (42%)	0.01	0.01	0.03	0.60	0.35	3079.00
Some secondary (9%)	0.00	0.01	0.01	0.35	0.63	621.00
Some Sec+ (1%)	0.00	0.00	0.00	0.38	0.62	107.00
	C. Sons Born 1990–1999					
	Son highest education attained					
	< 2 yrs.	Some primary	Completed primary	Completed middle	Completed HS	N
Father ed attained	(1%)	(1%)	(3%)	(29%)	(67%)	
<2 yrs. (4%)	0.03	0.06	0.12	0.38	0.41	307.00
Some primary (17%)	0.01	0.02	0.08	0.45	0.44	1245.00
Completed primary (20%)	0.01	0.01	0.03	0.39	0.57	1421.00
Some middle (45%)	0.00	0.00	0.01	0.24	0.74	2972.00
Some secondary (12%)	0.00	0.00	0.00	0.08	0.91	797.00
Some Sec+ (2%)	0.03	0.00	0.00	0.11	0.86	142.00

Note: The table above shows transition matrices by the decadal birth cohorts for father–son pairs in Sri Lanka.Each row in the figure above shows the education category–wise share of sons born to fathers in a particular education attainment bin. Source data for each country have been listed in Table 2.

Figure A.10

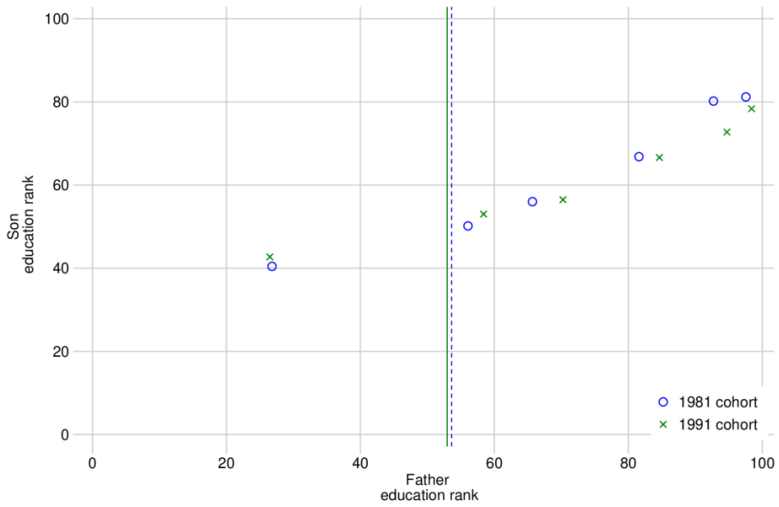
Father–Son Rank–Rank Moments in Afghanistan, 1982–91 and 1992–2001



Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for three ten–year birth cohorts in Afghanistan. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1992–2001 birth cohort, and the dashed line corresponds to the 1982–1991 birth cohort.

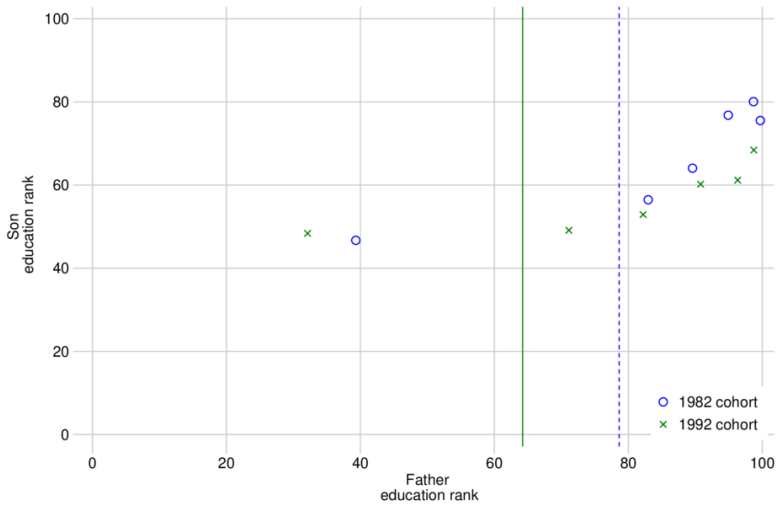
Figure A.11

Father–Son Rank–Rank Moments in Bangladesh, 1981–90 and 1991–2000



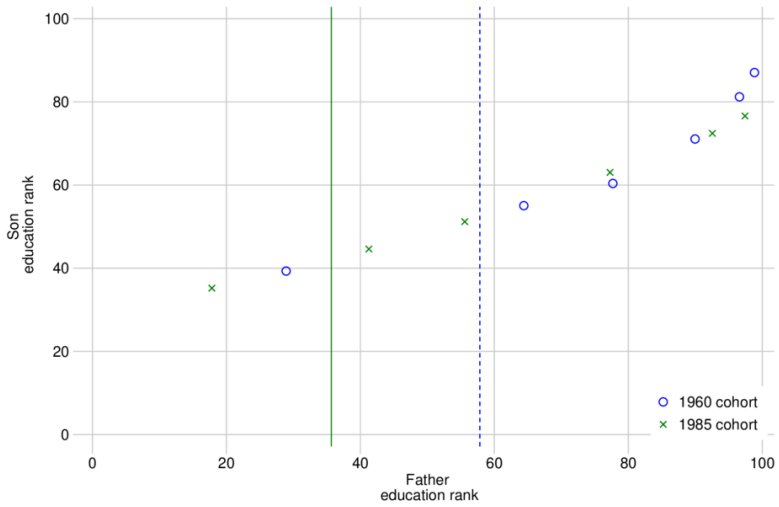
Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for three ten–year birth cohorts in Bangladesh. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1991–2000 birth cohort, and the dashed line corresponds to the 1981–1990 birth cohort.

Figure A.12
Father–Son Rank–Rank Moments in Bhutan, 1982–91 and 1992–2001



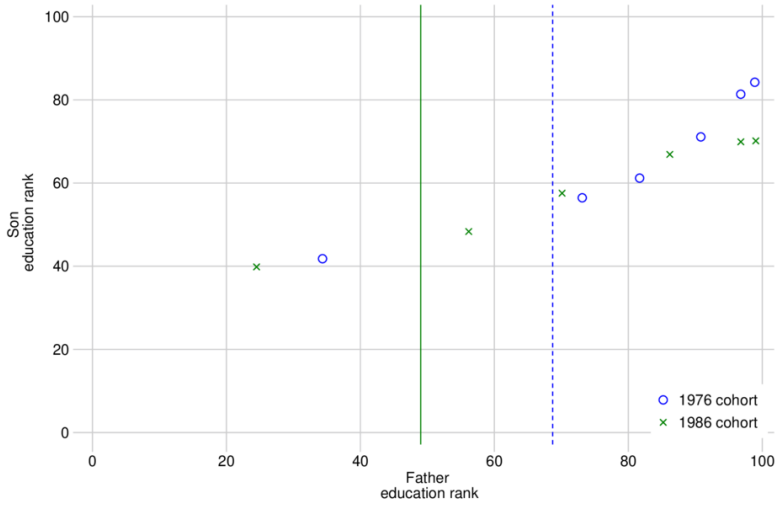
Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for three ten–year birth cohorts in Bhutan. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1992–2001 birth cohort, and the dashed line corresponds to the 1982–1991 birth cohort.

