

NBER WORKING PAPER SERIES

RELIGION AND EDUCATIONAL MOBILITY IN AFRICA

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Working Paper 28270  
<http://www.nber.org/papers/w28270>

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
December 2020

We are thankful to Raj Chetty, Ed Glaeser, Nathaniel Hendren, and Markus Poschke for suggestions and comments. We have received useful feedback and comments from seminar participants at the New Economic School, RIDGE Conference, the NBER Summer Institute, Harvard, Zurich, and the CEPR Conference on The Economics of Religion. We also thank Remi Jedwab, Adam Storeygard, Julia Cage, Valeria Rueda, and Nathan Nunn for sharing their data. An earlier draft of the paper was titled Intergenerational Mobility in Africa across Religious and Ethnic Lines. All errors and omissions are our responsibility. The paper is dedicated to Alberto, who tragically passed away while we were revising the manuscript. We will never forget his boundless curiosity, drive, and charm. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

At least one co-author has disclosed additional relationships of potential relevance for this research. Further information is available online at <http://www.nber.org/papers/w28270.ack>

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NBER Working Paper No. 28270

December 2020

JEL No. N0,N37,O0,O1,O15,O55,Z12

### **ABSTRACT**

This paper offers a comprehensive account of the intergenerational transmission of education across religious groups in Africa, home to some of the world's largest Christian and Muslim communities. First, we use census data from 20 countries to construct new upward and downward religion-specific intergenerational mobility (IM) statistics. Christian boys and girls have much higher upward and lower downward mobility than Muslims and Animists. Muslims perform well only in a handful of countries where they are small minorities. Second, we trace the roots of these disparities. Although family structures differ across faiths, this variation explains only a small fraction of the observed IM inequities (roughly 12%). Inter-religious differences in occupational specialization and urban residence do not play any role. In contrast, regional features explain nearly half of the imbalances in educational mobility. Third, we isolate the causal impact of regions from spatial sorting exploiting information on children whose households moved when they were at different ages during childhood. Irrespective of the religious identity, regional exposure effects are present for all children moving before 12. Fourth, we map and characterize the religious IM gaps across thousands of African regions. Among numerous regional geographic, economic, and historical features, the district's Muslim share is the most important correlate. Children adhering to Islam underperform Christians in areas with substantial Muslim communities. Fifth, survey data reveal that Muslims display stronger in-group preferences and place a lower valuation on education. Our findings call for more research on the origins of religious segregation and the role of religion-specific, institutional, and social conventions on education and opportunity.

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A data appendix is available at <http://www.nber.org/data-appendix/w28270>

## 1 Introduction

Africa hosts vibrant Christian and Muslim communities, and given the demographic trends, it will be home to the largest number of both creeds in the next decades, Pew Research Center (2016). Religiosity is high funneling the salience of religious identities. Over the past years, however, various parts of the continent are experiencing a politicization of faith. Political strains in the Sahel are marked by frictions between the predominantly Muslim Northerners and Christians residing in the South. Religion has also been instrumental in the secession of South Sudan in 2011 and the recurrent conflict in Mali, with parts of East and South Africa recently suffering bouts of religiously-tainted violence. These developments are not idiosyncratic; they reflect, instead, the rising role of religious identities in expressions of nationalism, conflict, and repression in the continent (Fox (2004), Basedau and Schaefer-Kehnert (2019)).<sup>1</sup>

The most significant divide between African Muslims and Christians, nevertheless, is not their religion. As Table 1 illustrates, education circumscribes the religious rift.<sup>2</sup> Christians born just before independence (1950s) enjoyed higher attainment rates, reflecting colonial investments and Christian missionary activity, among others. In many countries, mostly in West Africa, primary school completion for Christians was more than double that of Muslims or Africans adhering to local religions (Ghana, Cameroon, Togo, Benin, Sierra Leone, Burkina Faso, Nigeria, and Malawi). Thanks to the implementation of ambitious educational expansion programs, the share of Africans with no schooling has fallen from two-thirds in the 1950s to less than half for the 1990s cohort. However, religious differences in education persist. In Nigeria, Africa's most populous country, the share of completed primary education (years of schooling) for Christians is 0.88 (9) and for Muslims 0.57 (2.9). In Ethiopia, Africa's second-most populous country, 29% of Christians born in the 1990s completed primary education, with Muslims registering 16%.<sup>3</sup> Muslims appear more educated only in a few countries where they are small minorities, i.e., South Africa, Rwanda, Zambia, and Uganda.

Religious extremism in the Sahel conspicuously targets young Muslim girls and boys that aspire to get educated (see Bertoni et al. (2019)), rendering the interplay between education and religious affiliation a focal point for academics and policymakers alike.<sup>4</sup> Headline statistics on the considerable differences in education across religious groups abound (e.g., Majgaard and Mingat (2011)). Nevertheless, a comprehensive account of the evolution of these gaps and their determinants is missing. This paper

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<sup>1</sup>Using the Minorities at Risk and the State Failure datasets, Fox (2004) shows that these troubling events accelerated in the 1980s. Focusing on Africa, Basedau and Schaefer-Kehnert (2019) present evidence that religious discrimination –that correlates significantly with religious conflict- is on the rise, and conclude their analysis with case studies from Comoros, the Gambia, Mali, and Mauritania.

<sup>2</sup>The table looks at the share of the population with completed primary education, as this is the relevant attainment margin in Africa in the four decades post-independence (Appendix Section A). Appendix Table A.1 reports otherwise similar tabulations of the mean years of schooling.

<sup>3</sup>While 60% of Christians born in Africa in the 1960s did not complete primary education, for the 1980s-born cohort, the share had fallen to 30%. The fraction of Muslims without primary education dropped from 80% for the 1960s-born to 60% during the same period (see Appendix Figure A.2). Appendix Figures A.1 plot, as examples, the evolution of education across cohorts in Ethiopia, Nigeria, Cameroon, Mali, Senegal, and Uganda.

<sup>4</sup>For example, the European Union (EU) has been assisting Sahelian governments in their fight against religious extremism for the past decade. In October 2020, recognizing that ongoing efforts are very successful, the EU pledged additional resources for the Central Sahel (Burkina Faso, Niger, and Mali, plagued by religious violence and poverty).

**Table 1:** Country-group-level share primary completed

country	group percentage			1950s				1990s			
	(1) Christian	(2) Muslim	(3) Traditional	(4) Christian	(5) Muslim	(6) Traditional	(7) $\Delta(c - m)$	(8) Christian	(9) Muslim	(10) Traditional	(11) $\Delta(c - m)$
Botswana	76.0	0.6	4.9	0.51	0.78	0.24		0.96	0.92	0.82	
Egypt	5.6	94.4		0.47	0.31			0.88	0.87		
Nigeria	52.5	46.6	0.9	0.55	0.23	0.29		0.88	0.57	0.35	
South Africa	82.7	1.5	0.2	0.66	0.9	0.27		0.84	0.95	0.79	
Ghana	70.1	16.9	6.6	0.62	0.23	0.12		0.77	0.57	0.3	
Cameroon	69.2	20.9	5.6	0.68	0.3	0.21		0.76	0.42	0.39	
Togo	47.9	15.7	29.0	0.5	0.19	0.11		0.73	0.57	0.42	
Zambia	91.7	0.5	4.3	0.55	0.57	0.5		0.72	0.76	0.7	
Benin	44.2	25.4	22.0	0.35	0.12	0.04		0.65	0.4	0.45	
Senegal	4.2	95.2		0.46	0.21			0.64	0.3		
Uganda	85.5	11.2	0.8	0.37	0.41	0.04		0.52	0.61	0.03	
Sierra Leone	21.1	76.7	0.1	0.43	0.15	0.04		0.49	0.29	0.25	
Mali	2.4	95.1	2.0	0.21	0.11	0.02		0.43	0.3	0.18	
Rwanda	93.2	1.8	0.3	0.2	0.32	0.03		0.39	0.55	0.38	
Burkina Faso	21.6	58.7	18.8	0.19	0.05	0.01		0.36	0.19	0.08	
Liberia	85.8	12.1	0.6	0.36	0.23	0.14		0.32	0.3	0.14	
Malawi	81.4	12.9	2.4	0.25	0.11	0.16		0.31	0.2	0.18	
Guinea	5.7	86.9	3.0	0.36	0.14	0.07		0.3	0.22	0.16	
Ethiopia	64.0	31.1	3.9	0.09	0.03	0.02		0.29	0.16	0.07	
Mozambique	56.4	18.0	6.7	0.1	0.06	0.12		0.2	0.12	0.23	

The table reports the share of the population with completed school primary for individuals aged 14+ for the 1950s and 1990s cohorts (because of census timing, we have to use the 1980s instead of the 1990s for Guinea, Senegal, Sierra Leone, Uganda, and South Africa). Columns (1) - (3) show religious group population shares (percentages). Columns (4) - (6) report the primary school completion shares for Africans born in the 1950s and columns (8) - (10) for the 1990s-born. Columns (7) and (11) show differences between Christians and Muslims; red bars indicate a negative difference, green bars a positive difference.

maps, explores, and explains intergenerational mobility (IM) across religious lines in Africa.

## 1.1 Results Preview

Our exploration proceeds in five steps. First, we construct novel statistics of upward and downward IM for religious groups across 20 countries, using Census information from more than six million 14-18 year old individuals (typically children) who cohabit with at least one older generation member (typically father or/and mother). Absolute upward IM denotes the likelihood that a child born to an older generation that has not completed primary schooling manages to do so. Downward IM reflects the probability that children whose parents have completed at least primary schooling do not. There are large gaps in IM across religious lines. Muslim (Animist) kids born to illiterate parents compared to Christians in the same country and birth-decade, are 16% (21%) less likely to complete primary schooling. Ghana is representative. Upward IM for Muslims is 47%, just 23% for Animists, and 65% for Christians. Differences in downward IM are somewhat smaller. However, in Nigeria, home to 80 million Christians and 80 million Muslims, and in Cameroon downward IM is two and four times as large for Muslims compared to Christians. Inter-religious differences in educational mobility are considerable for both boys and girls, but Muslim girls perform worse than boys in West Africa.

Second, we explore the roots of the considerable religious gaps in IM, distinguishing between three sets of features: *(i) Household and Family Structure*. Christian, Muslim, and Animist households differ in household size, cohabitation in extended families, and marriage age, among others. Nevertheless, differences in family arrangements explain only a small part of the IM gaps; about 12%. *(ii) Economic Factors*. Parental occupation, the industry of employment, and a household's urban-rural residence play

no role in explaining the IM differences between Christians and Muslims but do account somewhat for the Christian-Animist gap. *(iii) Region-Specific Attributes.* District (urban/rural) fixed effects explain roughly half of the observed imbalances. This is especially the case in the Sahel and West Africa, where Muslims reside mostly in the North and Christians in the South. Nonetheless, the religious IM gap is present even when we compare children in the same region, living in households of similar structure, size, and parental occupation.

In light of this finding, we turn to regions' role in the third part of the study. We employ the method of Chetty and Hendren (2018a) to identify regions' causal impact on educational mobility for Christians, Muslims, and Animists. The non-parametric methodology exploits the timing of a household's move to isolate childhood regional effects from spatial sorting. Both Muslim and Christian children, as well as Animists, benefit when their families move to higher IM areas before the age of 12. Regional childhood exposure effects are similar across faith, if anything more substantial for Muslim girls.

Given regions' independent role in educational mobility across religious denominations, we map religious IM differences across more than 2,000 regions and explore their regional correlates in the fourth part. Historical, geographic, and economic attributes of regional development correlate with IM across all religions. But, as the magnitudes are similar for Christians, Muslims, and Animists, none explains the religious IM gap. On the contrary, a region's Muslim share emerges as the most important correlate, with Muslim children under-performing relative to their Christian peers in areas with substantial Muslim communities. Notably, this is not the case for Christians and Animists for whom the presence of coreligionists plays no role in shaping their IM. Besides, the significantly positive (negative) within-country across district association between the Muslim share and the Christian-Muslim upward (downward) IM gap holds, accounting for old generation's literacy.

In the fifth and last part, we delve into the intriguing association between the Muslim share and Christian-Muslim mobility gaps using survey data from the Afrobarometer, spanning more than 35 countries. Muslims' preference for residing with coreligionists is more potent than that expressed by Christians and Animists. This result suggests that in-group preferences cement religious segregation that in turn maps into sizable differences in educational opportunities. Besides, Muslim respondents are less likely to report that education should be a priority domain for government action than neighboring Christians, suggesting that schooling infrastructure is not the leading candidate for explaining the uncovered within-district religious IM differences.

## 1.2 Literature

Our paper connects to three strands of the literature. The first is that of intergenerational mobility. This topic is receiving renewed interest as the use of matched children-parents administrative data allows mapping IM across space, examining the role of places, policies, and family arrangements (see Solon (1999) and Black and Devereux (2011) for overviews).<sup>5</sup> Of most relevance are studies on the intergenerational transmission of human capital, like Hilger (2017) who examines trends in educational mobility in the US across the 20th century, Geng (2018) who maps educational mobility across Chinese provinces, and Narayan et al. (2018) who provide IM estimates in education and income using survey data from a large

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<sup>5</sup>Chetty et al. (2014) and Chetty et al. (2020a) provide mappings of intergenerational mobility in income across US commuting zones and census tracts, respectively.

number of countries (see also Hertz (2005)).<sup>6</sup> Our focus on religious differences in mobility is similar to works examining gaps across groups, mostly race (e.g., Chetty et al. (2020b), Davis and Mazumder (2020b)). Card, Domnisoru, and Taylor (2018) explore racial gaps in the US and Asher, Novosad, and Rafkin (2020) differences across religious groups and castes in India, revealing considerable differences. The paper also connects to our parallel work in (Alesina et al. (2020)), where we study regional IM variation in Africa and the illuminating studies of Wantchekon, Klačnja, and Novta (2015) and Carillo and Iglesias (2020) on the intergenerational transmission of education in Benin and South Africa, respectively.

Second, our findings speak to research on African development that has moved, from cross-country approaches focusing on national policies and institutions to regional and individual-level analyses looking at the role of historical features (see Gunning and Collier (1999) and Michalopoulos and Papaioannou (2020) for reviews).<sup>7</sup> Since Easterly and Levine (1997), who attributed Africa’s under-performance post-independence to ethnic fractionalization, the literature has examined in detail ethnicity’s chief role in African politics. We add to this research agenda by bringing in the foreground the role of religious identities, a less studied social cleavage that transcends ethnicity, and matters crucially for educational dynamics. Our findings are also relevant to the studies exploring the impact of African post-independence educational reforms that have not studied in detail heterogeneity across religious lines (Majgaard and Mingat (2011) provide an overview).

