

Culture and the Persistence of Educational Inequality: Lessons from the Muslim-Christian Education Gap in Africa*

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Abstract

Education is thought to be central to economic and political development, and often assumed to be universally valued. Yet within countries, educational attainment often varies systematically across identity groups, and education gaps are persistent. Why? I answer this question in the context of sub-Saharan Africa, where most Muslim adults have no formal schooling, but where most Christians do. I show that within countries, Muslims' educational attainment declines as the share of the Muslim population increases. Using the case of Malawi, I show that economic factors do not fully explain this phenomenon, and argue that culture helps explain persistent educational inequality. Specifically, I argue that the association between Christianity and formal education during the colonial period led to the development of distinct social norms about school attendance among Muslim and Christian communities. Cultural beliefs evolved alongside institutional change, and continue to shape schooling decisions. A cultural theory of educational inequality implies distinct policy responses from the predominant theories that have guided national and international education policymaking.

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Introduction

The majority of Muslim adults in sub-Saharan Africa have never attended school, while most Christians have.¹² Why? Does it matter? If so, what does it matter for? In this article I propose a cultural theory of the persistence educational inequality, using the case of the Muslim-Christian education gap in Africa. I argue that, in addition to well-studied economic factors, culture – defined as a set of beliefs about how others will behave under a variety of circumstances and facilitated by common knowledge³ – can affect the demand and supply of education, and that these beliefs both shape and are shaped by institutions.

Explaining education distributions within a country – and in particular, inequality in educational attainment across politically relevant social groups – is of central concern to the study of politics. Education is thought to be critical to a variety of outcomes that concern the social sciences, from economic development to political participation.⁴ By some accounts, education is not merely the cause of economic growth, it *is* growth⁵ – to have high levels of education is part and parcel of “what it means to be prosperous”⁶ and is a “key dimension of human progress.”⁷ Further, education can alter the economic and political position of individuals and groups in relative terms. As such, education is fundamentally redistributive, and inherently political.⁸

To date, political scientists have tended to explain variation in education within countries with the implicit assumption that education is “universally valued”.⁹ As such, efforts to explain variation in educational outcomes have focused largely on supply-side factors – political processes that privilege some individuals and groups over others, for example through distributive politics¹⁰ or group

¹Pew Research Center 2016.

²By school, I refer to those institutions providing secular education, including schools that also provide religious instruction.

³Laitin and Weingast 2006.

⁴Case 2006; Barro 2001; Hanushek and Woessmann 2012.

⁵North and Thomas 1973.

⁶Acemoglu, Gallego, and Robinson 2014.

⁷Narayan, Van der Weide, Cojocar, Lakner, Redaelli, Mahler, Ramasubbaiah, and Thewissen 2018.

⁸Ansell 2010.

⁹Gift and Wibbels 2014.

¹⁰Kramon and Posner 2016.

favoritism.¹¹ More broadly, institutional theories of development suggest political and economic institutions shape access to and the distribution of services, including education.¹² Democracies have been shown to spend more on services such as education¹³ as well as to facilitate access to education, for example by removing school fees.¹⁴ While this work as generated important insights into the distribution of educational resources, there remains considerable unexplained variation in educational outcomes within countries.¹⁵ Further, the implicit assumption that education is universally valued is rarely interrogated empirically.

In this paper, I first present evidence of a large education gap between Christians and Muslims in sub-Saharan Africa – a region that has seen massive increases in access to schooling in recent decades, but where 34 million school-age children are not in school, more than half of the total out-of-school population globally.¹⁶ The Muslim-Christian education gap is striking in its magnitude. 65 percent of Muslim adults in Africa have no formal schooling at all, compared to 31 percent of Christians.¹⁷ Drawing on census and survey data from eleven African countries, I show that across administrative districts, school attendance among Muslims declines as the share of the Muslim population increases. Low educational attainment has persisted in Muslim majority areas in numerous African countries despite major institutional changes – democratization, the expansion and secularization of education systems, and the removal of school fees.

I develop a set of hypotheses to explain this phenomenon by drawing on the extant literature. These hypotheses include variation across religious groups in physical or financial access to education, beliefs about the economic returns to education, and a trade-off between religious and formal education. I test these hypotheses using administrative data and an original household survey with embedded experiments that I conducted in Malawi, a country with features making it ideal for isolating causal mechanisms. As I show, none of these factors is sufficient to explain the gap. I collect

¹¹Franck and Rainer 2012.

¹²Acemoglu, Johnson, and Robinson 2005.

¹³Stasavage 2005.

¹⁴Harding and Stasavage 2014.

¹⁵Gift and Wibbels 2014.

¹⁶UNESCO 2016.

¹⁷Pew Research Center 2016.

additional qualitative data from a set of semi-structured interviews, focus groups and participant observation. Through an iterative process of collecting quantitative and qualitative data over three years, I develop and present a cultural theory of the persistence of educational inequality. While I apply this theory to explain the persistence of the Muslim-Christian education gap, the theoretical insights may be relevant for educational inequalities that are found in other parts of the world.