Figure A.13
Father–Son Rank–Rank Moments in India, 1960–69 and 1980–85



Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for three ten–year birth cohorts in India. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1980–1985 birth cohort, and the dashed line corresponds to the 1960–1969 birth cohort.

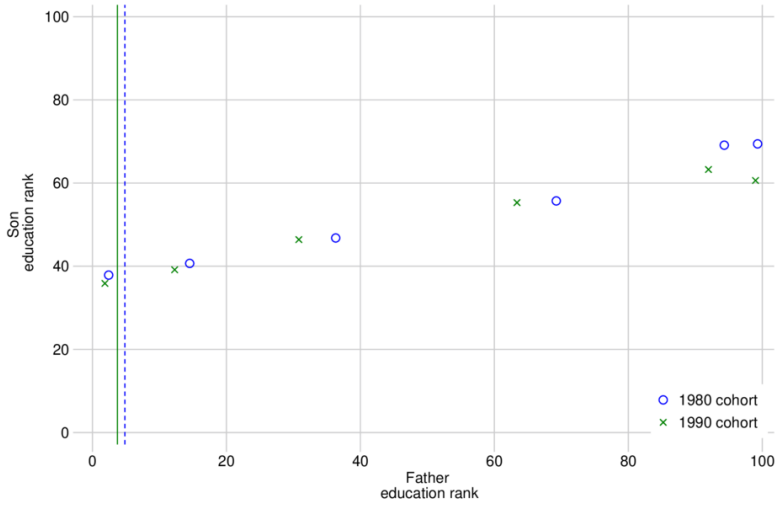
Figure A.14
Father–Son Rank–Rank Moments in Nepal, 1976–85 and 1986–95



Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for three ten–year birth cohorts in Nepal. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1986–1995 birth cohort, and the dashed line corresponds to the 1976–1985 birth cohort.

Figure A.15

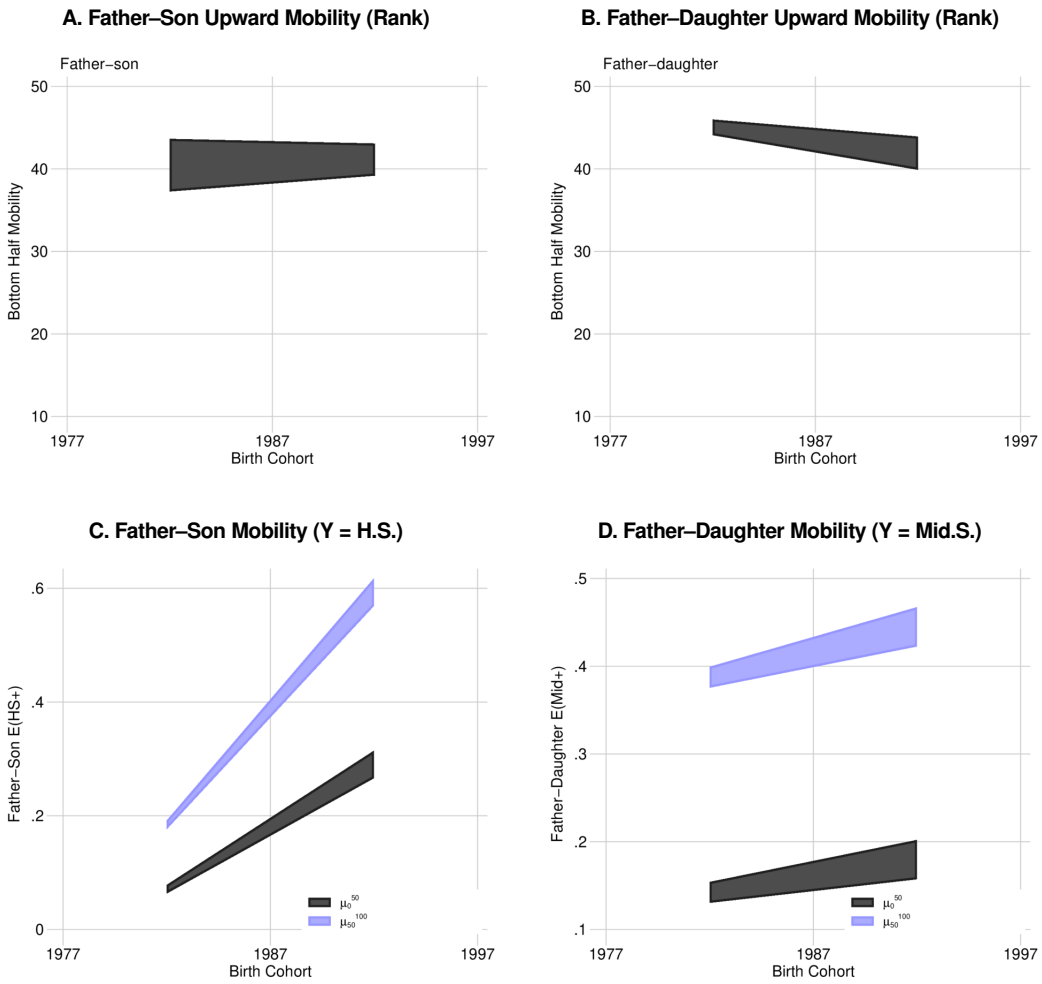
Father–Son Rank–Rank Moments in Sri Lanka, 1980–89 and 1990–1999



Note: The figure above shows the average education rank for sons born to fathers in each education rank bin for three ten–year birth cohorts in Sri Lanka. The vertical lines show the boundaries for the bottom parent bin, which corresponds to education attainment of 0–2 years. The solid line corresponds to the 1990–1999 birth cohort, and the dashed line corresponds to the 1980–1989 birth cohort.