Third, our paper is part of the vast body of research on religion and economic performance (e.g., Barro and McCleary (2003), Guiso and Zingales (2003), and Becker, Rubin, and Woessmann (2020)), and works on Islam’s role (see Kuran (2018) for a review). The latter often focus on the Middle East and Asia (e.g., Kuran (2011)). It is in Africa, though, that the inter-religious gaps in education are striking, and a plethora of narratives and case studies point to their rising salience. A notable exception is the parallel work of Platas (2018), who also studies educational differences between Christians and Muslims in Africa (see also Manglos-Weber (2017)). Zooming in on Malawi, she argues that colonial-era inter-religious differences in formal education provision led to distinct social norms about school attendance post-independence.

## 2 Data

### 2.1 Countries & Regions

We use census data from the IPUMS (Integrated Public Use Microdata Series) International that collects, harmonizes, and reports representative samples, typically 10%. Information on the respondents’ religion is available in 37 censuses from 19 African countries: Benin, Botswana, Burkina Faso, Cameroon, Egypt, Ethiopia, Guinea, Ghana, Liberia, Malawi, Mali, Mozambique, Rwanda, Senegal, Sierra Leone, South Africa, Togo, Uganda, and Zambia. We also add Nigeria using IPUMS data from household surveys

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<sup>6</sup>Education features prominently also in theoretical works on intergenerational mobility in income (Becker and Tomes (1979), Loury (1981)). Borjas (1992) stresses the role of ethnic spillovers in educational investments in the US, in the same vein that our study emphasizes religion-specific ones.

<sup>7</sup>Of most relevance are studies on the role of Catholic and Protestant missions that spread Christianity (e.g., Nunn (2010), Jedwab, zu Selhausen, and Moradi (2018)) and education, and works on the spread of Islam (e.g., Michalopoulos, Naghavi, and Prarolo (2018) and Bauer, Platas, and Weinstein (2019)). Glaeser and Shleifer (2004) and Easterly and Levine (2016) provide macro perspectives on the role of colonization by Christian Western powers on human capital.

conducted in consecutive years between 2006 and 2010. So our sample consists of 20 countries, hosting in 2020 roughly 750 million (of Africa’s 1.35 billion) people. Besides education, the census also reports information on the household structure (family members, their age, and other demographic and socio-economic variables); residence (typically across admin-2 and 3 units and rural-urban status); and for 13 countries, we have records of the birth region and the time of relocation for moving families (that we use below).

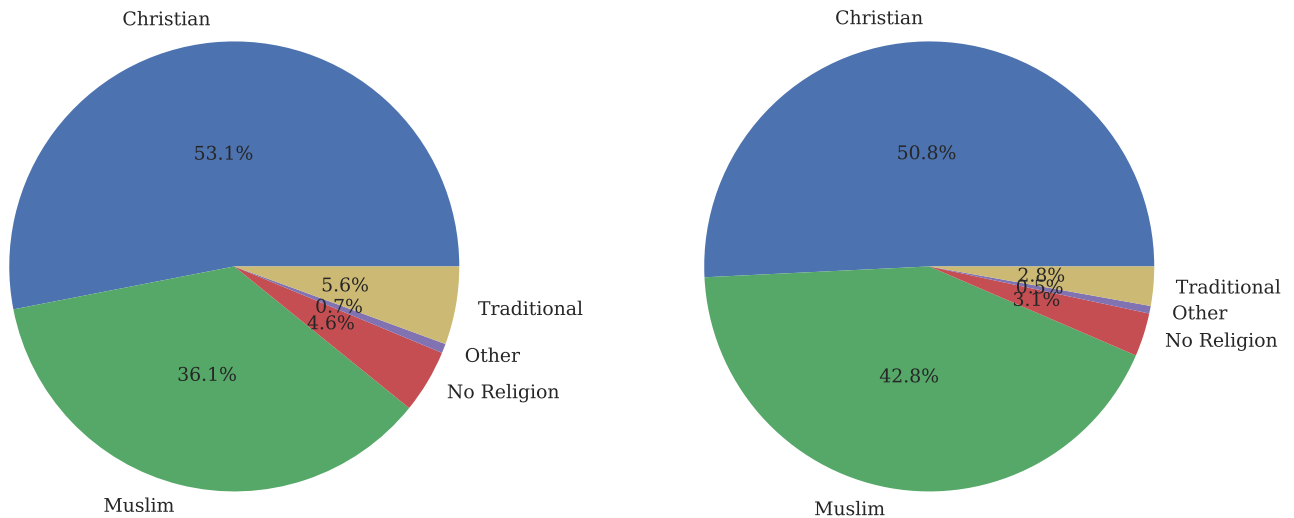
The detail of religious denomination differs across censuses and countries. For example, South Africa records dozens of religious groups, even though most are tiny (e.g., Buddhist, Jehovah Witness), while Mali, Malawi, Nigeria, and Liberia distinguish only between Christians, Muslims, Animists, and Other. Appendix Table B.3 provides details. We harmonize religions across countries into three main categories, Muslims, Animists, and Christians and two auxiliary ones, Other and No Religion.<sup>8</sup>

Figure 1, panel (a) reports the raw religious shares, while panel (b) weights by the 1980 country-level population to account for the small number of observations in Nigeria, Africa’s largest country with a sizable Muslim population. Christians are 51%, Muslims 42.2%, while the share of Africans adhering to local religions is about 3%. Table 1 reports the country shares. Egypt, Senegal, Sierra Leone, Mali, Burkina Faso, and Guinea are predominantly Muslim, while Muslim’s population share is considerable also in Nigeria (46.6%) and Ethiopia (31%). The share of Animists is substantial in West Africa, in Togo (29%), Benin (22%), and Burkina Faso (19%).

**Figure 1:** Major Religions. 20 African Countries

(a) Unweighted, All Individuals

(b) 1980-population weighted, all individuals



The figure plots the population share of the main religions in our sample of 20 African countries. Panel (a) reports the shares across 72,652,623 individual observations. Panel (b) reports weighted shares using the countries’ population in 1980. The Christian share combines various denominations, like Orthodox, Catholic, and Protestant, available in some censuses. Likewise, the Muslim share combines various branches, like Sunni and Shia. Traditional also combines various indigenous religions, like Vodun, Animist, and Traditional Religions. Appendix Figure A.1 gives country-specific details.

<sup>8</sup>The "No Religion" is a residual category that is not consistently coded across censuses. It should not be confused with atheism.

## 2.2 Educational IM

To compile IM statistics, we need to observe children’s education and at least one individual of the immediately older generation.<sup>9</sup> We construct two measures of *absolute* IM focusing on completed primary education, as this is the relevant margin during the sample period that covers cohorts born from independence till the 1990s (Appendix Figure A.2).<sup>10</sup>

- Absolute Upward IM.  $IM_{up_{irbct}}$  equals 1 if a child  $i$  belonging to birth-decade  $b$  in country  $c$ , observed in census-year  $t$ , of religious affiliation  $r$  (Muslim, Christian, or Animist), born to parents that have not completed primary schooling, manages to complete primary education.
- Absolute Downward IM.  $IM_{down_{irbct}}$  equals 1 if a child  $i$  belonging to birth-decade  $b$ , in country  $c$ , observed in census-year  $t$ , of religious affiliation  $r$ , born to parents that have completed primary schooling, does not complete primary education.

To maximize coverage, we use the average attainment of individuals one generation older in the household, rounded to the nearest integer for “parental education.”<sup>11</sup>

## 2.3 Cohabitation

Matching young individuals to cohabiting older generation members raises cohabitation-selection concerns, as the transmission of education, may differ between children living with older family member(s) and those that do not, and this selection may not be the same across groups. These issues are less pressing for young children, as almost all of them cohabit with their parents (cohabitation rates for 8 – 10 year old exceed 95%). But, for very young children, we risk misclassifying their schooling. Hence, following Card, Domnisoru, and Taylor (2018), we focus on “children” aged 14 – 18 years, as by then primary education is mostly completed and cohabitation rates are still quite high (see Alesina et al. (2020) for details on matching and information on household structure).

The Appendix Section B reports religion-specific cohabitation statistics for each census, as their details differ. On average, cohabitation with *any relatives* for children aged 14 – 18 exceeds 97% for all religious groups. However, the “*relationship to household head*” variable is coarsely documented in some censuses. When we examine cohabitation rates with older generation relatives (typically biological parents and in some instances uncles and aunts) and older relatives (15-40 years older than the child), cohabitation rates

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<sup>9</sup>In Alesina et al. (2020), we provide validation exercises, showing, among others, that IPUMS’ educational info correlates strongly (correlations in excess of 0.9) across countries-cohorts with the Barro and Lee (2013) statistics and across regions (within countries) with the Demographic and Health Survey (DHS) data (see also Gennaioli et al. (2014)).

<sup>10</sup>The intergenerational mobility literature has employed various measures (see Black and Devereux (2011)). Many studies focus on (one minus) the intergenerational coefficient obtained from a regression of children on parental schooling (e.g., Hertz et al. (2008)); some studies work with rank-rank correlation coefficients and intergenerational rank movements (e.g., Asher, Novosad, and Rafkin (2020), Geng (2018)). Other studies (e.g., Card, Domnisoru, and Taylor (2018), Davis and Mazumder (2020a) and Chetty et al. (2017)) focus, as we do, on absolute transition likelihoods. Gottschalk and Spolaore (2002) provide a theoretical exploration of the different mobility measures.

<sup>11</sup>The results are similar if we use the minimum or maximum value. Some studies match children to either mothers or fathers (e.g., Asher, Novosad, and Rafkin (2020)). Others, like we do, take the average (e.g., Hilger (2017)), while some take the highest value (e.g., Geng (2018)). Taking the mean, maximizes coverage; see also Davis and Mazumder (2020a) who use data from surveys where children are matched to either mothers or fathers to maximize coverage. As we show below, we obtain similar results, albeit in a smaller sample, when we use children matched to their parents only.



hover between 82% – 91%. Appendix Figure B.1 portrays the distribution of cohabitation rates across countries and regions for Christians, Muslims, and Animists. Differences are small.

### 3 Religious IM across African Countries

#### 3.1 Descriptives

Table 2 reports the newly compiled statistics reflecting absolute educational IM for Christians, Muslims, and Animists across 20 African countries. Columns (1)-(7) report upward IM statistics that reflect the likelihood that children born in the 1980s and 1990s, whose parents have not completed primary education, manage to complete primary school. Columns (8)-(14) give downward IM measures, the share of children from parents with completed primary education, who fail to reach this educational milestone. There are remarkable differences in educational mobility across religious groups (Appendix Table C.3 reports the correlation matrix).

**Table 2:** Country-group-level estimates of IM, ages 14-18

country	upward IM							downward IM						
	(1) overall	(2) Christian	(3) Muslim	(4) Traditional	(5) $\Delta(c - m)$	(6) $N_{dist}^{10+}$	(7) $s(c > m)$	(8) overall	(9) Christian	(10) Muslim	(11) Traditional	(12) $\Delta(c - m)$	(13) $N_{dist}^{10+}$	(14) $s(c > m)$
Botswana	0.798	0.822	0.556	0.699				0.085	0.083	0.027	0.076		1	0.0
South Africa	0.731	0.74	0.874	0.764		34.0	0.324	0.105	0.106	0.04	0.182		37	0.162
Egypt	0.673	0.679	0.673			187.0	0.775	0.052	0.048	0.052			186	0.634
Cameroon	0.613	0.739	0.424	0.481		113.0	0.867	0.056	0.042	0.196	0.185		107	0.738
Nigeria	0.612	0.786	0.466	0.229		14.0	0.786	0.096	0.078	0.162	0.0		15	0.667
Ghana	0.557	0.654	0.468	0.263		108.0	0.741	0.173	0.157	0.263	0.471		108	0.759
Togo	0.526	0.641	0.534	0.382		34.0	0.765	0.19	0.165	0.214	0.361		30	0.633
Zambia	0.439	0.446	0.484	0.449		6.0	0.5	0.253	0.25	0.221	0.262		6	0.667
Uganda	0.4	0.404	0.485	0.019		122.0	0.377	0.29	0.295	0.257	0.641		121	0.488
Benin	0.298	0.415	0.214	0.213		58.0	0.759	0.292	0.274	0.308	0.469		50	0.5
Mozambique	0.287	0.324	0.207	0.366		47.0	0.638	0.249	0.225	0.314	0.22		41	0.634
Mali	0.274	0.395	0.273	0.187		57.0	0.754	0.237	0.219	0.237	0.491		47	0.532
Sierra Leone	0.261	0.319	0.248	0.091		82.0	0.854	0.332	0.257	0.385	0.6		81	0.802
Senegal	0.244	0.527	0.235			22.0	1.0	0.264	0.163	0.274			22	0.773
Liberia	0.222	0.218	0.266	0.103		20.0	0.4	0.538	0.537	0.544	0.632		18	0.444
Burkina Faso	0.191	0.332	0.182	0.072		44.0	0.955	0.235	0.199	0.269	0.569		42	0.81
Guinea	0.182	0.229	0.181	0.138		14.0	0.929	0.439	0.5	0.418	0.724		14	0.286
Rwanda	0.181	0.183	0.274	0.077		21.0	0.238	0.543	0.541	0.489			19	0.632
Malawi	0.133	0.143	0.096	0.095		109.0	0.716	0.512	0.503	0.616	0.556		90	0.711
Ethiopia	0.116	0.138	0.082	0.017		58.0	0.759	0.344	0.323	0.481	0.8		52	0.731

This table reports upward and downward IM measures for the 1980s cohort (the cohort with the broadest coverage) for individuals aged 14-18 by country and major religious group. Because of the timing of the censuses, we use the 1990s cohort for Liberia, Mali, Nigeria, and Togo as for those countries we do not observe 14-18 year old individuals born in the 1980s. Columns (1) - (4) show the estimates for country-cohort-level upward IM, columns (8) - (11) the respective statistics for downward IM. Columns (1) and (8) give the country-level estimates across all groups, columns (2) - (4) and (9) - (11) give estimates by group. Columns (5) and (12) show the differences between Christians and Muslims. Red bars indicate a negative difference, green bars a positive difference. Column (6) gives the number of districts for which we have at least 10 observations with upward IM from individuals aged 14-18 in the 1980s birth cohort (1990s for Liberia, Mali, Nigeria and Togo) for both Muslims and Christians and column (13) gives the corresponding number of districts for downward IM. Column (7) reports the share among these districts where Christians have higher upward IM than Muslims, and column (14) the share of districts where Christians have lower downward IM.