I define culture not as values, but as a set of *beliefs* about how others will behave and how others believe one ought to behave under a variety of circumstances. These beliefs are shared by members of a group – often but not necessarily comprising of members with similar traits and practices – whose behavior and opinion an individual cares about, and with whom an individual interacts regularly. This conception of culture is similar to that of Laitin and Weingast, which centers on the ability of cultural group members to “condition their behavior on common knowledge beliefs about all members of the group,”¹⁸ as well as Greif, where beliefs “are the ideas and thoughts common to several people that govern interaction.”¹⁹ While values may interact with beliefs,²⁰ they are not central to my argument for two reasons. First, self-reported values and preferences are often at odds with actual behavior.²¹ Second, conceptualizing culture as values risks essentializing social groups.

I develop a cultural theory of the persistence of educational inequality by drawing on qualitative data from nearly 100 interviews, a set of focus groups, and participant observation in villages in Malawi. I argue that religious communities in colonial Africa developed distinct social norms regarding formal education during the colonial period, a consequence of the association between Christianity and formal education. Formal education was seen as a cultural threat to Muslims during the colonial period, as most schools were Christian-founded and managed, with a central goal of converting children to Christianity. Where Muslims comprised a local minority, they faced competition with Christians and built their own schools, and some took the risk of attending Christian

¹⁸Laitin and Weingast 2006, p. 16.

¹⁹Greif 1994, p. 915.

²⁰Bénabou 2008.

²¹Swidler 1986; Bicchieri 2016.

schools.²² In Muslim majority areas, there were fewer schools per capita, and very few Muslims attended.

Over time, with the secularization of the education sector, the threat of conversion subsided. However, social norms about formal schooling had been set, producing long-term variation in the social costs and benefits of school attendance. In Muslim minority areas, school attendance became a social norm, while in Muslim majority areas this norm was weaker. Today, while Muslims in both Muslim minority and majority areas have similar expectations about the *economic* returns to schooling, there are differences in expectations about the *social* returns to schooling. I argue that beliefs about the social returns to schooling explain the divergence in schooling outcomes among Muslims in Muslim minority and majority areas.

This work contributes to several bodies of literature. First, it contributes to our understanding of how identity and culture shape development outcomes. A growing body of work investigates the role of social norms in shaping behavior that affects politics, development and human well-being, from voting²³ to child marriage.²⁴ I apply these insights to the case of education, calling into question the universality of demand for education by highlighting the social costs and benefits associated with formal education, and how these vary across religious groups as well as over time.

In the context of sub-Saharan Africa, much of the literature on identity and politics has focused on ethnicity – including ethnic favoritism,²⁵ ethnic diversity,²⁶ ethnic preferences,²⁷ and ethnic voting.²⁸ I show that *religious* identity also matters for explaining development outcomes. My work suggests that when it comes to educational outcomes, religious identity works less through the formal distribution of resources, a primary mechanism with respect to ethnic favoritism, and to a greater extent through cultural beliefs that affect how existing resources – especially those

²²Lamba 1984.

²³Rosenzweig 2018.

²⁴Bicchieri, Lindemans, and Jiang 2014.

²⁵Franck and Rainer 2012; Kramon and Posner 2016; Ejdemyr, Kramon, and Robinson 2015.

²⁶Alesina, Baqir, and Easterly 1999; Easterly and Levine 1997; Miguel and Gugerty 2005; Habyarimana, Humphreys, Posner, and Weinstein 2007.

²⁷Lieberman and McClendon 2013.

²⁸Carlson 2015; Adida, Gottlieb, Kramon, and McClendon 2017.

in formal education sector – are used and understood by religious communities. This distinction resonates with recent work that shows how the salience of ethnic and religious identity affect individual policy preferences differentially.²⁹ More broadly, this article builds on work in African politics that examines the role of religious identity in shaping behavior³⁰ and the conditions under which religious and ethnic identities become salient.³¹

I also contribute to a growing body of work that investigates culture as a source of historical persistence,³² such as the relationship between migration patterns and the development of a culture of honor in the American south³³ and the effect of the slave trade on trust in Africa.³⁴ I provide evidence of another case in which historical events exerted a long-term impact on development outcomes, namely educational attainment, through the way missionary education affected the social costs and benefits of school attendance across religious communities.

More broadly, this work contributes to theoretical and policy debates on the causes and consequences of economic growth, of which education is seen as central to and even constitutive of. Institutional theories of development highlight the role of inclusive political and economic institutions in support a virtuous cycle of growth, including investment in and the provision of education.³⁵ Indeed, countries with more inclusive institutions invest more and realize higher average levels of education. However, even within the world’s wealthiest and most democratic countries, not to mention poorer ones, large educational inequalities exist and persist – from the Black-White achievement gap in the United States to the Muslim-Christian education gap in Africa. My work suggests that in addition to investigating structural and institutional factors underlying these yawning gaps, there is also need to examine the role of culture, which may coevolve with institutions.³⁶

Finally, while there has been relatively little work that examines explanations for the Muslim-

²⁹McCauley 2014.

³⁰McClendon and Riedl 2015.

³¹Laitin 1986; McCauley 2017.

³²Nunn 2012.

³³Cohen, Nisbett, Bowdle, and Schwarz 1996.

³⁴Nunn and Wantchekon 2011.

³⁵Acemoglu, Johnson, and Robinson 2005.

³⁶Alesina and Giuliano 2015.