Figure A.16

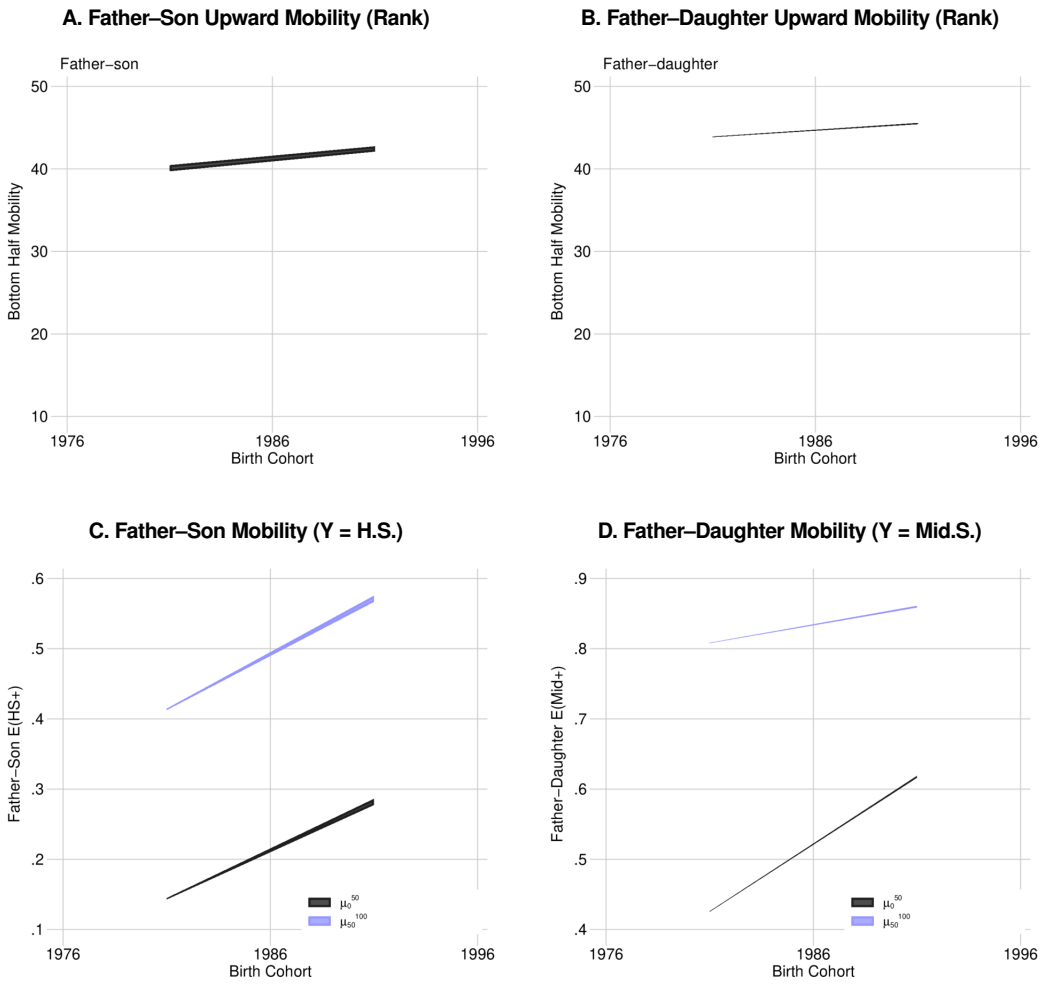
Bottom Half Mobility, Fathers to Sons and Daughters in Afghanistan



Note: Panels A and B show bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent rank and y is child rank. This is the average rank attained by children born to parents who are in the bottom half of the education distribution, respectively for sons and daughters. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). The first (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. The second (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

Figure A.17

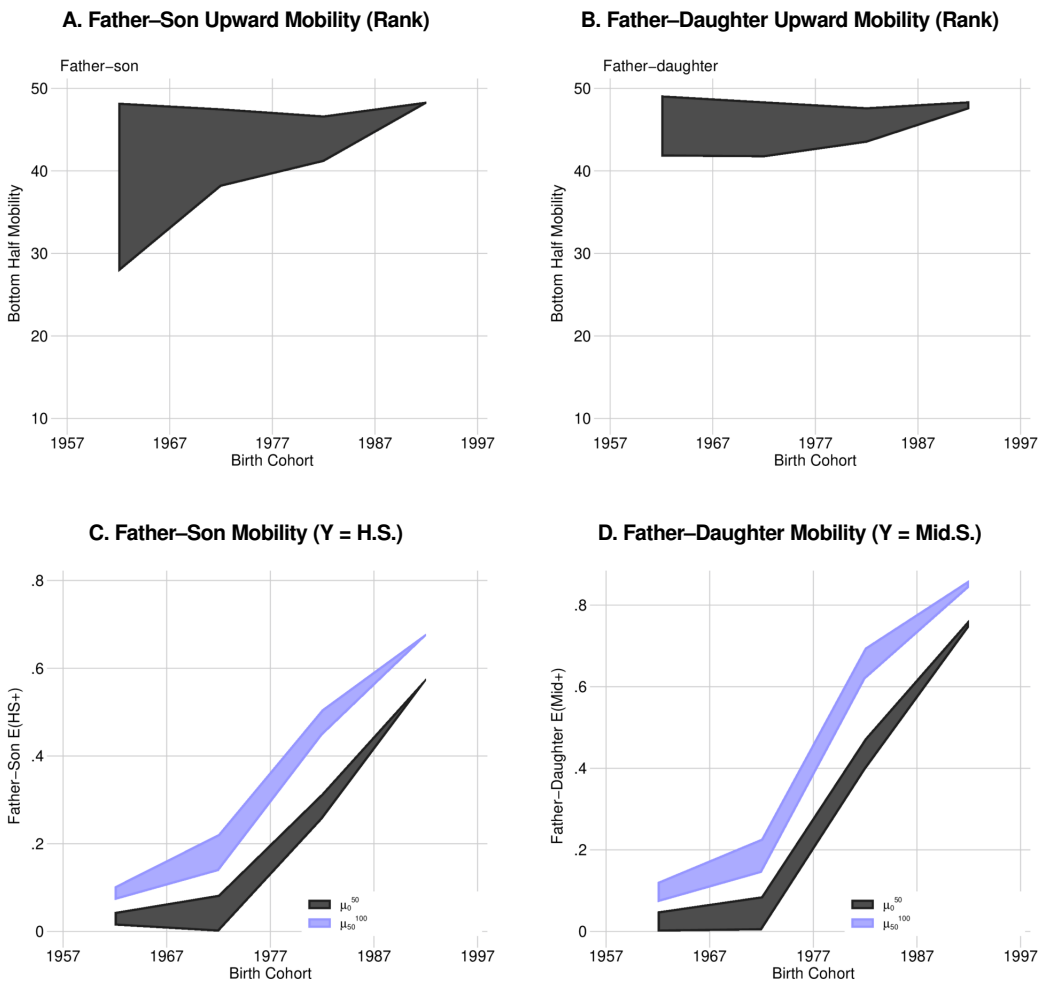
Bottom Half Mobility, Fathers to Sons and Daughters in Bangladesh



Note: Panels A and B show bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent rank and y is child rank. This is the average rank attained by children born to parents who are in the bottom half of the education distribution, respectively for sons and daughters. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). The first (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. The second (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