##### 3.1.1 Upward IM

Upward mobility is the lowest for Africans adhering to indigenous religions. In most countries, upward IM for Animists appears abysmally low; for example, it is less than 10% in Uganda, Sierra Leone, Rwanda, Malawi, and Ethiopia. Upward IM is low for Animists, even Benin, Burkina Faso, and Togo, where their share is close or exceeds 20%.

Upward IM is higher for Christians in almost all countries. Muslims fare better in South Africa, Zambia, and Rwanda, where their share is tiny, around 0.5% – 1.5% (see Table 1 for religion shares). Muslims fare better in just two countries, where their share exceeds 10%, Uganda and Liberia (about 12%). In these two countries, Muslim children whose parents have not completed primary education have a 5% – 8% higher likelihood of finishing primary school than Christians.

The Christian-Muslim upward IM gap is considerable in many countries. A notable case is Nigeria, where children born to illiterate Muslim parents are 32 percentage points less likely to complete primary schooling compared to children born to similarly illiterate Christian parents (78.6% versus 46.6%). Even in countries where the Christian-Muslim gap appears modest, in relative terms, it is substantial. In Ethiopia, upward IM for Christians is 13.8%, while for Muslims it is 8.2%. Not only do Christians fare better on average, but they do so in most regions. For example, in Cameroon, upward IM for Christians is higher than Muslims in 98 out of the 113 districts (where we have more than 10 families of each religious affiliation). In the predominantly Muslim Senegal, Muslims have a lower upward IM than Christians in all districts. The corresponding share exceeds 70% in 12 countries, almost all of them in Western Africa.

### 3.1.2 Downward IM

There are considerable differences in downward IM, though these are smaller than upward IM. In most countries, downward IM is the highest for the children of Africans adhering to local religions. Christian-Muslim differences are the largest in Cameroon, downward IM is 4.1% for Christians, but 19.6% for Muslims. Downward IM for Nigerian Muslims is twice as large as for Christians (16.2% vs 7.8%). The gap exceeds 10 percentage points in Sierra Leone, Malawi, Ethiopia, and Senegal. In Togo, Benin, Mali, and Liberia, the gap is small favouring the Christian population. In Rwanda, Guinea, South Africa, and Uganda, there is a small gap favouring Muslims.

## 3.2 Further Evidence

We also constructed religious IM measures distinguishing by gender. The descriptive statistics, reported in Appendix Table C.2, reveal some auxiliary patterns. First, in Nigeria, the religious IM gap is around 40 percentage points for girls, while for boys, it is 30. Second, compared to other regions, the Christian-Muslim gap in upward IM for girls is larger in Western African countries and in Mozambique.

We also derived IM statistics matching young individuals aged 14 – 25 to the previous generation. In doing, we double the sample size (from about 6.3 to 11.4 million observations), while co-residence rates are roughly 70%. Appendix Table C.1 gives the IM statistics. The correlation of upward and downward IM across the two age brackets exceeds 0.95, and, consequently, the patterns are similar.

## 3.3 Correlational Analysis

We explored the cross-country correlates of religion-specific IM - and the religious IM gap- looking at historical and religious composition attributes linked to the economic, political, and institutional environment. As the sample is small, we report and discuss them in the Appendix Section C (Appendix Figure C.1). Upward IM is lower for all religious groups in less prosperous countries. Muslims, Animists, and Christians fare better in former British colonies and countries with relatively larger European settlements

during colonization; Muslims and Animists gain somewhat more and consequently, the religious gap is smaller in these countries. IM is lower for all religious groups in countries where a large share of the population belongs to ethnicities partitioned by the colonial borders. Proxies of Africa’s slave trades also correlate negatively with IM for all religious groups, a bit more for Muslims. The Christian-Muslim IM gap does not correlate with religious fractionalization, but it does correlate with religious segregation. We return to these issues below at the regional analysis.

## 4 Explaining the Religious Educational Mobility Gaps

The goal of this Section is to uncover the features that explain the variation in religion IM gaps. We distinguish between family/household characteristics (including size, presence of grandparents, mother and father age of birth), economic attributes of the old generation (like profession, industry of employment), and regional factors.

### 4.1 Approach

We run individual-level OLS specifications of the following form:

$$\text{IM}_{ibchdt}^{rel} = \alpha_{cb} + \gamma_m \text{Muslim} + \gamma_a \text{Animist} + \delta_h H'_h + \theta_h I'_h + \phi_d + \epsilon_{ibchdt}. \quad (1)$$

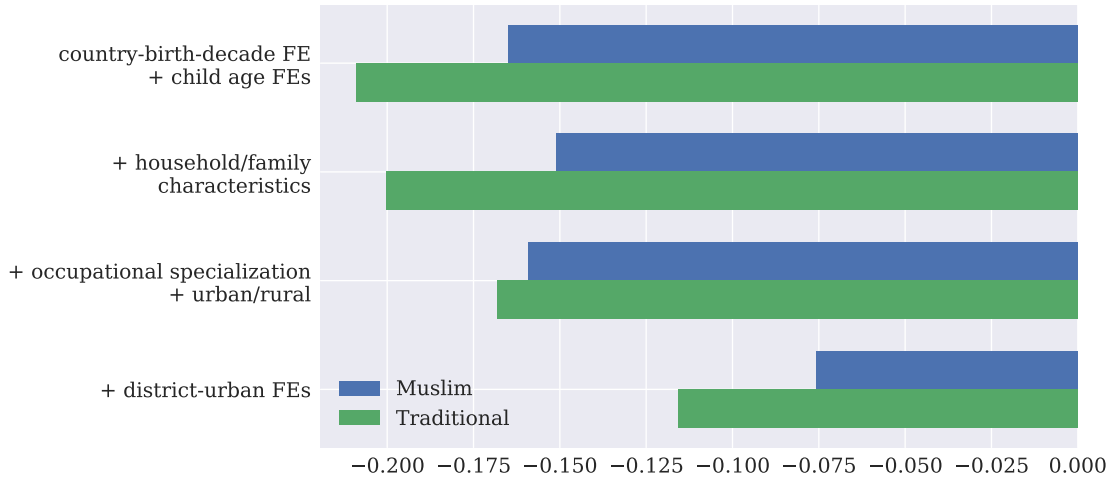
The dependent variable denotes (upward or downward) IM for child  $i$  between 14 and 18 years old, of religious affiliation  $rel$ , born in decade  $b$  in household  $h$ , residing in district  $d$  in country  $c$ , as recorded in census in year  $t$ . *Muslim* is an indicator that takes the value of one for those adhering to Islam, while *Animist* identifies children of Animist-Traditional religious background. We drop individuals of Other Religions and No Religion since these include non-comparable religious denominations across censuses and countries. Thus,  $\gamma_m$  reflects the intergenerational educational gap between Christians and Muslims and  $\gamma_a$  the IM gap between Christians and Animists.

We investigate how  $\gamma_m$  and  $\gamma_a$  change as we augment the specification with household structure features ( $H'$ ), income/occupation proxies ( $I'$ ), and district (admin-2/3) fixed effects ( $\phi_d$ ) that capture all time-invariant regional aspects related to mobility. We run the regression weighting observations by a country’s population to account for differences in IPUMS coverage. We also report country-specific results.

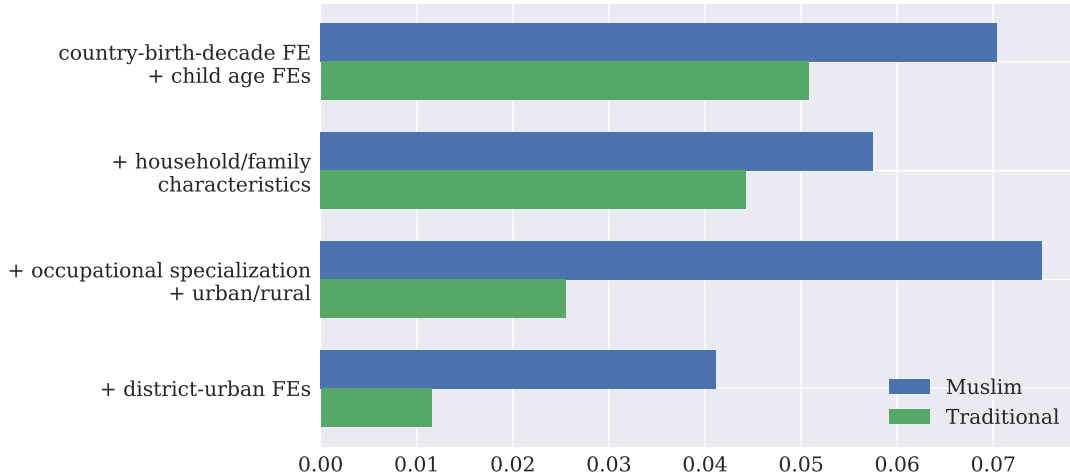
Figure 2 reports the coefficient on the Muslim (blue bar) and the Animist/Traditional (green bar) indicators as we add these features sequentially. Panel (a) looks at upward IM, while panel (b) at downward IM.

**Figure 2: Individual-level Religious IM Gap Drivers**

(a) Upward IM



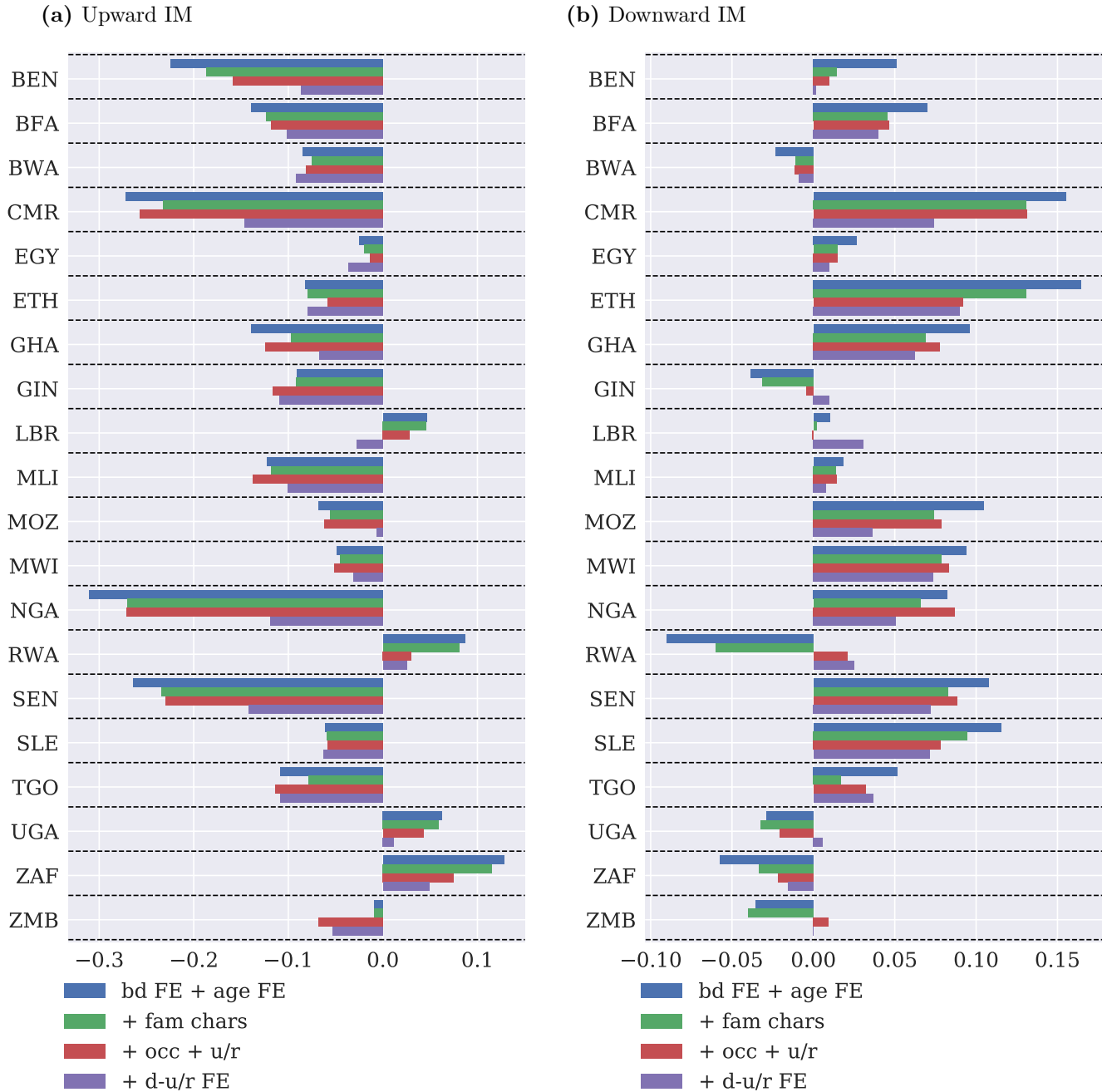
(b) Downward IM



The figure shows how the Christian-Muslim (blue bars) and the Christian-Animist (green bar) differences in upward IM (panel (a)) and downward IM (panel (b)) change as we add controls for household and family structure (model (2)), parental occupational specialization, industry of employment, and rural-urban residence (model (3)), and district  $\times$  rural/urban fixed effects (model (4)). The bars on the top (model (1)) reflect the baseline inter-religious differences in IM, simply conditioning on country-birth-cohort fixed effects and age constants. The sample consists of Muslim, Animist, and Christian young individuals (14-18 years), matched to the previous generation in the household. The figure gives weighted linear probability model (OLS) estimates using countries' 1980 population for the weighting to account for differential IPUMS sampling/coverage across countries. The upward IM regressions are run in sample of 4,541,531 young individuals, who cohabit with older generation members without completed primary education and the downward IM regressions in a sample of 1,588,974 young individuals cohabitating with older generation members with completed primary education.

The top bars report for reference the religious IM gaps, simply conditioning on country-birth-cohort fixed effects and children age constants. On average, Christian boys and girls, belonging to households where the old generation has not completed primary education, enjoy a much higher likelihood of completing primary school than Muslims (16pps) and Animists (21pps) in the same country. Conversely, children of Muslim and Animist households, whose parents have completed primary education, have a 5pps and 7pps lower chance to do the same than Christian children of the same cohort in the same country. Figure 3 reports the Muslim-Christian gap in upward and downward mobility for each country separately (Appendix Figure D.9 reports Christian-Animist differences).