Christian education gap in Africa, much work has examined the determinants of education outcomes in low-income countries, especially in the field of development economics. Much of this literature has focused on the role of economic resources in explaining schooling outcomes, such as the distance to school,³⁷ removal of school fees,³⁸ cash transfers,³⁹ or reducing out-of-pocket costs.⁴⁰ I show that while economic factors matter to decisions regarding investment in education, so too do social factors, the latter of which have been largely overlooked in both the political science and economics literature on education.

The argument and evidence proceed as follows. First, I discuss what is known about the Muslim-Christian education gap, and use census and survey data from eleven African countries to show that within countries, the magnitude of the education gap grows as the percentage of the population that is Muslim increases. I motivate the selection of Malawi as an ideal case to examine mechanisms underlying the persistence of educational inequality in Muslim majority areas. I discuss the historical context of Malawi and examine mechanisms related to the distribution of wealth and educational resources, using administrative and household survey data. I then test an additional set of mechanisms related to a set of economic factors and religious practices using an original household survey with embedded experiments conducted in two districts in southern Malawi. I show that the aforementioned mechanisms are insufficient to explain the persistence of inequality, and turn to a set of interviews, focus groups, and participant observation to probe alternative mechanisms. Drawing on this qualitative data, I present a cultural theory of the persistence of educational inequality.

³⁷Duflo 2001.

³⁸Lucas and Mbiti 2012.

³⁹Schultz 2004.

⁴⁰Kremer, Moulin, and Namunyu 2003.

The Muslim-Christian Education Gap in Africa

Recent research has shown that Muslims in sub-Saharan Africa have, on average, far lower levels of educational attainment than Christians.⁴¹ While the magnitude of this education gap varies considerably across countries, it exists in nearly every African country for which data are available. In the most extreme cases, such as Nigeria, Christians have five more years of formal schooling than Muslims, and more than half of Muslims have no formal education whatsoever. In Ghana, 61 percent of Muslim adults have no formal education compared to 25 percent of Christians. In Kenya, 59 percent of Muslim adults have no formal education compared to 11 percent of Christians..⁴²

In this section, I show that the Muslim-Christian education gap increases with the percent of the population that is Muslim in sub-national administrative units. In fact, the education gap seems to be driven almost entirely by Muslim majority areas, suggesting that to understand the persistence of educational inequality, we need to understand why Muslims in Muslim majority areas have such low levels of education.

Using census data representative at the level of sub-national administrative unit, I estimate the likelihood of a child being in school as a function of the percentage Muslim of the administrative unit in which she lives. The sample includes eleven countries where data on religious affiliation and administrative units of comparable size were available as of 2017: Burkina Faso, Cameroon, Ethiopia, Ghana, Malawi, Mali, Mozambique, Nigeria, Senegal, Sierra Leone, and Uganda.⁴³ I include youth aged 6 to 17 who identify as Christian or Muslim.⁴⁴ *School attendance* is a dichotomous variable indicating whether or not a child was attending school at the time the census was taken.⁴⁵ *Muslim* is a dichotomous variable indicating whether or not a respondent is Muslim,

⁴¹Platas Izama 2014; Pew Research Center 2016; Manglos-Weber 2017.

⁴²Pew Research Center 2016.

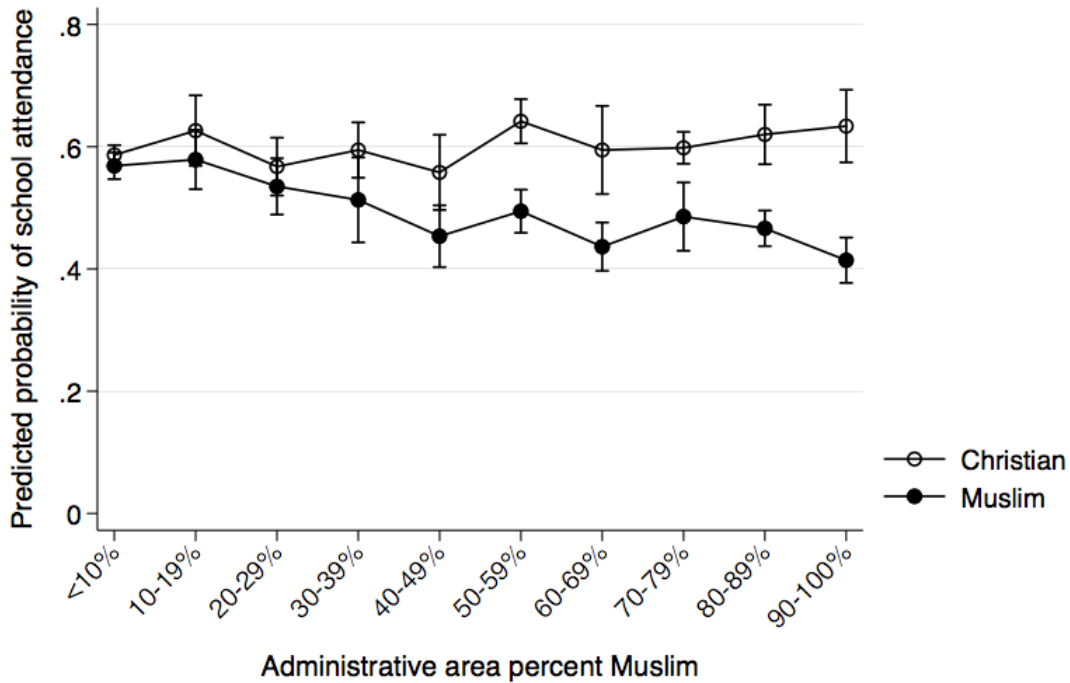
⁴³Data are compiled by Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 6.3 [Machine-readable database]. Minneapolis: University of Minnesota, 2014. Census data are used for all countries except Nigeria, where only survey data is available on the IPUMS website, and to the public.