Figure A.18

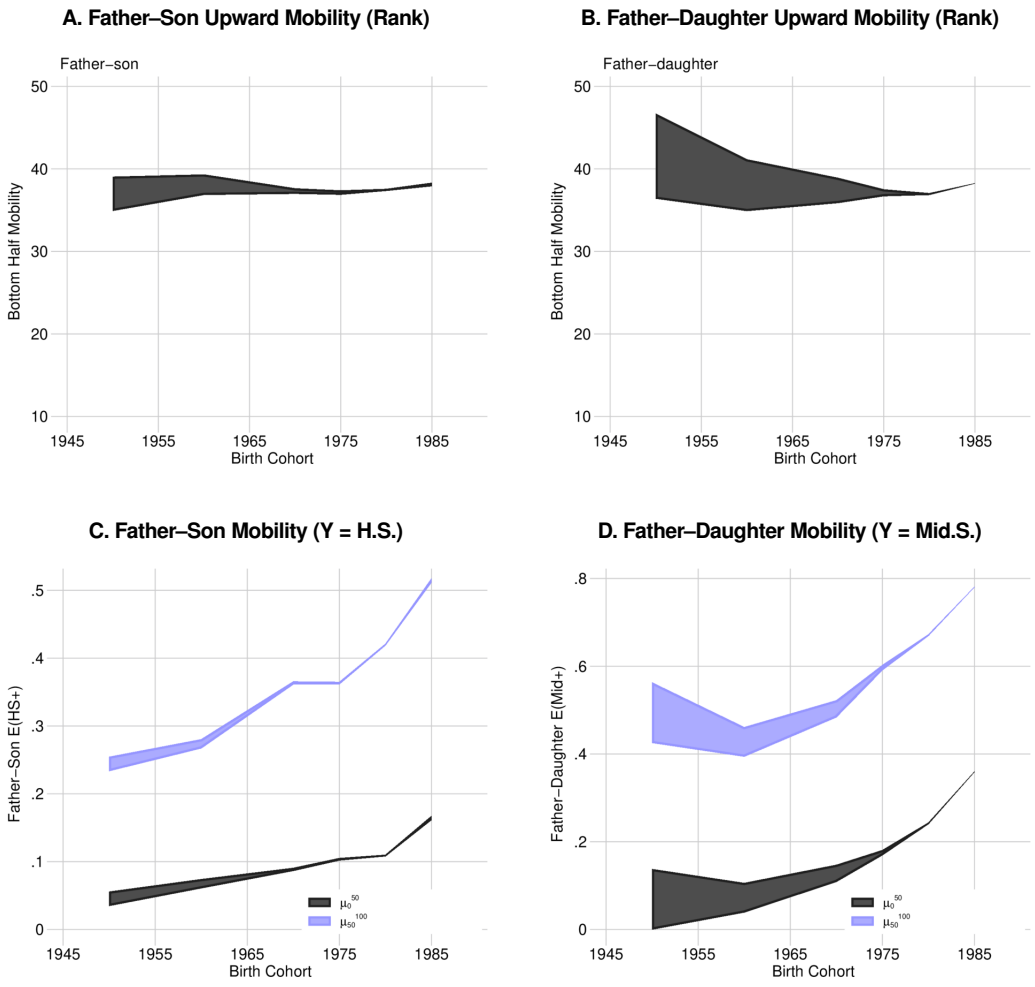
Bottom Half Mobility, Fathers to Sons and Daughters in Bhutan



Note: Panels A and B show bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent rank and y is child rank. This is the average rank attained by children born to parents who are in the bottom half of the education distribution, respectively for sons and daughters. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). The first (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. The second (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

Figure A.19

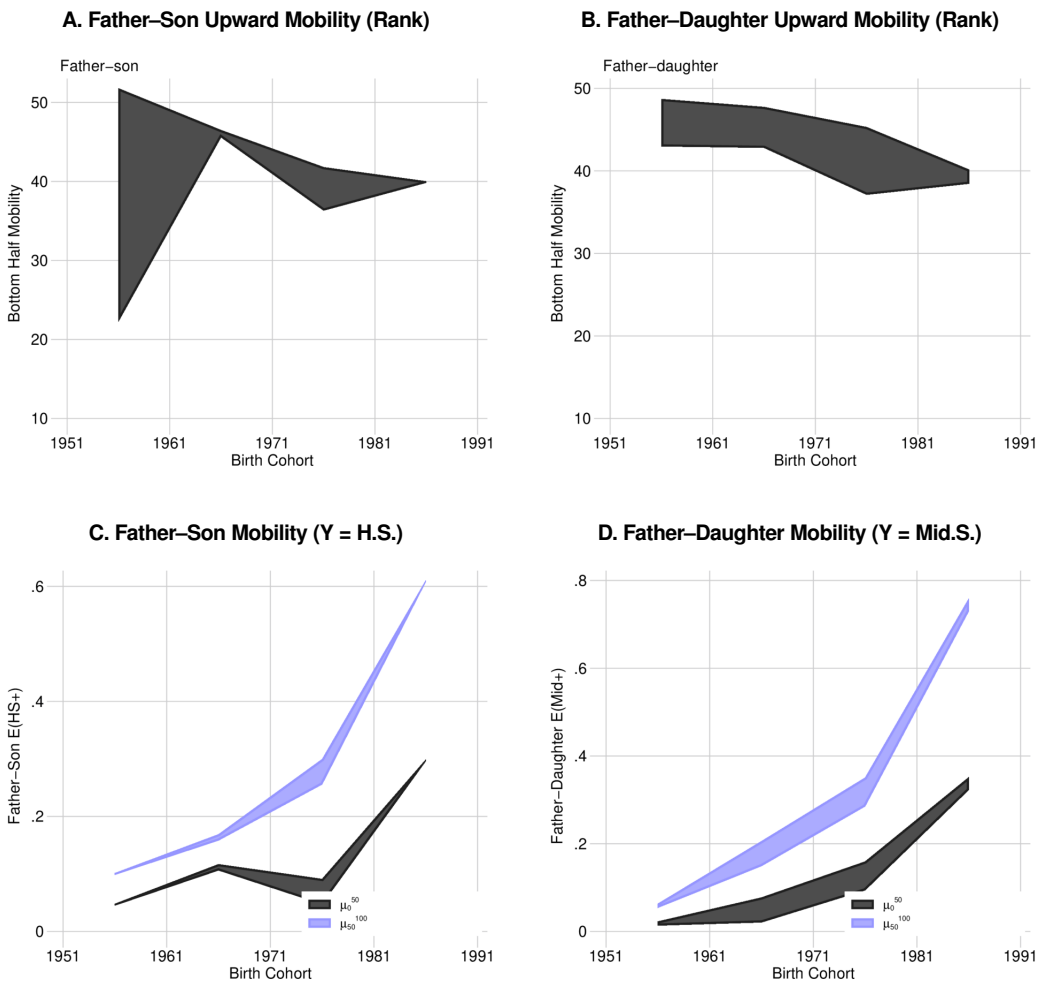
Bottom Half Mobility, Fathers to Sons and Daughters in India



Note: Panels A and B show bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent rank and y is child rank. This is the average rank attained by children born to parents who are in the bottom half of the education distribution, respectively for sons and daughters. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). The first (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. The second (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