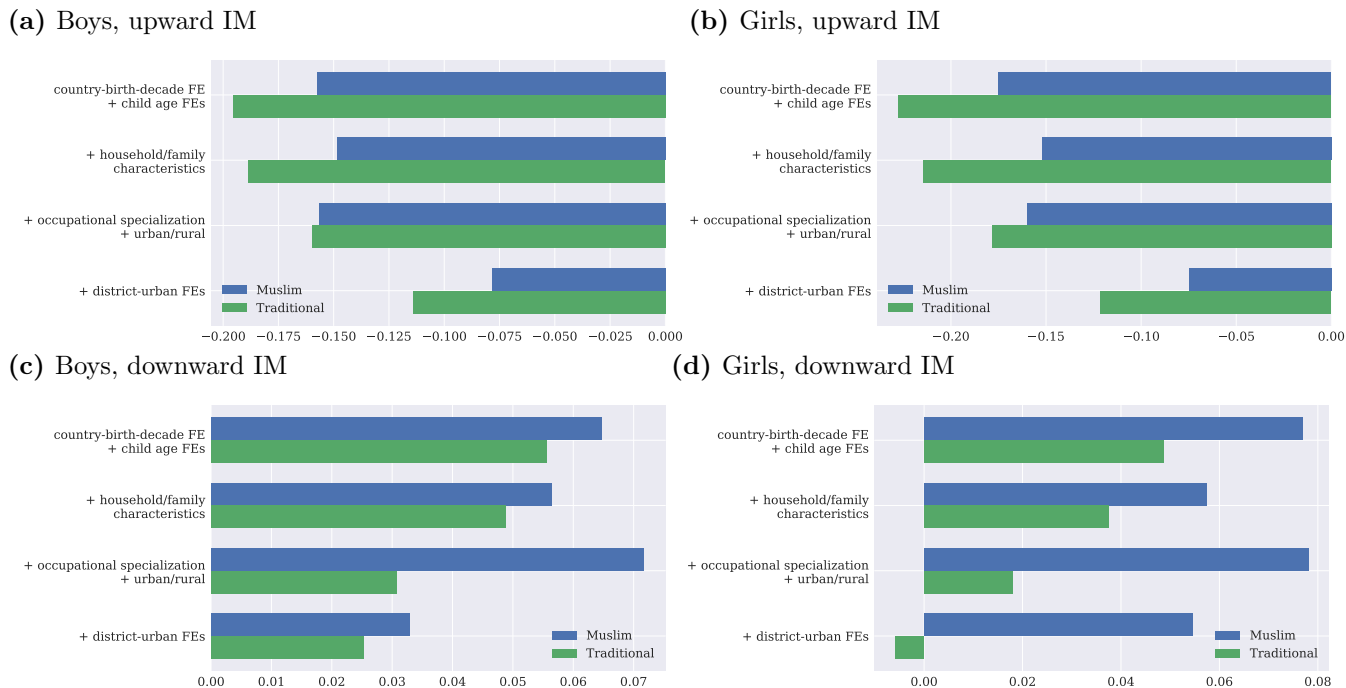
**Figure 3: Individual-Level Religious IM Gap Drivers, by Country**



The figure shows how the Christian-Muslim differences in upward IM (panel (a)) and downward IM (panel (b)) change as we add controls for the household structure (model (2), in green), parental occupational specialization, industry of employment, and rural-urban residence (model (3), in red), and district x rural/urban fixed effects (model (4), in purple) for each country. The bars on the top (model (1), in blue) reflect the baseline inter-religious differences in IM, simply conditioning on birth-cohort fixed effects and age constants. The sample consists of Muslim, Animist, and Christian young individuals (14-18 years old), matched to the previous generation in the household. The figure gives linear probability model (OLS) estimates.

Figure 4 plots the corresponding estimates distinguishing by kids' gender.

**Figure 4: Individual-level Religious IM Gap Drivers, by Gender**



The figure shows how the Christian-Muslim (blue bars) and the Christian-Animist (green bar) differences in upward IM (panel (a) and (b)) and downward IM (panel (c) and (d)) change as we add controls for the household structure (model (2)), parental occupational specialization, industry of employment, and rural-urban residence (model (3)), and district x rural/urban fixed effects (model (4)). The bars on the top (model (1)) reflect the baseline inter-religious differences in IM, simply conditioning on country-birth-cohort fixed effects and age constants. Panels (a) and (b) look at 14 – 18 years old males. Panels (b) and (d) look at 14 – 18 years old females. The sample consists of Muslim, Animist, and Christian young individuals, matched to the previous generation in the household. The figure gives weighted linear probability model (OLS) estimates using countries’ 1980 population for the weighting to account for differential IPUMS sampling/coverage across countries. The upward IM regressions are run in a sample of 2,410,176 (young boys) and 2,131,333 (young girls) individuals, who cohabit with older generation members without completed primary education. The downward IM regressions are run in a sample of 787,324 (young boys) and 801,648 (young girls) individuals, who cohabit with older generation members with completed primary education or higher.

## 4.2 Family Structure and Household Features

### 4.2.1 Thesis

We commence the analysis by examining the role of family structure in shaping the IM gaps. Empirical works, narratives, and case studies document considerable differences in living arrangements and household features between Christians, Muslims, and Africans adhering to indigenous religions.<sup>12</sup> The vector of household/family features ( $H'$ ) includes: (i) Household size variables as they may impact human capital accumulation.<sup>13</sup> We distinguish between the young household members, the generation corresponding to that of the household head (e.g., parents, aunts, and uncles), and two generations earlier (e.g., grandpar-

<sup>12</sup>For example, polygamy appears more common among Muslims and Animists (e.g., Fenske (2015)). Lineage structure and co-residence with distant relatives is higher for Muslim groups and clans (Moscona, Nunn, and Robinson (2020)). Muslims and Animists marry, on average, earlier, particularly girls. Caldwell and Caldwell (1987) discuss the cultural context, including religion, of fertility in Sub-Saharan Africa; Heaton (2011) presents an overview of Muslim-Christian differences across 30 African, Asian, and Latin American countries; and Jones (2006) discusses the demographics of Muslim communities.

<sup>13</sup>Overall, the literature in demography and economics provides inconclusive associations between family structure and education in Africa (e.g., Lloyd and Blanc (1996), Townsend et al. (2002)). Likewise, the family size - schooling link is quite heterogeneous across Africa (Eloundou-Enyegue and Williams (2006), driven by deeper cultural aspects and the economic environment (e.g., Ashraf et al. (2020)). For example, grandparents often contribute to their grandchildren education (e.g., Schrijner and Smits (2018)).

ents). We also add a dummy variable for multi-generational households, i.e., those comprising three or more generations. *(ii)* Indicator variables of children’s relationship to the household head (e.g., biological children and nephews). *(iii)* Family organization indicators (e.g., father and mother, father/mother only, others only, mother/father/both and other); *(iv)* Mother’s and father’s age at their offspring birth, to capture Muslims’ and Animists’ tendency to marry and have children earlier.

As we show in Appendix Section D, there are meaningful differences in household and family features across religious groups. Muslim and Animist households are on average larger, more likely to host grandparents, relatives of parents (uncles, aunts), and children’s cousins. Regarding the relationship to the household head of a 14-18 year-old individual, he/she is equally likely to be head’s child in both Muslim and Christian households. Muslim girls are more likely (by 2 percentage points) to be spouses of the household head. Besides, Muslim and Animist mothers and fathers are younger when their children were born, reflecting the earlier marriages.

## 4.2.2 Results

The second set of bars in Figure 2 reports the coefficients when we estimate regression equation (1) with the full set of household/family structure controls.<sup>14</sup> The religious gap in upward IM drops by roughly 12%, from 0.17 to 0.15 when we compare Christians to Muslims and from 0.22 to 0.20 for Animists. Likewise, downward IM differences between Muslims or Animist and Christians are little affected by the inclusion of the rich set of family/household controls (0.07 to 0.058 for Muslims and 0.05 to 0.045 for Animists). Notably, children of educated Animist parents are considerably less likely to fail to complete primary schooling compared to Muslims, although education is higher for Muslims.

The country-specific analysis in Figure 3 further shows that household structure differences play a somewhat bigger role in explaining the upward and downward IM Christian-Muslim gap in West Africa (Benin, Cameroon, Ghana, Nigeria, Togo, and Senegal); their influence is negligible in Ethiopia and most of East and Southern Africa.

A couple of interesting patterns emerge when we distinguish by gender (Figure 4). On the one hand, household and family structure play no role in explaining the religious gap in upward IM for boys, while it explains roughly 10% of the male downward IM gap. On the other hand, family arrangements play a more significant role in female IM differences. The gap in downward mobility drops from 0.08 to 0.06; household size, family structure, and age of marriage appear important in explaining why Muslim girls from educated family backgrounds appear less likely to complete primary education.

## 4.3 Occupational Differences

### 4.3.1 Thesis

We then examine the role of economic features in explaining differences in IM across religious groups. These aspects have been explored in parallel works on IM in other settings (Chetty et al. (2014)) in the United States and Asher, Novosad, and Rafkin (2020) in India). In particular, we examine the role of

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<sup>14</sup>We include all indicators concurrently, setting aside multicollinearity concerns, as our objective is not to identify the family feature most relevant for IM, but to examine how much the Muslim and Animist indicators decline in absolute value when we account for a saturated set of household and family traits. More parsimonious specifications yield similar patterns.

(i) urban/rural residence, as Alesina et al. (2020) document that upward IM is considerably higher and downward IM lower in urban settings (see also Young (2013)); (ii) industry of employment; and (iii) occupational specialization, as many studies show sizable intergenerational inertia in these aspects (e.g., Long and Ferrie (2013) long-term analysis in the US and the UK).

In Appendix Section D, we tabulate within-country differences in these features between Christians, Muslims, and Animists. Africans adhering to local religions are more likely to reside in rural locations (20%), but there are no rural-urban differences between Christians and Muslims. Animists are considerably more likely to work in agriculture at the expense of employment in services. The difference is substantial, 20*pps* and about 10*pps* when comparing individuals in the same region. Muslims appear more (less) likely to work in agriculture (services) than Christians, but differences are small, about 5*pps*. Muslim-Christian differences in the occupational specialization are small for all categories, but professionals, a small share of the African population (less than 5%). Animists are less likely to work in services, sales, and as professionals and more likely to work as fishery workers. But differences are small and become smaller when we exploit within-district variation.

### 4.3.2 Results

The industry of employment, occupational specialization, and rural/urban residence explain a non-negligible component of IM differences between Christians and Animists, partly reflecting differences in urban/rural status and agriculture/service employment. The gap in upward IM drops from 0.21 to 0.16 and in downward IM from 0.05 to 0.025. These patterns apply both to boys and girls.

In contrast, these economic features play no role in explaining the Christian – Muslim gap in upward and downward intergenerational mobility, as there are small differences between the two groups. This applies both to boys and girls. The country-specific analysis further stresses the irrelevance of economic factors in explaining the sizable disparity in IM between Christians and Muslims. In some countries, accounting for economic differences even increases the religious IM gap.<sup>15</sup>

## 4.4 Regional Features

In Alesina et al. (2020) we uncover large differences in educational mobility across districts. At the same time, Alesina and Zhuravskaya (2011) document that African countries' have among the highest levels of religious segregation.<sup>16</sup> We, therefore, examine the role of regional factors explaining the religious IM gaps augmenting the specification with district fixed effects, interacted with urban indicators (this does not affect the estimates).

Let us start with the estimate on the Animist indicator. Regional features explain a non-negligible portion of the gap between Christians and followers of traditional religions. The upward IM coefficient drops from 0.17 to 0.12 (Figure 2); the decline is of similar magnitude for boys and girls (Figure 4, panels (a)-(b)). Accounting for residence brings the gap in downward IM between Animists and Christians to a mere 1*pp*; for girls, the gap is eliminated (slightly reversed), while for boys, it drops to 2.5*pps*.

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<sup>15</sup>Chetty et al. (2020b) show that differences in household wealth do not explain African American - Whites differences in income IM in the United States.

<sup>16</sup>Nigeria has the highest level of religious segregation in the Alesina and Zhuravskaya (2011) statistics, alongside Tanzania, which is not in our sample. They are followed by Kenya (not in our sample), Guinea, Ethiopia, Benin, and Burkina Faso. Dowd (2014) presents evidence that religious segregation rather than diversity explains tolerance in Nigeria.



Accounting for regional features halves the Christian-Muslim gap, from about 0.15 to 0.075 in upward IM and from 0.08 to 0.04 for downward IM (Figure 2). This applies equally to boys and girls (Figure 4).<sup>17</sup> The country-specific analysis yields some auxiliary results. Regional differences are chief in explaining Muslim-Christian mobility gaps in many countries, particularly in West Africa and Mozambique. In Benin, Cameroon, Ghana, and Senegal, the Christian – Muslim gap in upward mobility halves. In Nigeria, the upward IM drop is more pronounced, from 0.30 to 0.10. These are all countries with high religious segregation. In Mozambique, the upward IM gap goes from 0.08 to nil once we explore within-district variation.

#### 4.5 Further Evidence and Sensitivity Checks

We performed various tests to explore the robustness of these regularities (see Appendix Figures D.7-D.8). First, the patterns are similar when we restrict estimation to boys and girls matched to biological parents (i.e., dropping other older generation relatives and instances of young females married to the household head). Second, these results also apply when we exploit within-ethnicity variation in religious affiliation (though the sample drops as we miss ethnicity information in Cameroon, Egypt, Guinea, Nigeria, and Rwanda). When we account for the respondent’s ethnic identity, regional features play a lesser role, reflecting African ethnicities’ spatial concentration. Nevertheless, even when we compare young children born to parents without any education, who make their living working in the same sector, facing similar household structure, residing in the same urban or rural part of a district, and belonging to the same ethnicity, Muslim adherents are still *4pps* less likely to finish primary compared to Christians.

#### 4.6 Taking Stock

The analysis revealed four main results. First, the noticeable differences in the household structure between Muslims and Animists, on the one hand, and Christians, on the other, explain only a small fraction of the considerable differences in educational mobility. Second, the industry of employment, occupational specialization, and urban/rural residence play no role in explaining the Christian-Muslim gaps in mobility, as there are small religious differences in these features. However, occupational differences explain a moderate portion of the IM gaps between Christians and Africans adhering to local religions. Third, regions matter crucially, explaining roughly half of the religious differences in IM. District-specific constants explain a large fraction of educational mobility in West Africa, where religious segregation appears the highest. Fourth, religious differences in (mostly upward) educational mobility persist even when we compare young boys and girls within the same (rural or urban part of an) administrative region, of similar household characteristics in terms of size, structure, and occupational background.