⁴⁴The vast majority of people in sub-Saharan Africa identify as either Christian or Muslim, so excluding others amounts to a very minimal reduction in the sample size. Details of sample selection can be found in the online appendix.

⁴⁵Logistic regression model yields similar results. Results for adult literacy are similar and reported in the Appendix.

and *percent Muslim* is the percentage of the population in an administrative unit that identifies as Muslim. *Muslim* and *percent Muslim* are interacted to examine how the effect of being Muslim varies as the percentage of the population that is Muslim increases. I use ordinary least squares (OLS) regression, and estimate a non-parametric model, which reduces the likelihood of erroneous extrapolation where data are sparse.

This analysis reveals a striking pattern: the concentration of Muslims living in a given administrative area is predictive of Muslims' school attendance. The greater percentage of the area that is Muslim, the lower the likelihood that Muslim children are in school.



Note: OLS regression model, includes covariates for urban/rural, gender, birth year, and country fixed effects. 95% CI shown.

Figure 1: Likelihood of school attendance by religion, as the percentage of Muslims in administrative units increases

Figure 1 shows the predicted values for school attendance among Christian and Muslim children as the percentage Muslim of the administrative unit increases. The predicted probability that a Muslim child attends school falls 15 percentage points as percent Muslim increases from 0 to 100, while among Christians it remains around 60 percent. Similar results are found for adult literacy ⁴⁶

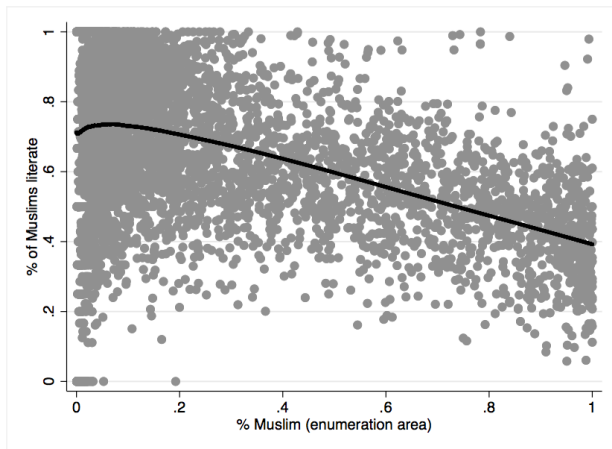
⁴⁶Tabular results can be found in the Appendix, Table A1, for both adult literacy and school attendance for the

The Muslim-Christian education gap is thus driven by areas with a substantial Muslim population. Where Muslims comprise a small minority, there is no education gap.

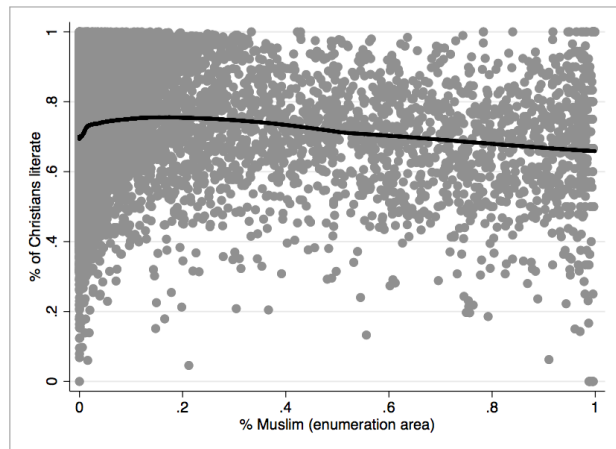
In the remainder of the paper, I focus on the case of Malawi to test a set of hypotheses about what might be driving the Muslim-Christian education gap, and specifically what might be driving low educational attainment among Muslims in Muslim majority areas. Malawi is an ideal case to test hypotheses about this education gap for several reasons. First, in Malawi, there is substantial variation in the concentration of the Muslim population at the subnational level, holding constant ethnicity. Thus, I am able to compare areas with higher and lower concentrations of the Muslim population, while holding constant Muslims' ethnic identity. Such a comparison would be difficult to do in a country like Nigeria, since the Muslim majority north of the country is of a different ethnicity than the Muslim minority south.

Second, Malawi typifies the institutional environment that would be most conducive to reducing education inequalities according to institutional theories of development. Malawi was an early democratizer in Africa, and has been a multi-party democracy since 1994. Malawi was also one of the first African countries to adopt and implement free primary education, a policy designed to relax economic constraints to attendance and which has been in effect for over twenty years, since 1994. Third, census and administrative data are available that allow me to verify a robust relationship between Muslim educational attainment and the concentration of the Muslim population. Countries such as Tanzania, which would otherwise have been another ideal case, prohibit the collection of data on religious identity. Similarly, religious identity has been excluded from the Nigerian census for a half-century, precisely because religious demographics are so politically volatile.