Figure A.20

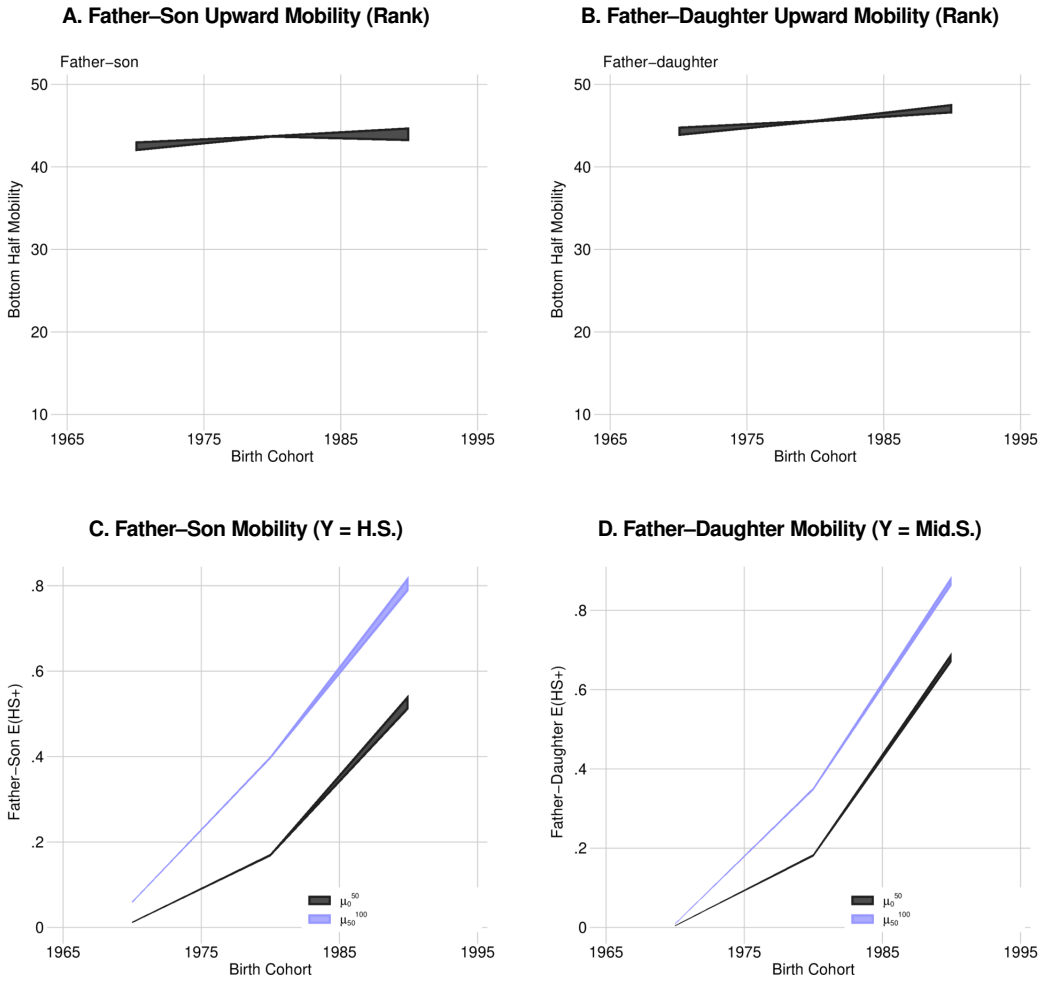
Bottom Half Mobility, Fathers to Sons and Daughters in Nepal



Note: Panels A and B show bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent rank and y is child rank. This is the average rank attained by children born to parents who are in the bottom half of the education distribution, respectively for sons and daughters. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). The first (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. The second (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

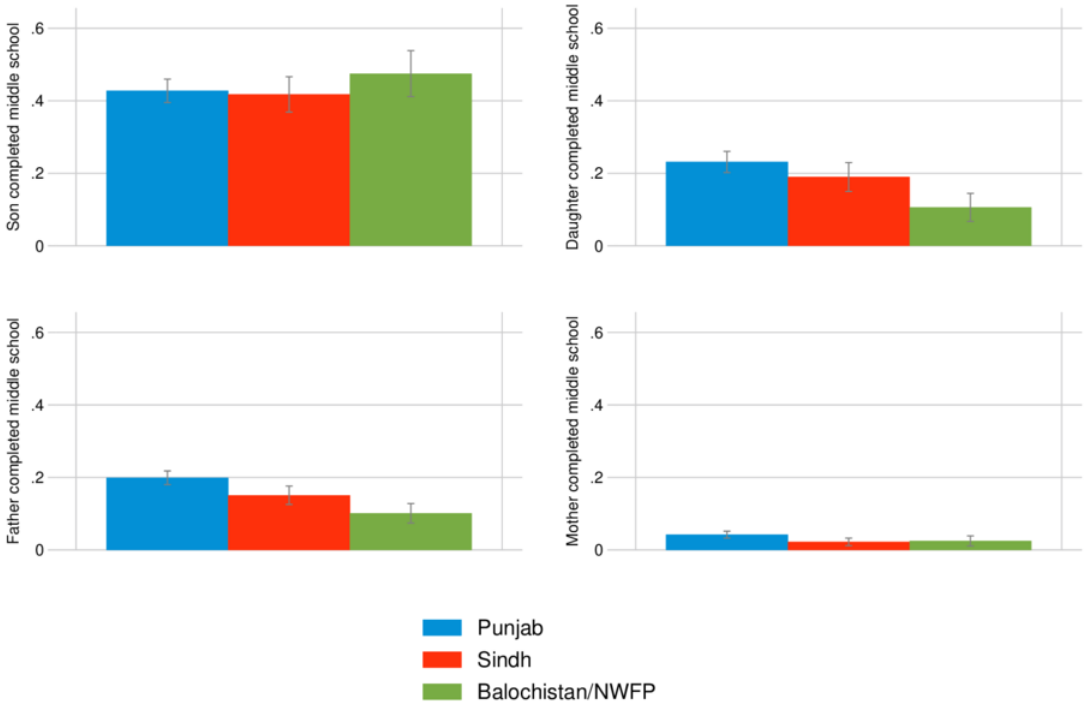
Figure A.21

Bottom Half Mobility, Fathers to Sons and Daughters in Sri Lanka



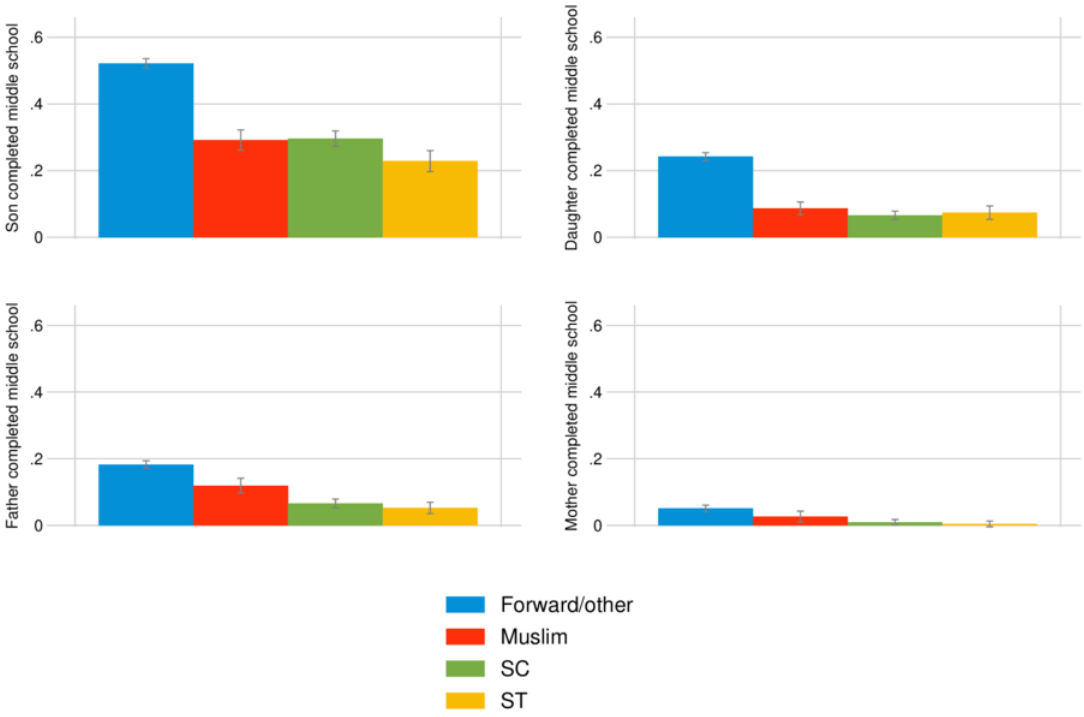
Note: Panels A and B show bottom half mobility ($\mu_0^{50} = E(y|x \in [0,50])$), where x is parent rank and y is child rank. This is the average rank attained by children born to parents who are in the bottom half of the education distribution, respectively for sons and daughters. Panels C and D show an analogous measure, $E(HS|x \in [0,50])$ (gray) and $E(HS|x \in [50,100])$ (blue). The first (gray) is the share of children completing high school (middle school for women), conditional on having parents in the bottom half of the education distribution. The second (blue) is the share of children completing high school (middle school for women), conditional on having parents in the top half of the parent distribution.