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<sup>17</sup>Conversely, Asher, Novosad, and Rafkin (2020) find that state and regional factors explain little of the considerable gaps in relative educational IM in India.

## 5 Regions' Causal Effects on Intergenerational Mobility for Christians, Animists, and Muslims

The prominence of regions in the sizable IM gaps between Christians and Muslims (and Animists) begets a series of questions ranging from the regions' causal impact on the IM of different denominations to unpacking the specific regional characteristics that account for the observed IM gaps. In this section, we address the former question (and in the next section we delve into the latter) exploring whether: (i) regions' independent effect on IM varies across people of different faiths; and (ii) the degree that households of different faiths sort to exploit educational opportunities.

To isolate *regional childhood exposure* effects from *spatial sorting*, we employ the intuitive approach of Chetty and Hendren (2018a) that exploits differences in the timing of children's moves across districts with different levels of upward mobility. We adjust the framework, implemented in the African context by Alesina et al. (2020), to derive religion-specific regional exposure effects (as Chetty et al. (2020b) do in their race analysis of IM in the United States). We first lay down the semi-parametric specification and discuss identification. We then report the baseline results, alongside some auxiliary results.

### 5.1 Empirical Design

#### 5.1.1 Semi-Parametric Specification

The specification relates primary education completion for child,  $i$ , of birth-cohort,  $b$ , whose parents have not completed primary school (upward IM), who moved from birthplace district  $o$  in country  $c$  to destination district  $d$  at age  $m$ , to differences in upward IM between origin and destination, among non-movers of cohort  $b$  ( $\Delta_{odb} = \widehat{\text{IM}}_{bd}^{\text{nm}} - \widehat{\text{IM}}_{bo}^{\text{nm}}$ .)

$$\begin{aligned} \text{IM}_{ihbmcod}^{\text{rel}} = & \alpha_{ob} + \alpha_m + \sum_{m=1}^{18} \beta_m^{\text{rel}} \times \mathbb{I}(m_i = m) \times \Delta_{odb}^{\text{all/rel}} \\ & + \sum_{b=b_0}^B \kappa_b \times \mathbb{I}(b_i = b) \times \Delta_{odb}^{\text{all/rel}} + \epsilon_{ihbmcod}, \end{aligned} \quad (2)$$

$\widehat{\text{IM}}_b^{\text{nm}}$  summarizes the economic, social, and institutional environment that shapes educational decisions in origin and destination. We use both an overall measure of origin-destination differences in upward IM ( $\Delta_{odb}^{\text{all}}$ ) and religion-specific differences ( $\Delta_{odb}^{\text{rel}}$ ). Origin-region  $\times$  birth-decade fixed effects,  $\alpha_{ob}$ , account for unobserved factors of the child's cohort and birthplace. Following Chetty and Hendren (2018a), we add interactions of destination-origin-cohort IM differences with cohort effects, to account for potential differential measurement error across cohorts and other trends (this has no effect). The parameters of interest,  $\beta_m^{\text{rel}}$ , capture how children's attainment varies with the age of their move to districts with higher or lower mobility (among non-movers), conditional on age-of-move fixed effects,  $\alpha_m$ , that capture disruption and other age-specific features affecting education.

If regions matter for upward mobility, then the earlier the move, the greater the impact. As the specification includes origin-cohort constants, the variation comes from children born in the same place in

the same decade who move to regions with different levels of upward IM. Differences in the age-of-move slopes,  $\beta_m^{rel} - \beta_{m+1}^{rel}$ , reflect the impact on attainment of an extra year in the high versus low mobility district; *regional childhood exposure effects*. We allow for different slopes across Muslims, Animists, and Christians to explore whether regional childhood exposure effects vary by religious affiliation.

### 5.1.2 Identifying Assumptions

As detailed in Chetty and Hendren (2018a), the main identifying assumption is that the *timing* of the household’s move is unrelated to children’s unobserved ability. In Alesina et al. (2020) we present various tests in support of this assumption. We estimate within-household specification comparing siblings to account for family features, related, among others, to the parental valuation of education. We also look at moves taking place in periods of abnormal outflows from origin districts (pull shocks). Also, we project moves based on historical migration patterns to account for potentially endogenous choice of destination related to children’s unobserved ability. In this Section, we take as granted the validity of the empirical design and explore heterogeneity of regional childhood exposure effects and spatial sorting across people of different faiths.

## 5.2 Results

We work with a sample of 13 countries (264,401 observations in the age group 14 – 25) where IPUMS also records birth region and years in the current residence (Appendix Table B.1).<sup>18</sup>

Figure 5 plots  $\hat{\beta}_m^{rel}$  for Christians and Muslims against the child’s age at the time of the move. Origin-destination differences in upward IM are calculated using all non-movers, independently of religious affiliation,  $\Delta_{odb}^{nm,all}$ . Hence, the estimates reflect how primary education completion differs across religious affiliation compared to all residents in origin and destination. [We report the estimates for Animists in Appendix Section E; as the sample of moving Animists is small and as this category blends heterogeneous religions, the estimates are somewhat imprecise.]

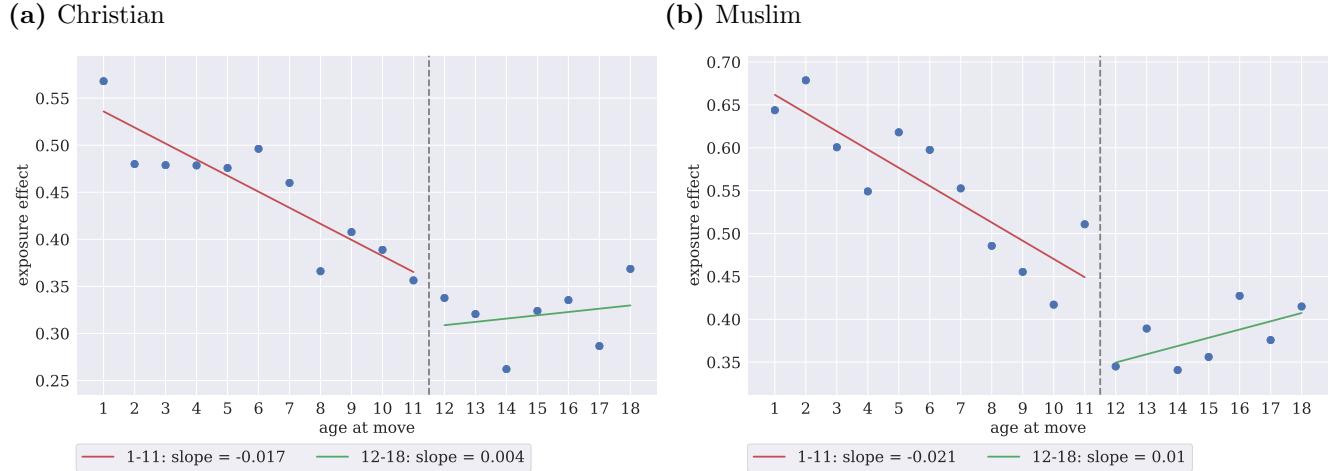
The figure uncovers two main and two auxiliary results. First, the age-of-move slopes,  $\hat{\beta}_m^{rel}$ , are large for early-in-life moves and decline until approximately the age of 12. This pattern that applies to all religious groups implies “*regional childhood exposure effects*”. The relationship between age at move and exposure effects is negative and approximately linear: moves in high (low) mobility districts are especially beneficial (detrimental) for younger kids. *Regional childhood exposure effects*,  $\gamma_m = \hat{\beta}_{m+1}^{rel} - \hat{\beta}_m^{rel}$ , are similar across religious affiliations, roughly 0.02. For every additional year before 12, a child of illiterate parents sees her chances for completing primary increase by roughly 2 percentage points.<sup>19</sup> Importantly, children of both religions benefit (lose) from early moves into high (low) upward mobility regions. If anything, the regional exposure effects for Muslims [0.021] is somewhat higher than Christians [0.017]. The estimate for Animists is 0.019.

<sup>18</sup>The countries are Benin, Cameroon, Egypt, Ethiopia, Ghana, Guinea, Mali, Malawi, Rwanda, Togo, Uganda, South Africa, and Zambia. For some countries, birth is at admin-1 level, whereas residence is at admin-2 level. In other countries, region of residence and birth are at the same level. We harmonized residence and birth region at the finest level. In total, there are 815 unique birth-regions and 815 unique destination regions.

<sup>19</sup>In Alesina et al. (2020), we estimated a somewhat larger causal impact of regions for an extra year before 12 of about 0.027 in a considerably larger sample. We also found a steeper impact for moves between 5 and 11.

Second, the age-specific slopes are significantly positive even for children who move after the age of 12 – 13. Since moves after that age are unlikely to affect primary education, these estimates uncover *selection effects*. Muslim children moving to regions where permanent residents have one percentage point higher upward IM, have a 40pps higher likelihood to complete primary education, due to spatial sorting; the corresponding estimate for Animists is 60pps, implying stronger selection, as compared to Christians, 30pps.

**Figure 5:** Regional Childhood Exposure Effects on Educational Mobility, Semi-parametric Estimates, Overall  $\Delta_{odb}^{all}$



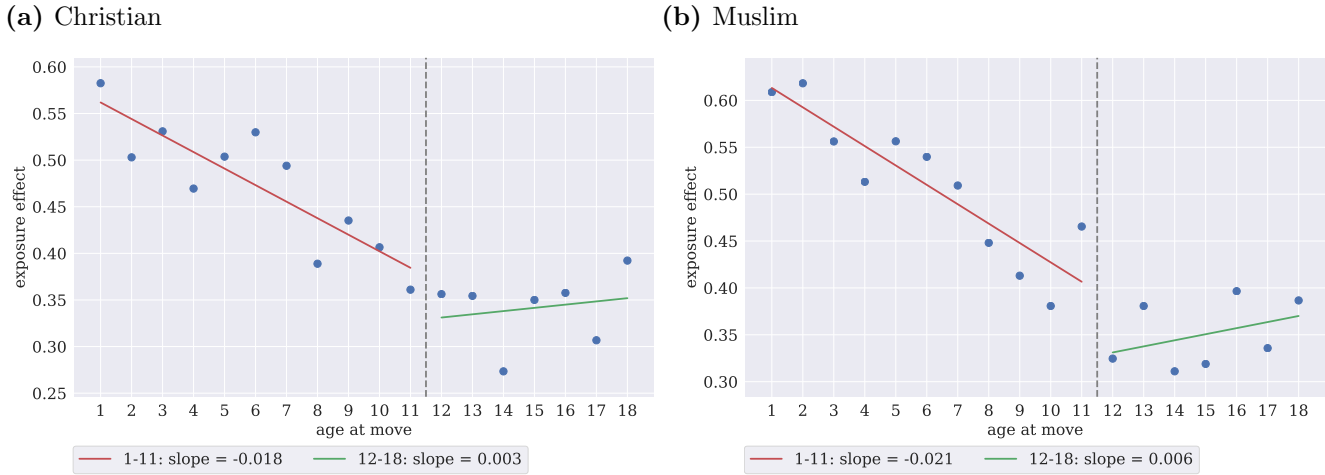
The figures show estimates of childhood regional exposure effects of upward intergenerational mobility (IM). The figures plot age-of-move slopes on differences in upward IM (blue circles), estimated among all non-movers (of all religious denomination) between origin and destination district ( $\Delta_{odb}^{all}$ ) against the child’s age when the household moved. The dependent variable takes the value of one when the child of household where the old generation has not completed primary education does complete primary schooling (upward IM). Panel (a) gives estimates for Christians and panel (b) for Muslims. The dashed vertical line separates the data into moves before the age of 12 that are mostly relevant for primary education and after 12. The figures also give (unweighted OLS) regression fit of age-of-move slopes against the age of move before (red line) and after 12 years (green line). The slope represents estimates of annual childhood exposure effects. The Christian results are based on 139,055 individual observations; the Muslim results on 118,357 individual observations.

In Figure 6 we use religion-specific differences in upward IM between origin and destination. The childhood regional exposure effects are about 2% for Muslims and 1.8% for Christians. Extrapolating over 12 years of childhood, the estimates imply that Muslim children who move at birth to a district with a one percentage higher upward IM among old Muslims will pick up roughly 27% of this difference through region’s causal impact; regional exposure effects for Christians spending their first 12 years in the high upward IM for old Christians districts is only slightly lower, 24%.

### 5.3 Further Evidence and Sensitivity Analysis

Appendix Section E reports additional results. First, following Chetty and Hendren (2018a) we estimate a parametric version of equation (2) that imposes a piece-wise linear structure of age effects from 1 till 11 and from 12 to 18, finding again similar for Christians and Muslims regional childhood exposure effects. Second, we estimate family fixed effects parametric specifications that exploit variation in the time of move across siblings. Regional childhood exposure effects are roughly 2% for both Muslims and Christians. Third, we allowed for different age-of-move slopes across boys and girls. Exposure effects are strong for Christian and even larger for Muslim girls compared to boys (that are less precisely estimated).

**Figure 6:** Regional Childhood Exposure Effects on Educational Mobility, Semi-parametric Estimates, Own Religion  $\Delta_{odb}^{rel}$



The figures show estimates of childhood regional exposure effects of upward intergenerational mobility (IM). The figures plot age-of-move slopes on differences in upward IM (blue circles), estimated among non-movers of the same religious denomination between origin and destination district ( $\Delta_{odb}^{rel}$ ) against the child's age when the household moved. The dependent variable takes the value of one when the child of household where the old generation has not completed primary education does complete primary schooling (upward IM). Panel (a) gives estimates for Christians and panel (b) for Muslims. The dashed vertical line separates the data into moves before the age of 12 that are mostly relevant for primary education and after 12. The figures also give (unweighted OLS) regression fit of age-of-move slopes against the age of move before (red line) and after 12 years (green line). The slope represents estimates of annual childhood exposure effects. The Christian results are based on 138,603 individual observations; the Muslim results on 117,787 individual observations.

Fourth, we obtain a similar estimate when we drop multi-generational households and look solely at children matched to (biological) parents.

## 5.4 Taking Stock

The analysis reveals that regions matter causally for educational mobility. Although sorting is considerable, children whose families move earlier to areas where residents (of all faiths or their religion) have higher intergenerational mobility are more likely to complete primary schooling. Regional childhood exposure effects are of comparable magnitude for Christians and Muslims (and Animists).