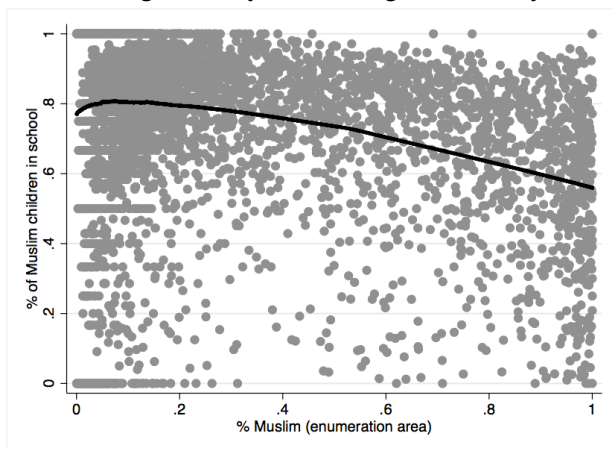
I use data collected from the Malawi National Statistics Office, a more fine-grained version of the 2008 census than the sample available on IPUMS, to document that the phenomenon of Muslim majority disadvantage exists in Malawi. The data on educational attainment by religious group are pooled sample of countries, as well as by country, in Table A2.



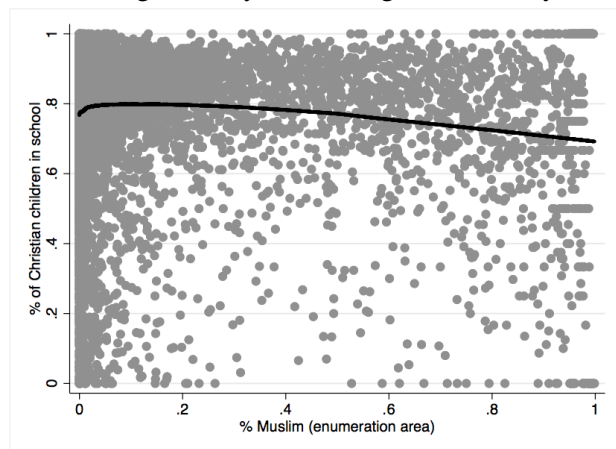
(a) Average literacy rate among Muslims by EA



(b) Average literacy rate among Christians by EA



(c) Average attendance rate among Muslim children by EA



(d) Average attendance rate among Christian children by EA

Figure 2: Educational attainment by religious group across enumeration area % Muslim (Lowess), 2008 Malawi Census

available at the census tract level, called an enumeration area (EA), with an average population of about 1000 people.

Table 1: Education and Muslim Majority Status in Malawi, Controlling for Access

	(1) Years of Education b/se	(2) Years of Education b/se	(3) Literate b/se	(4) Literate b/se
Muslim	0.321* (0.195)	-0.318* (0.174)	0.024 (0.103)	-0.238** (0.109)
EA % Muslim	0.026*** (0.008)	0.010** (0.005)	0.005 (0.003)	-0.000 (0.003)
Muslim x % EA Muslim	-0.045*** (0.006)	-0.020*** (0.005)	-0.017*** (0.003)	-0.008*** (0.003)
Distance to school		-0.117*** (0.032)		-0.055*** (0.019)
Rural		-1.170*** (0.129)		-0.265*** (0.077)
Wealth		0.904*** (0.023)		0.420*** (0.013)
Constant	6.805*** (0.186)	5.111*** (0.287)	1.214*** (0.099)	0.582*** (0.191)
District FE	Yes	Yes	Yes	Yes
Ethnic Group FE	No	Yes	No	Yes
Region FE	No	Yes	No	Yes
N	22103	22103	22035	22035
r^2	0.123	0.276		

Notes: *** indicates 99% confidence level; ** indicates 95% confidence level. * indicates 90% confidence level. Models 1 and 2 are estimated using OLS, and models 3 and 4 using logistic regression. Years of education is a count variable and literate is a dichotomous variable. Sample includes adult women in the Malawi 2010 Demographic and Health Survey. Standard errors clustered by survey cluster.

Figure 2 plots a Lowess curve for average literacy and school attendance rates among Christians and Muslims by enumeration area (EA) as the percentage Muslim of the EA increases. While education outcomes decline for both Christians and Muslims as percent Muslim increases, it declines to a far greater degree for Muslims. The average literacy rate for EAs with less than 5 percent Muslim is 72 percent for Muslims and 71 percent for Christians. By contrast, average literacy rates for EAs that are greater than 95 percent Muslim falls by nearly *half* among Muslims – to 39 percent – but falls by only two percentage points among Christians, to 69 percent. Meanwhile, school attendance declines for both Muslims and Christians as percent Muslim increases, but much more so for Muslims, from 79 percent to 55 percent, while for Christians it falls from 78 to 71 percent.