Figure A.22
Education attainment, by social groups in Pakistan



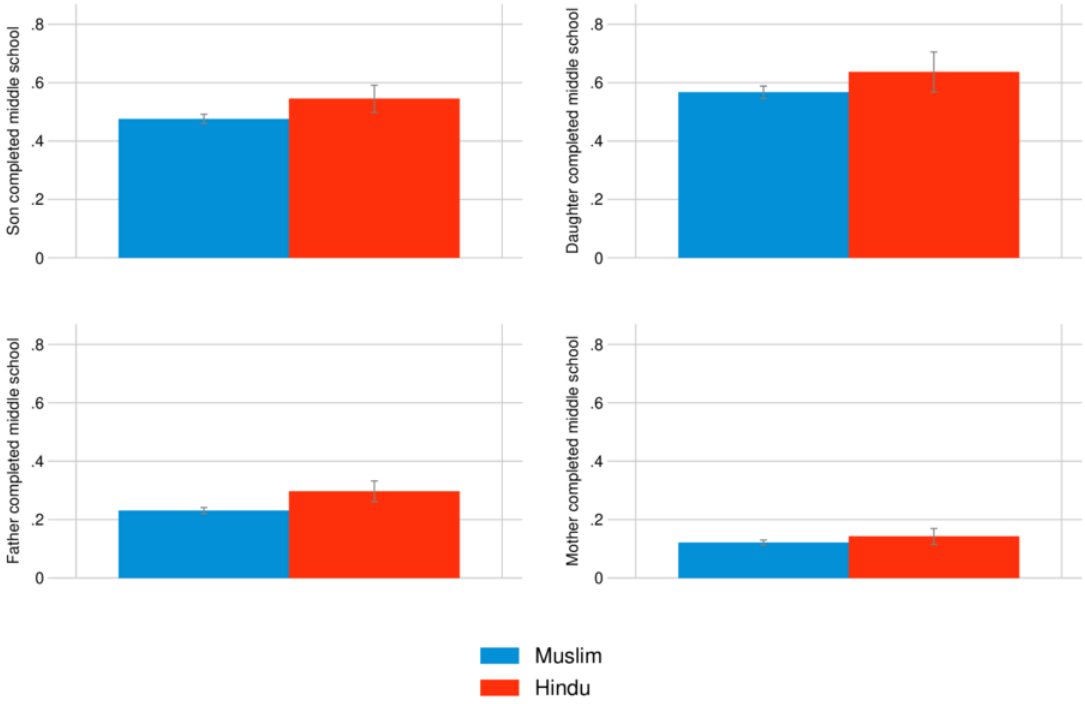
Note: The figure above shows education attainment disaggregated by social group and gender for individuals and their parents, for the oldest cohort in the analysis sample for Pakistan.

Figure A.23
Education attainment, by social groups in India



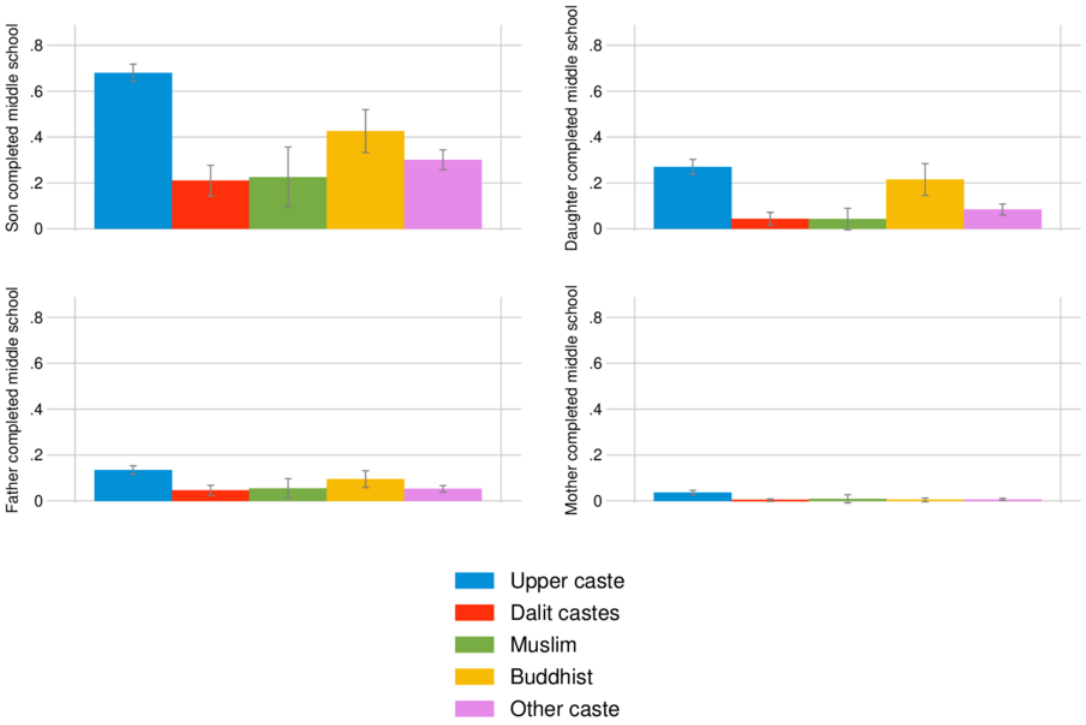
Note: The figure above shows education attainment disaggregated by social group and gender for individuals and their parents, for the oldest cohort in the analysis sample for India.

Figure A.24
Education attainment, by social groups in Bangladesh



Note: The figure above shows education attainment disaggregated by social group and gender for individuals and their parents, for the oldest cohort in the analysis sample for Bangladesh.