## 6 Religious IM Gaps across African Regions

Given the prominence of regions explaining differences in educational mobility across religious lines, we attempt to unpack the features of regions that matter in this Section. First, we construct new IM statistics of upward and downward IM across 2,105 African regions by religious affiliation and map religious IM gaps. Second, we explore the regional correlates of the latter. Third, we zoom into the region's religious composition that turns out to be the most salient feature of the Christian-Muslim differences in educational attainment.

### 6.1 Mapping Religious IM and IM Gaps

In Figure 7 we map upward IM for Christians, Muslims, and Animists across African regions. In the median region, upward IM for Christians is 0.46, considerably higher than that of Muslims (0.32) and

Animists (0.2) [Appendix Table F.1 reports summary statistics]. There are wide spatial disparities for all religious groups. Muslims, Christians, and Animists do well in the same regions; the cross-region correlation between Christians and Muslims’ (Animists) IM around 0.60 – 0.65 [see Appendix Table F.2].

A consistent feature regards the differences in upward IM between Christians and Muslims (and Animists) in most regions. Figure 8 maps the gap in upward IM between Christians and Muslim (panel (a)) and Christians and Animists (panel (b)). The Christian-Muslim gap is quite large in West Africa and Ethiopia (in Appendix Figure F.3-F.2 we zoom into these regions).

## 6.2 Correlates of Religious IM and IM Gaps

In this subsection, we try to understand which regional features correlate with educational mobility across the three main religious groups and pinpoint the regional attributes that account for the uncovered variation in the religious IM gaps. We run specifications simply conditioning on country-birth-cohort fixed effects associating IM for Christians, Muslims, and Animists with variables characterizing regions’ geographical, historical, and at-independence traits. We also estimate models with the religious gap as the outcome variable. Drawing on research on the origins of African development (see Michalopoulos and Papaioannou (2020) for an overview) and our companion work (Alesina et al. (2020)), we distinguish between geographical/locational, historical, and at-independence features. [Appendix Section F.5 gives variable sources and definitions.]

### 6.2.1 Where do Christians, Muslims, and Animists Live?

Before reporting the results, it is instructive to examine whether there are systematic differences in the regional attributes of Christian, Muslim, and Animist residence. Appendix Figure F.1 reports tests of means for all variables we consider, conditional on country-birth-cohort fixed effects. On average, Muslims and Animists reside in less densely populated areas at the end of the colonial period and more agriculture-oriented regions than Christians. Besides, Muslims and Animists reside further away from the capitals and the coastline. They live in districts with lower colonial investments, i.e., further away from colonial railroads, roads, and Christian missions that provided education.

### 6.2.2 Correlates of religious IM

Figure 9 plots the (population-weighted) within-country-cohort standardized correlation (beta) coefficients between upward and downward IM with the various features. While these correlations do not have a causal interpretation, they allow characterizing the geography of religious IM across the continent.<sup>20</sup>

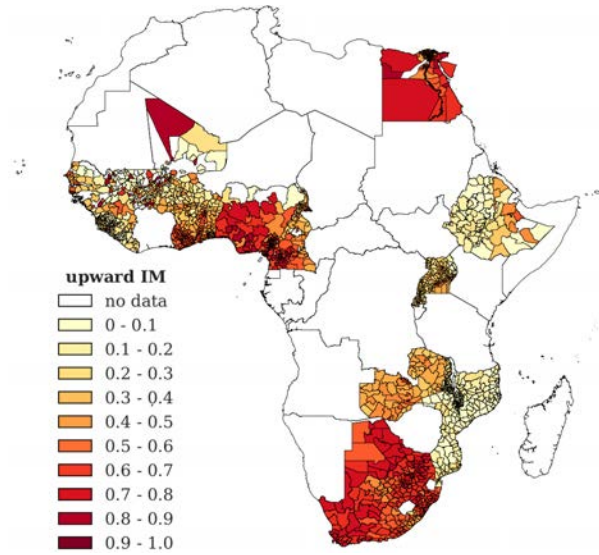
Let us start with the correlation between religious IM and proxies of at-independence regional development. Population density, region’s share of urban households, and employment in the ”modern” sectors (services and manufacturing), as compared to agriculture, are significant correlates of upward and downward IM. The correlations are equally strong for *all* religious groups, suggesting that Christians, Animists, and Muslims benefit *equally* in more developed regions.

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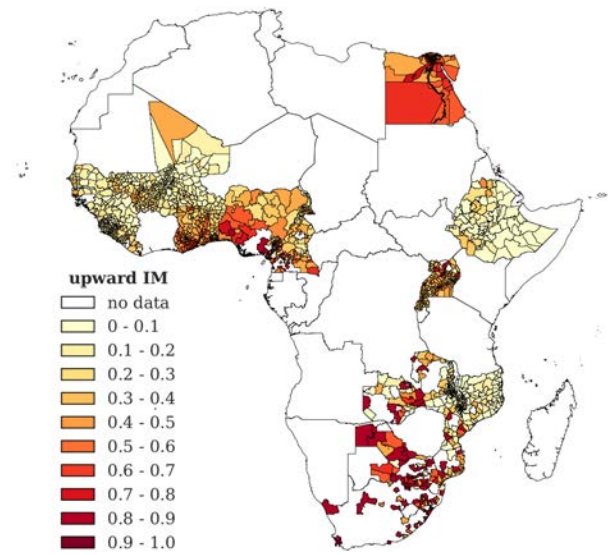
<sup>20</sup>The results are similar when we drop regions with relatively low cohabitation rates and/or North Africa (Egypt). We obtain similar estimates at the broader 14 – 25 aged young sample.

**Figure 7: Religious Upward IM across African Regions**

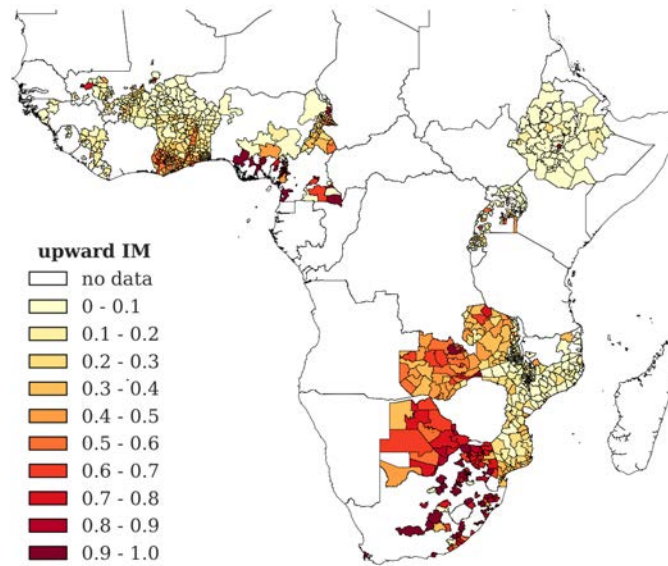
**(a) Christian**



**(b) Muslim**



**(c) Traditional**

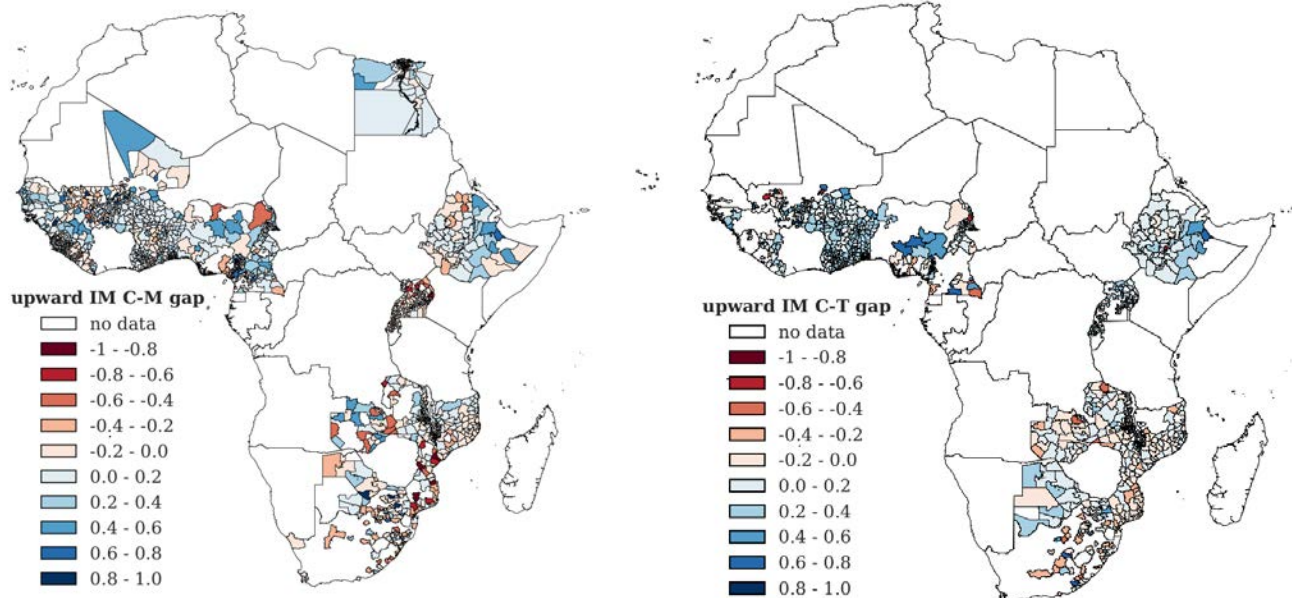


The figures plot upward IM for Christians (panel (a)), Muslims (panel (b)), and Africans adhering to traditional local religions (panel (c)) across districts (typically admin-2 and admin-3 regions). The maps are in a single, common-across-all-religious-groups scale to facilitate comparisons. Upward IM is grouped into 10 bins, with red(der) color indicating higher educational mobility and yellow(er) color indicating lower IM.

**Figure 8:** Religious IM Gaps across African Districts

(a) Christian-Muslim

(b) Christian-Traditional



The figures plot differences in upward IM between Christians and Muslims (panel (a)) and Christians and Africans adhering to traditional religions (panel (b)) across districts (typically admin2 and admin-3 regions). We estimate absolute upward IM for young individuals, aged 14-18, cohabiting with an older generation member in the household. We require at least 10 observations of each religious group for the calculation of the IM gaps.

Among the geographic-location correlates, distance to the capital, the coast, and the border are the strongest correlates of educational mobility. The standardized coefficients are quite similar for the three religious groups. The correlation between environmental features of malaria and upward (downward) IM is negative (positive) for all religious groups and somewhat stronger for African adhering to indigenous religions, who appear more sensitive to adverse health conditions.

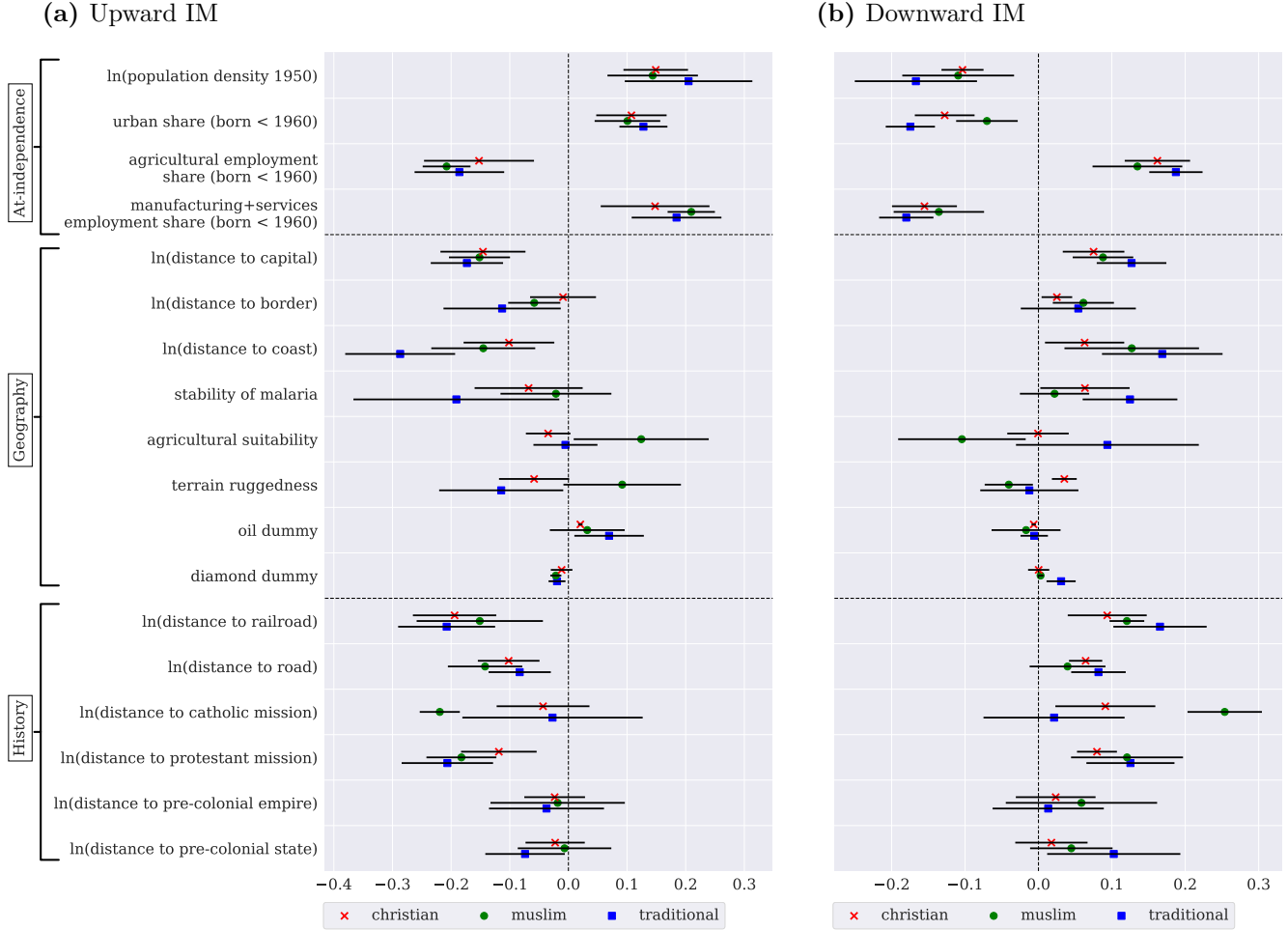
Turning now to the historical variables, the correlation between IM and proximity to colonial railroads and roads is equally strong for all three religious groups. Christians, Muslims, and Animists gain equally when close to the colonial transportation infrastructure network. The same pattern applies to proximity to Protestant missions. Distance to precolonial states does not correlate significantly with IM.