Table 1 uses data from the 2010 Malawi Demographic and Health Survey to show the rela-

tionship between EA percent Muslim and educational outcomes (years of education and literacy rates), controlling for distance to the nearest school, wealth, urban/rural status, and with and without region and ethnic group fixed effects.⁴⁷ While Muslims living in Muslim majority areas tend to be poorer than others,⁴⁸ neither wealth nor proximity to a school fully explains Muslim majority disadvantage. The addition of covariates for distance to school as well as household wealth reduce the magnitude of the coefficient on the interaction term, but it remains statistically significant, and the effect of percent Muslim on educational attainment of Muslims is substantively large. As the percent Muslim of an enumeration area increases from zero to one hundred percent, the predicted years of schooling for Muslims falls by more than a full year. For comparative perspective, Kramon and Posner find that coethnicity with the president in Kenya during one's primary school years is associated with an increase of slightly more than a third of a year of schooling.⁴⁹ Thus a one year decrease is comparatively large as well as substantively meaningful in a context where the average years of schooling is 5.2 years for women and 6 years for men.⁵⁰

Religion and Education during the Colonial Period

Present-day Malawi, which is predominantly Christian, was part the British empire from 1889 until the country gained independence in 1964. While most ethnic groups in Malawi practiced traditional religions prior to colonialism, one group, the Yao, had begun to convert to Islam by the 1870s and continued to do so throughout the early colonial period.⁵¹ By the time of the 1931 census, Islam was the largest religion in the southeastern areas where the Yao lived, particularly the district currently known as Mangochi, where 45 percent of the population were Muslim. Nearby districts also had substantial Muslim populations, ranging from 8 to 38 percent of the population.

⁴⁷The DHS targets women, and thus the sample is much larger for women than men. Results are consistent with census results at the district level for men and women.

⁴⁸Tabular results can be found in the online appendix. Muslims living as a majority also tend to have more children, but this relationship disappears with the addition of fixed effects for ethnicity and district.

⁴⁹Kramon and Posner 2016.

⁵⁰Averages according to the 2010 Malawi DHS.

⁵¹Bone 1982.

Today 77 percent of Yao identify as Muslim, with the remainder predominantly Christian, according to the 2008 census. As during the colonial period, the Muslim community in Malawi today, which is predominantly though not exclusively Yao, is largest in the southern district of Mangochi (72 percent Muslim).⁵²

During the colonial period, as was the case in many British territories, Christian missionaries played an extensive role in providing education. Until 1927, all primary schools were run by Christian missionaries, after which point a handful of government run and non-affiliated schools were established, but these comprised a small minority of the total. While school policies varied by mission, in general, those attending missionary schools were encouraged or even required to take part in religious practices. The goals of these schools went beyond academics – a major purpose was also to provide instruction in Christian teachings and convert the population to Christianity, ideally starting from a young age. Thus, in Malawi and elsewhere, Muslims often avoided these schools for fear of conversion,⁵³ or were not allowed to attend unless they participated in religious activities. As Lamba writes,

“... the insistence of Missions on conversion to Christianity of pupils in their schools threatened the whole religious and social order of Muslims, something impossible for them to accept... Muslims for a long time saw western schools as brainwashing and deculturising centres designed to estrange their children.”⁵⁴

Resistance to Christian missionary education among Muslims was compounded by the fact that investment in education was uneven, and generally low in Muslim majority areas such as southeastern Malawi. Colonial records, maintained in annual Blue Books,⁵⁵ give a sense of the disparity in the distribution of schools. For example, by 1904, the area comprising modern-day Mangochi district had a total of twelve primary schools for a population of 62,000 people, a ratio

⁵²Members of other ethnic groups in Malawi also converted to Islam, especially those living near Lake Malawi or in urban areas, but no other ethnic group converted in such large numbers, and no other major ethnic group in Malawi today has a Muslim majority.

⁵³Bone 1982.

⁵⁴Lamba 1984, p. 185.

⁵⁵Accessed at the Kew National Archives, United Kingdom.

of greater than 1:5000. In the same year, the area comprising modern-day Mzimba and Rumphi districts in the north had a total of 234 primary schools for a population of about 180,000, a ratio of about 1:800.