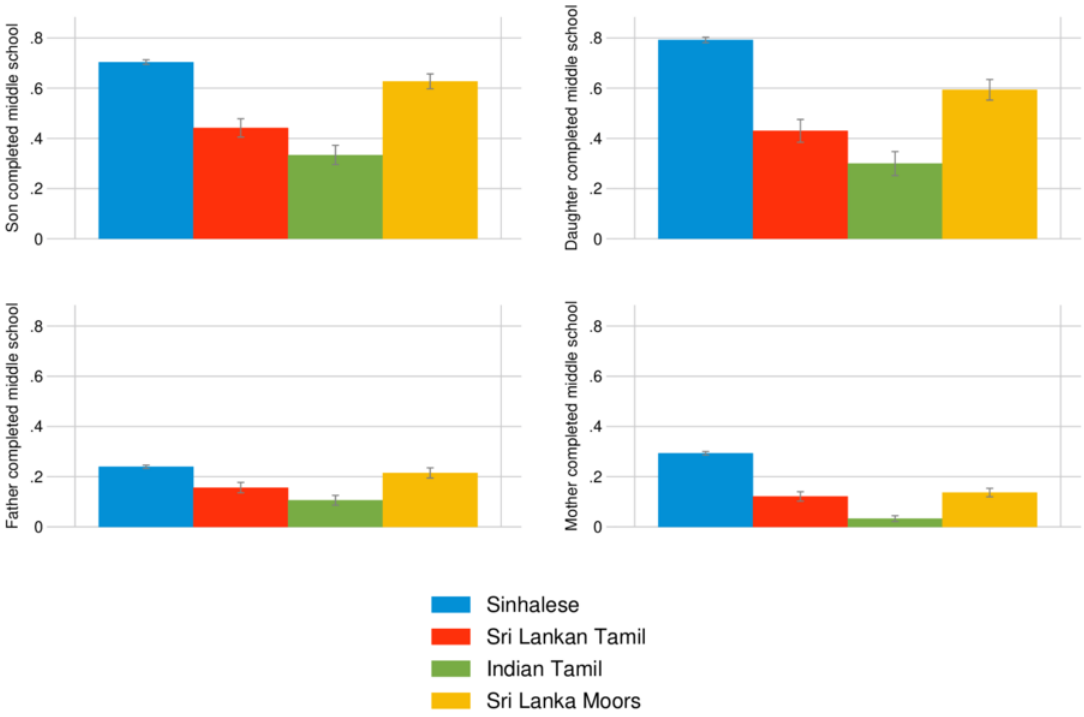
Figure A.25
Education attainment, by social groups in Nepal



Note: The figure above shows education attainment disaggregated by social group and gender for individuals and their parents, for the oldest cohort in the analysis sample for Nepal.

Figure A.26

Education attainment, by social groups in Sri Lanka



Note: The figure above shows education attainment disaggregated by social group and gender for individuals and their parents, for the oldest cohort in the analysis sample for Sri Lanka.

Appendix B: Description of Underlying Data Landscape

Table B.1
Additional datasets considered for analysis

Country	Survey	Reason for exclusion
Sri Lanka	STEP Skills Measurement Household Survey (2012)	Small sample size (3000 households)
Bangladesh, Pakistan, Nepal, India, Maldives	Demographic and Health Surveys (DHS)	The data only record education attainment of mothers
Maldives	Household Income & Expenditure Survey	Small sample size (5000 households)
Bangladesh, Afghanistan, Bhutan, Nepal	Multiple Indicator Cluster Surveys (MICS)	Data are only available for 4-17 year olds
Bangladesh	Integrated Household Survey	Only covers rural areas

Table B.2
Background of surveys included in the analysis sample

Country	Survey	Years	Purpose	Coverage	Additional notes
Afghanistan	Afghanistan Living Conditions Survey	2013, 2016	A record of socio-economic conditions of people in Afghanistan.	National and provincial level	
Afghanistan	National Risk & Vulnerability Assessment	2008, 2012	Provide up-to-date information for assessing the situation of the people of Afghanistan and to furnish data needed for monitoring progress toward development goals.	National and provincial level	- No female interviewers in Urozgan. This had consequences for the information on reproductive health, child health and fertility and mortality (2008) - Under-enumeration of women, girls, and young children, especially infants (2008, 2012) - In 150 out of 2,100 cases (7.1 percent), originally sampled clusters could not be visited, in most cases due to security reasons (2012) - For 133 of these cases (6.3 percent of the total), clusters were replaced (2012) - As the non-visited areas may have profiles different from visited areas, the final sample will have a slight bias in the results. This effect will have been larger at the provincial level for provinces with relatively large numbers of replacement (2012) - 18% of cases temporarily inaccessible, upon improvement of conditions these areas were cover in later round of data collection (2012) - Female interviewers very restricted in Zabul, maternal and child health, and fertility and mortality info largely missing for this province (2012) - Quality of age reporting in Afghan population remains poor, large heaping on ages with digits ending in 5 and 0 (2012)
Afghanistan	Income, Expenditure & Labor Force Survey	2019	Collect information on several dimensions of well-being, including poverty and inequality, food security, labor market outcomes, gender, education, health, and access to services and infrastructure at the household level.	National and provincial level	
Sri Lanka	Household Income & Expenditure Survey	1991, 1995, 2002, 2006, 2009, 2012	Identify income and expenditure patterns, average consumption, and incidences of poverty.	National/province/ district level (1991-2002) National/province/ district/sector level (2002-2006)	- Northern and Eastern provinces were excluded in the survey due to the prevailing conditions in the area (1991-1995) - Northern and Eastern provinces were conduucted in a separate survey (2002) - Excludes Northern Province and Trincomalee district in Eastern province (2006) - Excluded Mannar, Kilinochchi and Mullaithivu districts (2009)
Nepal	Living Standards Survey	1995, 2003, 2011	The objective measurement of the living standards of the people and for determining the level of poverty in the country.	Ward level	
Bangladesh	Household Income & Expenditure Survey	2000, 2005, 2010, 2016	Measure detailed data on household income to analyze the effects of policies, economic growth, and to support research, particularly in rural areas.	National level	- Raw data is contained in a xml format making it difficult to read and sort - In addition to income and demographics, there are detailed records of health over the past month for each respondent
Bhutan	Living Standards Survey	2003, 2007, 2012, 2017	Support and measure the development of Bhutan and support the next national five year plan.	National level	
Pakistan	Pakistan Integrated Household Survey, Social & Living Standards Survey	1991, 2006, 2008, 2010, 2012, 2014, 2019	Collect broad evidence to support policy making in Pakistan and enable research.	District level	
Pakistan	Household Income & Expenditure Survey	2001, 2004, 2005, 2007, 2010, 2011, 2013, 2015, 2018	Same as above.	Provincial level	

Appendix C: Data Construction

Extracting and matching parent–child education attainment from household survey roster data

Education of parents, irrespective of whether or not they are coresiding with their children, is directly recorded by two surveys that are part of our analysis sample – IHDS 2012 (India) and the Integrated Household Survey 1991 (Pakistan). For the remaining surveys in the analysis sample, we have constructed parent–child links using the household roster modules in each survey. The household roster module includes a variable that measures the relationship of each household member with respect to the household head. Using this variable, we were able to identify the spouse of the household head and coresident children of the household head. We were also able to identify the siblings and parents of the household head when they were coresident. We identified and linked grandchildren of the household head only in instances where there was no ambiguity about the parents (i.e. cases where there are multiple coresident children of the hosuehold head who could be parents of the identified grandchildren).