### 6.2.3 Further Evidence

We performed various checks to understand these patterns (reported in Appendix Section F). As the literacy of the “old” generation is a strong correlate of IM (e.g., Alesina et al. (2020)), we run specifications controlling for it. In a more demanding test, we conditioned on the literacy of the old Muslims, Christians, and Animists, respectively. The correlations between regional development and IM remains similar for Muslims and Christians. We also distinguished by gender. Muslim boys and girls fare equally well as Christian in areas close to the capital and the coast, more densely populated regions, and more service-manufacturing oriented ones, with sizable colonial investments.



**Figure 9: Regional Correlates of IM, Country-Fixed-Effects Specifications**



The figure plots correlations (standardized "beta" coefficients) between intergenerational mobility (IM) and various regional characteristics for Christians (red star), Muslims (green rhombus), and Animists (blue square). Panel (a) examines upward IM that reflects the likelihood that young individuals, aged 14-18, residing in households where the old generation has not completed primary schooling, will complete primary education. Panel (b) examines downward IM that reflects the likelihood that young individuals, aged 14-18, residing in households where the old generation has completed at least primary schooling will not complete primary education. There are three categories of IM correlates. (i) Proxies of development before independence. (ii) Locational and geographic features. (iii) Historical variables, including colonial-era investments and precolonial statehood. Appendix Section F gives variable definitions and sources. All specifications include country fixed effects (constants not reported). Standard errors are clustered at the country level.

## 6.3 District Religious Composition and Segregation

### 6.3.1 Thesis

Across countries religious IM gaps is larger in segregated countries, mostly in West Africa. Besides, educational mobility for 14–18 years old Muslims appears the highest in countries with small or even tiny Muslim communities. Platas (2018) argues that the expansion of Western education, mainly promoted by Christian missions during colonization was perceived as a threat by Muslim (religious) leaders. Hence, in Muslim-majority districts, Christian missionaries did not build many schools. In these areas far from the coast and the main administrative centers, the colonial authorities wanted to avoid inter-religious tensions (e.g., Northern Nigeria). Local Muslim communities that maintained autonomy via the "doctrine of indirect rule" resisted Western education; this was especially true in strong Islamic Kingdoms (Bauer,

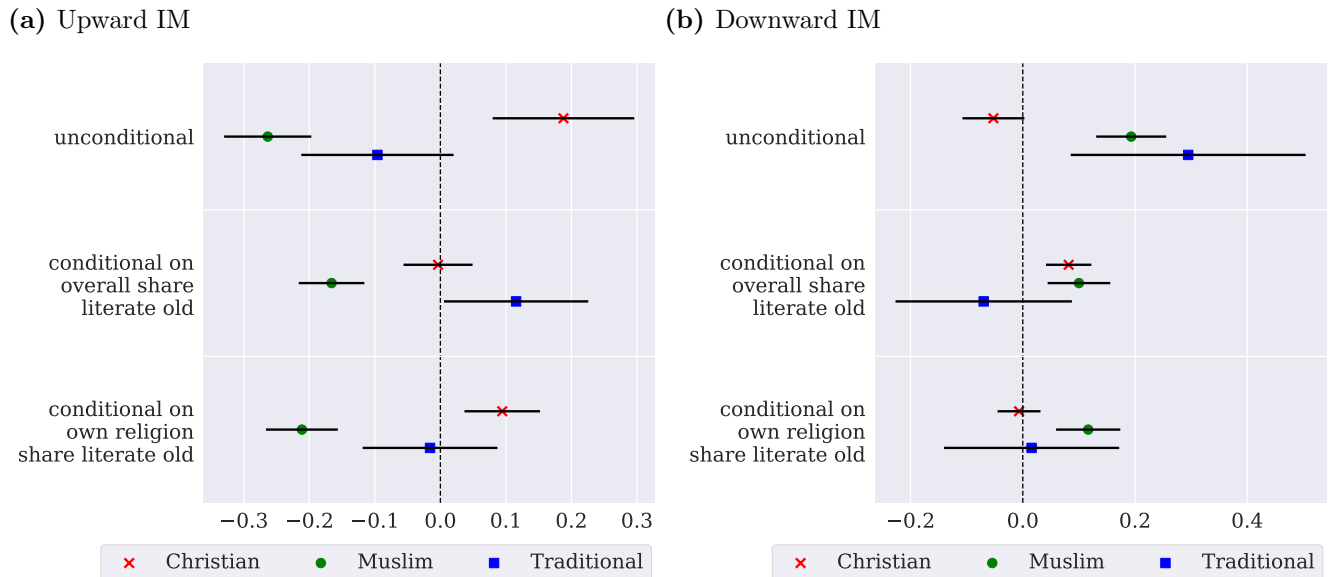
Platas, and Weinstein (2019)), as in Northern Nigeria (Sokoto), Mali, and Niger (Dendi and Songai). In contrast, in areas with smaller and modest Muslim communities, religious competition pushed Muslim elites to adopt Western education. For example, Laitin (1986) discusses how religious heterogeneity has benefited the Yoruba in the South-west of Nigeria (see also McCauley (2014)).

### 6.3.2 Results

To assess the role of segregation, we regress IM on the share of the coreligionists in the district separately for Christians, Muslims, and Animists. Figure 10 gives the OLS estimates; panel (a) examines upward IM, while panel (b) looks at downward IM.

Model (1), at the top, reports the associations simply conditioning on country fixed effects. There is a significantly positive association between IM and own religious share for Christians. The opposite applies to Muslims, who do well in regions where they are fewer. The estimate implies that the likelihood that Muslim children whose parents have not completed primary school will do so is 2.5 pps higher in areas with a 10 pps lower Muslim representation. The estimate for Animists is negative, but statistically indistinguishable from zero. Patterns for downward IM are similar. Downward IM for Christians is lower in regions with a high Christian share, but the opposite is true for Muslims (and Animists).

**Figure 10:** District IM on Population Share, by Religion, Country Fixed-Effects

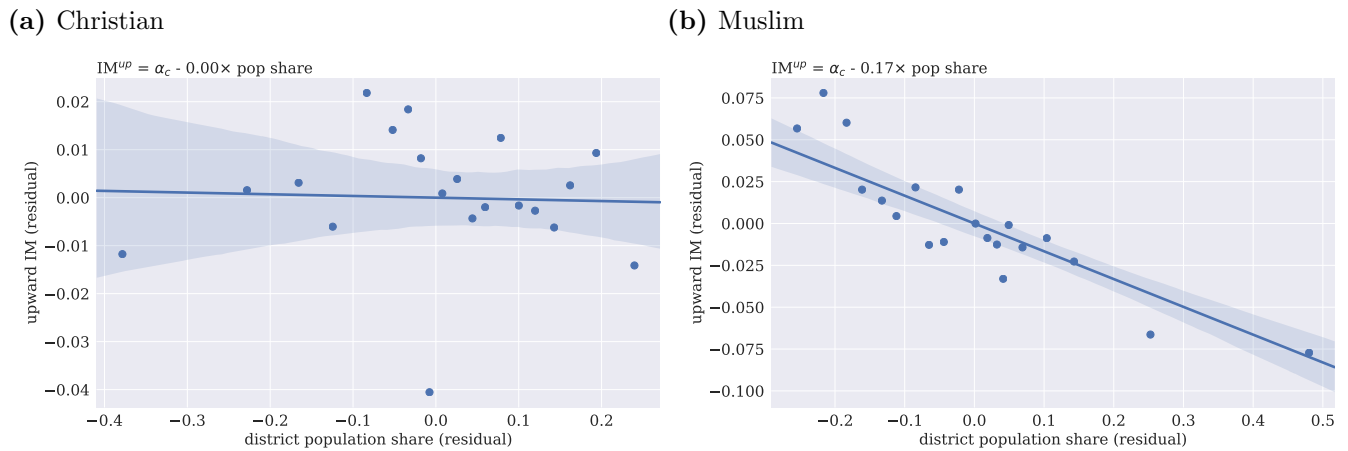


The figures show OLS regression estimates associating upward IM (panel (a)) and downward IM (panel (b)) with the own religion population share at the district for Christians (red stars), Muslims (green dots), and Animists (blue squares). The unconditional specifications (model 1) at the top include only country fixed effects. The specifications in the middle (model (2)) condition on the share of the old generation with completed primary education in the district, besides country fixed-effects. The specification in the bottom (model (3)) condition on the share of the own religion old generation with completed primary education in the district, besides country fixed effects. The two-standard-error bands based on heteroskedasticity adjusted, clustered at the admin-1 province level standard errors are also reported.

In model (2) in the middle, we augment the specification with the share of the old generation who have completed primary schooling. Doing so, we isolate the role of religion from the overall level of regional development. The coefficient on the religious share for Christians drops to zero; Christians do equally well in areas with significant, modest, and small Christian communities. For Animists, the estimate flips sign.

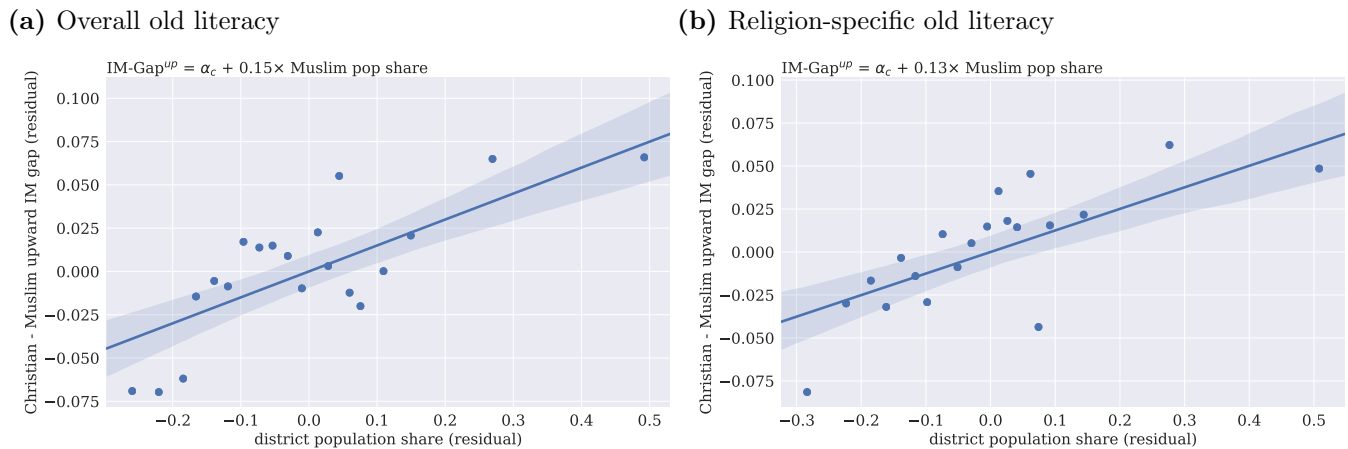
But, the coefficient remains stable for Muslims,  $-0.18$ . Muslim boys and girls have a much lower likelihood of completing primary schooling in areas with more coreligionists irrespective of old' literacy. There is an intriguing asymmetry, suggesting that Muslims' underperformance in Muslim-dominated areas is not simply driven by the legacy of insufficient colonial investments, since the pattern holds over and above initial literacy levels. Figure 11 illustrates the strikingly different correlation between religious shares and IM for Muslims and Christians across districts, controlling for the education of the old generation that captures regional differences in development. Christian boys and girls born in households without much parental education, do well independently of the religious composition of the districts, while Muslim children fare worse in areas with a significant Muslim presence. Panel (a) of Figure 12 further illustrates this regularity, plotting the gap in upward IM between the two major religious groups against the share of Muslims in the district. The gap is higher in districts with relatively larger Muslim communities.

**Figure 11:** Bin-Scatter. District Upward IM on Own Population Share



The Figures present binned scatter-plots of upward intergenerational mobility (IM) for Christians (left panel) and Muslims (right panel) against overall religious share in district's population, conditional on country fixed effects and overall share of literate old in the district. See Figure 10 panel (b), for the specification.

**Figure 12:** Bin-Scatter. District Upward IM Christian-Muslim gap on Muslim Population Share



The Figures present binned scatter-plots of the gap in upward IM between Christians and Muslims against the share of Muslims in the district's population conditional on country fixed effects. In panel (a) we condition on the overall share of literate old in the district and in panel (b) we condition on the religion-specific shares of the literate old in the district.

In model (3) in the bottom of Figure 10, we control for the share of completed primary schooling among the old coreligionists, to account for potential religion-specific human capital spillovers and convergence (e.g., Borjas (1992)). Christian children enjoy a somewhat higher chance to complete primary schooling in areas with a large Christian share; the upward IM estimate is about 0.1, while the downward IM coefficient is nil. Likewise, the share of Animists plays no role in both upward and downward IM. This is not the case for Muslims. Muslim children, whose parents have not completed primary education have a considerably lower likelihood to complete primary education in regions with sizable Muslim communities. In districts with larger Muslim communities, downward IM also appears higher for Muslim kids. Again, this pattern is not driven by the limited Muslim-specific or abundant Christian specific access to education historically. Panel (b) of Figure 12 illustrates further this asymmetry, plotting how the religious IM gap evolves as a function of the fraction of Muslims in the district’s population when we account for the literacy rates among the old of the two groups in the district. The gap is the highest (lowest) in regions with very significant (small) Muslim communities.

## 6.4 Taking Stock

Two takeaways. First, for all faiths, upward IM is higher and downward IM is lower in more developed regions, closer to the capital and the coast, that received investments during colonization. However, as Muslims and Animists reside in less developed, more remote, with lower infrastructure regions, they appear at a disadvantage. Second, religious segregation appears instrumental for educational mobility and the substantial religious gaps in IM across African regions. Christians do well independently on where they reside. In contrast, Muslim children underperform in districts with a high Muslim share. As a comparison, there is no association between Animists’ mobility and their own share locally. The inverse relationship between Muslim representation and lower IM for Muslims does not simply reflect the adverse initial literacy conditions neither of the region as a whole nor the Muslim community specifically. Deeper forces are more likely at play.

## 7 Survey Evidence on Attitudes and Beliefs

This section sheds some light on the remarkable association between the coreligionists’ representation in a district and Muslims’ decreased propensity to complete primary schooling, a pattern unique to Muslims.