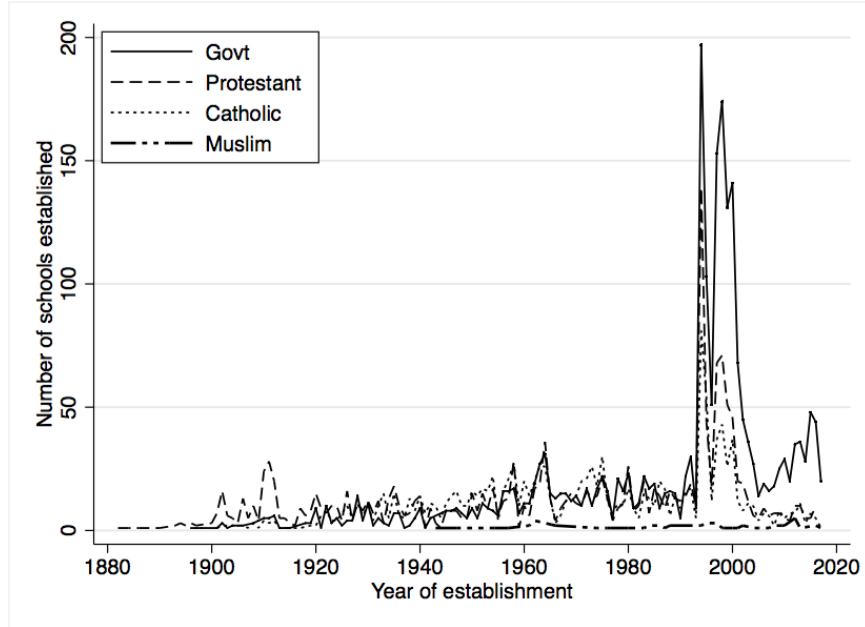


Figure 3: Number of schools established by proprietor-year, Malawi

Over time, the number of schools increased, as well as the number of non-affiliated government schools, both of which likely increased access for Muslim communities. Figure 3 shows the growth of schools over time by proprietor, using administrative records from the current Educational Management Information System (EMIS). The spike in school establishment at the end of the twentieth century corresponds with the implementation of Free Primary Education in 1994. There are very few Muslim-founded schools in general, and those that exist were not established until the 1940s – a half century after the first missionary schools were established. The first Muslim-founded schools were established not in Muslim majority areas, but rather where Muslims comprised a minority⁵⁶ – a phenomenon also observed in Nigeria and Uganda⁵⁷ – suggesting competition with Christians played a role in prompting Muslims to build their own schools.

While Muslim communities were historically under-served with respect to education facilities,

⁵⁶Lamba 1984.

⁵⁷Platas Izama 2016.

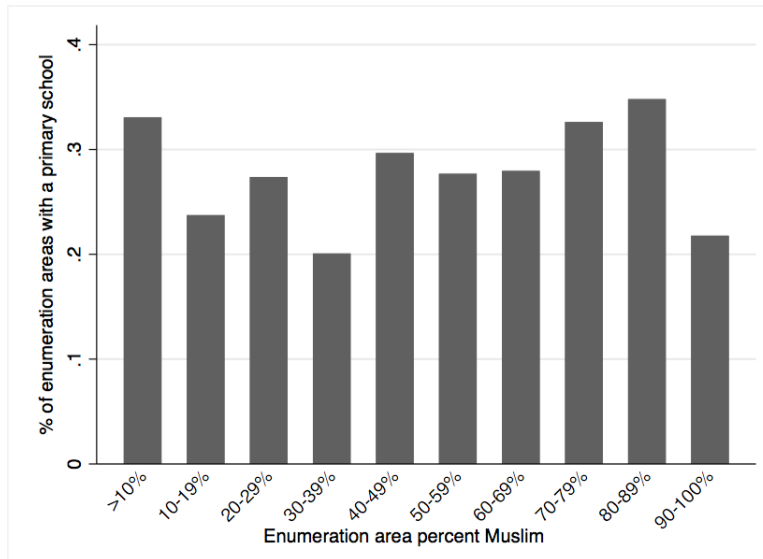


Figure 4: Percent of enumeration areas with a school and enumeration area percent Muslim

this historical disadvantage in access declined over time. Hundreds of new schools were built each year in the late 1990s, and today schools are not disproportionately located in Muslim minority areas. Figure 4 plots the percentage of enumeration areas that contain a school, by decile percent Muslim, and shows there is not a clear relationship between the Muslim share of the population in an enumeration area and the likelihood that there is a school present.⁵⁸

While there is little evidence that access is the primary driver of the Muslim-Christian education gap today, the historical context of education in Malawi – namely, the close association between formal education and Christianity, constituting a cultural threat for Muslims – is a central factor to which I will return.

Religious Beliefs and Economic Demand for Education

As suggested by the analysis above, relative poverty and historically low access to school contribute to, but are insufficient to explain why Muslim educational attainment is lowest in Muslim

⁵⁸Data on religious affiliation are from the 2008 census and the location of primary schools from the National Statistics Office (NSO).

majority areas. This section presents the results from an original household survey designed to test a set of plausible mechanisms for Muslim majority disadvantage holding constant distance to school. These mechanisms include beliefs about the economic returns to education as well as the role of religious beliefs and practices in shaping decisions around formal schooling.

Survey design

A household survey of parents with school-age children was conducted in July and August 2014. The survey took place in two districts in Malawi, one majority Muslim (Mangochi) and one minority Muslim (Chiradzulu),⁵⁹ with populations that are 72% and 10% Muslim, respectively, according to the 2008 census. Both are located in the southern region of Malawi. These two districts were selected because they hold constant several potentially relevant factors, including sub-national region, and to a large extent, ethnicity, while varying the concentration of Muslims within the district. The majority of Muslims in both districts are members of the Yao ethnic group, while Christians are from several ethnic groups, including the Yao.⁶⁰ The two districts vary with respect to Muslim educational attainment. Among children between the ages of eight and twelve, the percentage of those in school in the Muslim majority district is 80 percent for Christians but is only 59 percent among Muslims. In the Muslim minority district, the percentage of children in school is 86 percent and 89 percent for Christians and Muslims, respectively, a difference that is not statistically significant.

The survey was conducted in 50 enumeration areas, 25 in each of the two districts. The districts are divided into Traditional Authority (TA) areas, each of which have a number of enumeration areas (EA). Within each district, I constructed a variable that is the quintile of the percentage Muslim of the EA within each district. That is, after calculating the percentage Muslim of the EA, for each district, the enumeration areas were assigned to a quintile of percentage Muslim. Then,

⁵⁹For simplicity, I will refer to these districts throughout the remainder of the paper as the Muslim majority and Muslim minority district, respectively, instead of by their proper names.