Standardizing weights across surveys

For most countries, we are pooling data not only from multiple rounds of the same survey but also from multiple surveys. For example, our analysis sample for Afghanistan comprises of two rounds of the Afghanistan Living Conditions Survey, two rounds of the National Risk & Vulnerability Assessment, and the 2019 round of the Income, Expenditure & Labor Force Survey. While each of these survey–year datasets did contain household weight variables, the scale of these weight variables varied across surveys (for e.g. 0–100, 0–1, etc.). Additionally, if the data for a particular country is drawn from two surveys and the second survey had a substantially larger sample, it is important for the weights to account for the difference in sample sizes. For these reasons, we created a re–scaled weight variable to standardize weights across each input dataset. This variable was calculated using the formula below.

$$Wt_{scaled} = ((Wt_{hh} - Wt_{Min})/Wt_{Max}) * N$$

Where Wt_{scaled} is the scaled and standardized household weight variable used across our final analyses, Wt_{hh} is the original household weight variable in the survey data, Wt_{Min} and Wt_{Max} are the minimum and maximum values of the weight variable in the dataset, and N is the sample size.

Harmonization of education attainment categories across countries

Education attainment of household members was recorded in susbtantially different forms across surveys. Some surveys recorded years of education attained whereas others captured highest education grade completed. Further, within the subset of surveys that documented highest education grade completion, there is variation in the granularity of the education categories. Some surveys record education attainment in coarse bins – no schooling, primary,

secondary, post–secondary, whereas others record specific grades. A key data assembly task entailed standardizing education attainment variables across surveys.

The final standardized education variable has the following categories: (i) less than two years of schooling, (ii) some primary education, (iii) completed primary edcuation, (iv) completed middle school, (v) completed high school, and (vi) post high–school. These categories were selected based on the underlying distribution of education attainment in the sample. If an individual is currently attending an education institution during the time of survey, we have assumed that they will at least complete the level of education they are currently pursuing.

References

Alesina, Alberto, Sebastian Hohmann, Elias Papaioannou, and Stelios Michalopoulos, "Intergenerational Mobility in Africa," *Econometrica*, 2021, *89* (1), 1–35.

Asher, Sam, Paul Novosad, and Charlie Rafkin, "Intergenerational Mobility in India: New Methods and Estimates Across Time, Space, and Communities," 2021. Working Paper.

Assouad, Lydia, Lucas Chancel, and Marc Morgan, "Extreme Inequality: Evidence from Brazil, India, the Middle East, and South Africa," in "AEA Papers and Proceedings," Vol. 108 2018, pp. 119–23.

Borooah, Vani K., "Caste, Inequality, and Poverty in India," *Review of Development Economics*, 2005, *9* (3), 399–414.

Boserup, Simon Halphen, Wojciech Kopczuk, and Claus Thustrup Kreiner, "Stability and Persistence of Intergenerational Wealth Formation: Evidence from Danish Wealth Records of three generations," 2014. Working paper.

Card, David, Ciprian Domnisoru, and Lowell Taylor, "The Intergenerational Transmission of Human Capital: vidence from the Golden Age of Upward Mobility," *Journal of Labor Economics*, 2022, *40* (S1), S39–S95.

Castaneda-Aguilar, Raul Andres, Alexandru Cojocaru, Elizabeth Louise Amorim Howton, Christoph Lakner, Minh Cong Nguyen, Marta Schoch, Judy Yang, and Nishant Yonzan, "Poverty and Shared Prosperity 2020: Reversals of Fortune," 2020.

Chancel, Lukas and Thomas Piketty, "Indian income inequality, 1922–2015: From British Raj to Billionaire Raj?," *The Review of Income and Wealth*, 2019, *65* (S1).

Chetty, Raj, Nathaniel Hendren, Maggie R Jones, and Sonya R Porter, "Race and Economic Opportunity in the United States: An Intergenerational Perspective," *Quarterly Journal of Economics*, 2020, *135* (2).

—— , —— , **Patrick Kline, Emmanuel Saez, and Nicholas Turner**, "Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility," *American Economic Review: Papers & Proceedings*, 2014, *104* (5), 141–147.

Corak, Miles, "Income Inequality, Equality of Opportunity, and Intergenerational Mobility," *Journal of Economic Perspectives*, 2013, *27* (3).

de Silva, Tiloka, Supun Gothama, and Priyantha Premakumara, "Admissions Quotas in University Education: Targeting and Mismatch under Sri Lanka's Affirmative Action policy," *International Journal of Educational Development*, 2021, *84*, 102440.

Derenoncourt, Ellora, "Can you move to opportunity? Evidence from the Great Migration," 2019. Working paper.

Gellner, David N, "Caste, Ethnicity and Inequality in Nepal," *Economic and Political Weekly*, 2007, pp. 1823–1828.

Güell, Maia, José V Rodríguez Mora, and Christopher I. Telmer, "The Informational Content of Surnames, the Evolution of Intergenerational Mobility, and Assortative Mating," *Review of Economic Studies*, 2013, *82* (2).

Heath, Rachel and Seema Jayachandran, "The Causes and Consequences of Increased Female Education and Labor Force Participation in Developing Countries," 2017.

Hnatkovska, Viktoria, Amartya Lahiri, and Sourabh B. Paul, "Castes and Labor Mobility," *American Economic Journal: Applied Economics*, 2012, *4* (2).

Ito, Takahiro, "Caste discrimination and transaction costs in the labor market: Evidence from rural North India," *Journal of Development Economics*, 2009, *88* (2), 292–300.

Jayasinghe, Maneka, "Dynamic trends in household poverty and inequality in Sri Lanka: do gender and ethnicity matter?," *Journal of the Asia Pacific Economy*, 2019, *24* (2), 208–223.

Jodhka, Surinder S and Ghanshyam Shah, "Comparative contexts of discrimination: Caste and untouchability in South Asia," *Economic and Political Weekly*, 2010, pp. 99–106.

Kruijk, Hans De and SM Naseem, "Inequality in the Four Provinces of Pakistan [with Comments]," *The Pakistan Development Review*, 1986, *25* (4), 685–706.

Narayan, Ambar and Roy Van der Weide, *Fair Progress? Economic Mobility Across Generations Around the World*, World Bank Group, 2018.

Page, Lucy and Rohini Pande, "Ending Global Poverty: Why Money isn't Enough," *Journal of Economic Perspectives*, 2018, *32* (4), 173–200.

Solon, Gary, "Intergenerational Mobility in the Labor Market," in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, Amsterdam: North Holland Press, 1999, pp. 1761–1800.

Sunam, Ramesh, Bishnu Pariyar, and Krishna K Shrestha, "Does Affirmative Action undermine Meritocracy? "Meritocratic inclusion" of the Marginalized in Nepal's Bureaucracy," *Development Policy Review*, 2022, *40* (1), e12554.

Vijeyarasa, Ramona, "Women's Absence in Sri Lankan Politics: Lessons on the Effectiveness and Limitations of Quotas to address Under-representation," in "Women's Studies International Forum," Vol. 81 Elsevier 2020, p. 102371.

Wagle, Udaya R, "Economic inequality in Nepal: Patterns and Changes during the Late 1990s and Early 2000s," *Journal of International development*, 2010, *22* (5), 573–590.

Wantchekon, Leonard and Piero Stanig, "The Curse of Good Soil? Land Fertility, Roads, and Rural Poverty in Africa," 2015. Working paper.

Wodon, Quentin T, "Microdeterminants of Consumption, Poverty, Growth, and Inequality in Bangladesh," *Applied Economics*, 2000, *32* (10), 1337–1352.