### 7.1 Preferences Towards Religious Mixing

We examine preferences towards co-residents using data from the Afrobarometer. These are nationally representative surveys, conducted every two-three years, on values, attitudes, and beliefs. As in the census analysis, we focus on Christians, Muslims, and Animists, aggregating the various subgroups into the corresponding broader categories.<sup>21</sup>

The 2016 (round 6) and 2019 (round 7) Surveys, conducted in 35 countries, ask respondents’ willingness

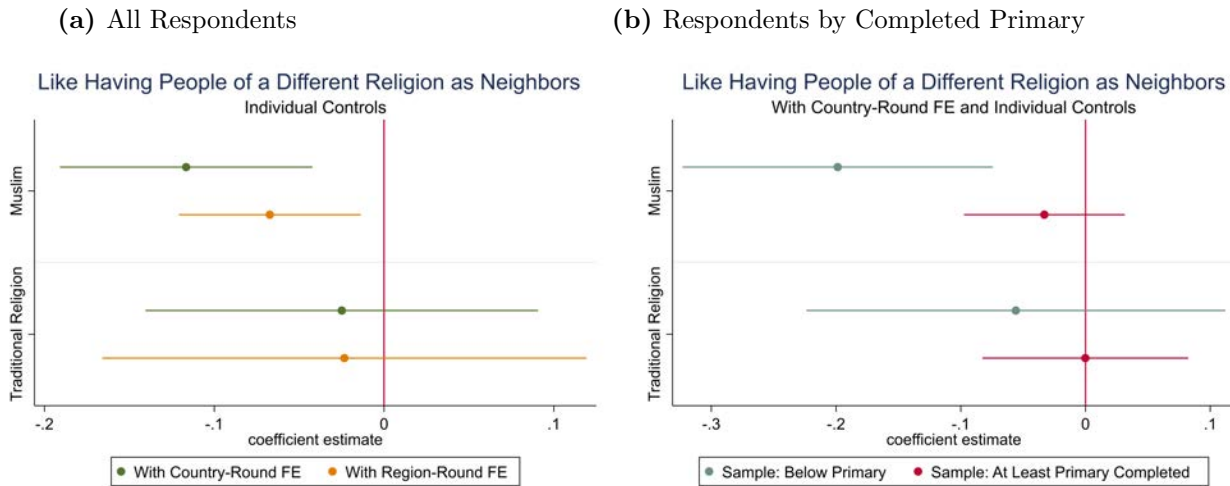
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<sup>21</sup>Many papers have used Afrobarometer data to study a plethora of questions. For example, Nunn and Wantchekon (2011) link enslavement during Africa’s slave trades to contemporary trust, Hjort and Poulsen (2019) study the employment impact of internet connectivity, and Manacorda and Tesei (2020) examine the role of mobile telephony on protests.

to live in religiously diverse communities.<sup>22</sup> The question reads: *“Please tell me whether you would like having people of a different religion as neighbors.”* Answers range from 1 (strongly dislike) to 5 (strongly like). We explore inter-religious differences in preferences for mixing with people of different creeds, associating respondents’ answers to their religion. We control for individual characteristics (age, age squared, gender, and urban residence) and country-survey fixed effects that account for national policies, institutions, and other country-year features. Besides, in a demanding specification, we replace the country-survey constants with 940 region-survey constants that absorb all time-invariant province features. Standard errors are clustered at the country level.

Figure 13 panel (a) summarizes the results. On average, Muslims are less willing to have people of other faiths as neighbors than Christians (the omitted category). The Christian-Muslim difference ( $-0.1$ ) is present, even when we compare individuals residing in the same region and year. The standardized “beta” coefficient in the within-region specifications ( $-0.026$ ) is comparable to the one on the rural residence indicator ( $-0.03$ ), revealing that respondents in rural areas express, on average, a lower willingness to live with neighbors of different faiths. [The pattern is similar in ordered probit/logit ML models]. In Panel (b) we distinguish by respondent’s education. Muslim-Christian differences in preferences for coreligionists neighbors are pronounced for respondents without completed primary schooling, whereas the differences are muted among those with completed primary education.<sup>23</sup> Notably, Muslims marked preference for residing with coreligionists compared to Christians is not shared among adherents of Traditional Religions who do not show a similar tendency.

**Figure 13:** Preferences for Religious Mixing. Afrobarometer Surveys



The figures plot OLS estimates quantifying the individuals’ response to preferences to having neighbors from different religions. The LS specification associates individual preferences on a Muslim indicator, an Animist indicator, and individual control variables (age, age squared, gender, rural/urban residence). Each figure plots the estimates from a specification with country-round fixed effects (top) and district-round specific constants (bottom). Two-standard-error bands based on heteroscedasticity adjusted and clustered at the country level are also reported. The dependent variable takes five values: 1 (strongly dislike), 2 (somewhat dislike), 3 (do not care), 4 (somewhat like), and 5 (strongly like). The sample includes 87,862 voting-age individuals in 470 regions in 35 African countries [58,187 Christians, 28,317 Muslims, and 1,358 Animists].

<sup>22</sup>Burundi, Benin, Burkina Faso, Botswana, Ivory Coast, Cameroon, Cape Verde, Gabon, Ghana, Gambia, Guinea, Kenya, Liberia, Lesotho, Morocco, Madagascar, Mali, Mozambique, Mauritius, Malawi, Namibia, Niger, Nigeria, Sudan, Senegal, Sierra Leone, Sao Tome and Principe, Swaziland, Togo, Tunisia, Uganda, Tanzania, South Africa, Zambia, and Zimbabwe.

<sup>23</sup>On the sample of Africans without a completed primary education, out of the 22 countries where Muslims and Christians are more than 1% of the surveyed population, the Muslim indicator is negative in 19.

These uncovered differences in preferences partially rationalize why Muslims, who have not completed primary education, are more likely to stay in regions with fellow Muslims (section 6), although they benefit, on average, from moving to higher IM regions as much as Christians (Section 5). These results add to research on religious fractionalization, showing that cultural aspects may explain the high degree of religious segregation in many Sub-Saharan African countries (see Alesina and Zhuravskaya (2011)). Muslims’ preference for residing near fellow Muslims may also be relevant for the vibrant research agenda trying to understand why low-income individuals do not migrate, even temporarily, to exploit gains in other than their birthplace regions (e.g., Bryan and Morten (2019), see Lagakos (2020) for an overview).

In the Appendix Section G, we show with IPUMS data that in all countries but Rwanda and Uganda, the migrant share for Christians is higher than Muslims. Therefore, preferences map to (non) actions (movement). The population-weighted average across the 13 countries for which we observe migration for Christians is 0.25, while for Muslims, the migrant share is 0.10. Although Muslims reside in less developed regions with lower IM (section F) and they stand to gain when moving to high upward mobility areas, they are less willing to migrate (section 5). The same pattern applies when we compare illiterate individuals. About 40% Christians without completed primary are internal migrants in the 13-country sample, while the share of migrant Muslims is 20%.

## 7.2 Demand for Education

The considerable within-district religious IM gap may partly stem from the unequal schooling infrastructure across locally segregated communities. To shed light on this, we proxy a respondent’s demand for education looking at answers to a question about government priorities: *“In your opinion, what are the most important problems facing this country that government should address?”* Survey participants can choose up to three topics from a diverse list of approximately forty areas. Education is the third most frequently-mentioned issue among the 188,759 respondents across rounds 3-7 conducted in 37 countries; roughly one in five individuals (21.5%) list education as one of the three priorities for government action. Overall, 14 different subjects are mentioned by at least 5% of the respondents and 9 topics by more than 10%. If Muslim neighborhoods lack schools, then Muslims would be more likely to respond that governments should prioritize education.

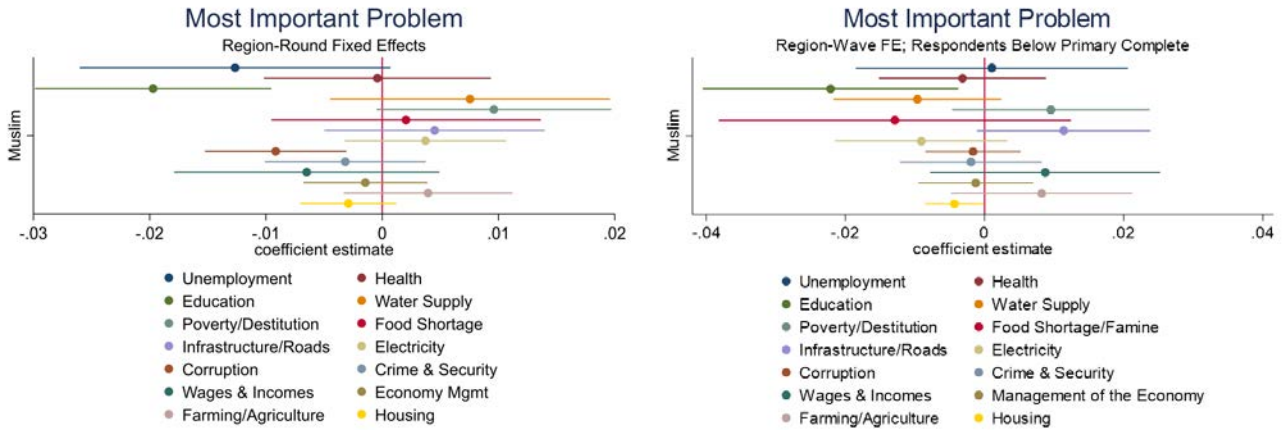
To test this possibility, we estimate linear probability models that associate indicators that take the value of one when a respondent mentions a given issue as a government priority to a Muslim and an Animist indicator, conditioning on individual features and region-round fixed effects. Figure 14 plots the estimate on the Muslim indicator that reflects how much more/less likely Muslims are to report each issue relative to Christians residing in the same region and year (we omit for brevity the estimate on Animists). The figure orders the issues by popularity, starting from unemployment –mentioned by 37% of respondents– to housing, listed by 5.5%. Muslims do not demand more government action in education, quite the opposite. They are less likely to list education as a priority issue for the government. The difference, of about 2 percentage points, is the largest in absolute value across the various topics. In contrast Animists list education as a problem at the same rate as Christians. Besides, the only area of disagreement between Christians and Muslims who have not completed primary education regards the prioritization of education, with Muslims demanding less than Christians and Animists. Schooling infrastructure and the financing of educational needs are, thus, unlikely to drive the religious IM gap

within districts. Other forces are at play.

**Figure 14:** Demand for Education. Afrobarometer Surveys

(a) All Respondents

(b) Respondents Not Completed Primary



The figures plot linear probability model estimates associating individual responses on government priorities on a Muslim indicator, an Animist indicator, individual control variables (age, age squared, gender, rural/urban residence) and district-round specific constants. Two-standard-error bands based on heteroscedasticity adjusted and clustered at the country level are also reported. The sample includes 187,472 voting-age individuals in 37 African countries. The figure omits reporting the estimate on the Animist indicator.

## 8 Conclusion

Africa is home to 600 million Christians, more than in any other continent. Around 300 million Muslims live in Sub-Saharan countries, and about 200 million in North Africa. Religious identity is not just a label, as Africans' religiosity is pronounced both in the continent's megacities and in the countryside. Followers of the two creeds differ substantially in a crucial aspect, education. While schooling has risen since independence, religious differences persist, fueling, according to commentators, religious strife.

### 8.1 Summary

Despite the salience of religious cleavages in Africa, a comprehensive account of how children of different faiths have fared in educational attainment is lacking. This is our starting point. First, we map educational mobility for Muslims, Animists, and Christians across 20 African countries, matching children's primary school completion to cohabiting older generation relatives. Comparing Muslim to Christian children, born in the same country and decade, to equally uneducated households, we find that Muslim kids have a 16 percentage points lower likelihood of completing primary schooling. The IM gap between Christians and Animists is wider, 22 percentage points. Christian children fare better in all countries, but a few where Muslims are tiny minorities. Second, we trace the roots of the uncovered differences in religious IM. Household composition, parental occupation, and rural/urban residence explain little of the sizable gaps. Regional features, on the contrary, are first-order, explaining half of the religious differences in mobility. Third, using a methodology that exploits the timing of children's move during childhood to tease out spatial sorting from regional exposure effects, we show that both Muslim and Christian children

benefit (lose) at the same rate when their families move to high (low) mobility regions. Fourth, we unpack these location-specific features, characterizing the wide variation of religious IM and IM gaps across roughly 2,000 regions. Among numerous regional features, the Muslim share is the strongest correlate of the Muslim-Christian IM differences; Muslim boys and girls underperform in regions with large Muslim communities, a pattern that is absent for Animists and Christians. In the last part of the paper, we use data from the Afrobarometer Surveys to better understand this pattern. Adherents to Islam compared to Christianity and Animists display stronger in-group preferences, particularly those without education. Differential access to schools within districts is unlikely to drive this pattern, as Muslims mention education less frequently among the issues that the government should tackle.

## 8.2 Future Research

Our study begets more questions than it answers. First, there is a great deal of variation within Christianity, Islam, and indigenous faiths. For example, Pentecostal and evangelical churches are vibrant in Africa's metropolises. Due to census coarseness, we have abstracted from this rich heterogeneity. Further research should analyze this within-denomination variation distinguishing, for example, Maliki and Shafi Suni, Ahmadis, Sufis, and Shia Muslims and among Protestants, Copts, and Catholics, zooming in on specific countries and settings. Second, research should explore the role of Muslim schools (*maktabs* and *madrasas*), including their curriculum and socialization practices. Third, research on internal migration could study more closely the role of religious networks that appear relevant. Fourth, Muslims' in-group preferences and the high degree of religious segregation in West Africa that moves in tandem with lower education for Muslims suggests that future works should look into its causes. These involve studying formal and informal Islamic risk-sharing institutions, like the *waqf*, religious leaders' role, and the influence of religious networks in labor markets. Fifth, as numerous Christian and Muslim missions try to attract Africans adhering to indigenous religions, often via education, it is fascinating to look at the religious competition in Africa that is nowadays intense. Sixth, more work is needed to grasp how religious politics and state-religion interactions play out across the often fragile and weakly institutionalized African states, especially given our finding that Muslims fare worse educational outcomes in predominantly Muslim countries. Seventh, it is natural to investigate the interplay between the uncovered religious educational gap, the rise of religious extremism and the treatment of religious minorities. Eighth, given regions' profound role, future research should delve into regional policies, examining, for example, decentralization and representation. Ninth, the uncovered correlation between religious segregation and inter-religious differences in education mobility calls for experimental studies assessing the role of religious mixing. Tenth, Muslim's documented preference to reside in Muslim communities coupled with their undervaluation of formal education may reflect differential returns to formal education across religious groups and labor markets segmented along religious lines, topics that future work should elucidate.



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