⁶⁰Ideally, the survey would hold ethnicity constant, but administering the survey to only Yao respondents was logistically and financially impossible. In all analyses I control for respondents' ethnicity.

five TAs were selected in each district, and five EAs were randomly selected in each TA, one from each quintile.⁶¹

Within each EA, twelve respondents were randomly selected, stratified by religion and gender.⁶² Enumerators used a random-walk approach to identify households, each conducting one interview of each respondent type in each EA. We targeted a total of 600 respondents, 75 of each of the four respondent types in each district.⁶³ Because an equal number of Christians and Muslims were selected in each EA, physical access, in terms of distance to a school, is ruled out as a potential mechanism. The EAs are geographic units that are small enough that those living within an EA have equal access to schools.

Two additional variables were considered in household selection. First, since a central goal of the study was to compare behavior across religious groups, respondents were required to self-identify as either Christian or Muslim in order to participate in the survey.⁶⁴ Second, because I sought to explain schooling behavior, respondents were only included in the sample if there was a child between the ages of 5 and 13 living in the household. The survey includes the schooling history of 1,282 children between the ages of 5 and 18 living in the households of the respondents.

The average respondent was around forty years old and the average household size was just over five members. As expected, Muslims in the majority Muslim district were far less likely to be literate than any other group (29 percent literate compared to 59 percent or higher for the other groups), and Muslim respondents in the majority Muslim district were far more likely to have at least one child of school going age who was not attending school at the time of the survey (42 percent with at least one child out of school compared to 27 percent or less for the other groups).

⁶¹The one exception is that TA Nkalo in Chiradzulu included six EAs and TA Nchemba included four EAs, as there were only four TAs in Chiradzulu that included EAs for every quintile.

⁶²On the advice of the research firm implementing the survey, I excluded enumeration areas that had less than 60 individuals of the minority religion, according to the 2008 census. This was done primarily for logistical purposes, so that all four types of respondents could be included in each EA.

⁶³The final sample size was 596, with 148 Christian men, 150 Christian women, 147 Muslim men, and 151 Muslim women.

⁶⁴A very small minority of Malawians state “other” or “no religion” in Malawi. Thus, this selection criterion excluded only a tiny fraction of the population in any given EA.

In the analysis of the survey data, I compare outcomes across the two religious groups and districts. Individuals are not randomly assigned to districts, and thus not randomly assigned to Muslim majority or minority status. One analytic concern, therefore, is the potential for the sorting of individuals into majority and minority Muslim areas. To address this concern, respondents were asked about their district of birth, to assess the extent to which sorting in the short-term may be occurring. An examination of birth district reveals that while the vast majority of Muslims continue to reside in their district of birth, a large percentage of Christians living in the Muslim majority district (but not the Muslim minority district) are migrants from other districts. An analysis of only those who are residents of the district in which they were born yields similar results as those presented below.⁶⁵

Although I am able to address issues of short-term sorting, it is possible that sorting happened at an earlier period, and that the kind of families who live in a Muslim majority area are different from those who live in a Muslim minority area in ways that matter to the outcome of interest. For example, perhaps more entrepreneurial families, or those with a greater interest in pursuing education, moved closer to work opportunities, which may be more available in the Muslim minority district. It is indeed the case that the Muslim minority district is closer to Malawi's second largest city, Blantyre, considered Malawi's commercial capital, than the Muslim majority district. Although I cannot completely rule out the possibility of long-term sorting, some concern can be alleviated by the fact that until 1974, Zomba, a city located in between the two districts, was the capital of Malawi (and of colonial Nyasaland, and the British Central Africa Protectorate before that), and was the place where many administrative jobs would have been located. Thus, those living in both the Muslim minority and majority districts until that time would have been more or less equally well-placed to access administrative jobs.

The fact that individuals are not randomly assigned to majority or minority status means that any differences I find may not be due to demographics alone, but any other number of factors that vary across the two areas, a problem compounded by the fact that there are only two districts in

⁶⁵ Analysis of only native residents is available for selected dependent variables in the online appendix.

the sample. I am less concerned with this limitation, because I am interested in more than whether Muslim majority status has a causal effect on educational investments, which cannot be fully addressed with this design. Rather, I am interested in determining whether or not there is evidence to support a set of plausible mechanisms that underlie the relationship between percent Muslim of a given area and Muslim educational attainment, which may include processes or historical factors that go beyond demographics alone.

Empirical Strategy

Analysis of the survey data is conducted at the individual-level, and compares outcomes across the religious groups in the two districts. Thus, for most of the outcome variables, the primary analysis is conducted by estimating OLS regressions taking the following form:

$$y_i = \beta_0 + \beta_1 Majority_i + \beta_2 Muslim_i + \beta_3 Majority_i * Muslim_i + \beta_4 X_i + \epsilon_i \quad (1)$$

Where y is the outcome of interest for individual i , $Majority$ takes a value of 1 if the individual resides in the Muslim majority district and 0 if they reside in the Muslim minority district, $Muslim$ takes a value of 1 for Muslim individuals and 0 for Christian individuals, X is a vector of covariates that includes age, gender, education, employment status, and ethnicity, and ϵ is the error term. Standard errors are clustered by enumeration area. The key coefficient of interest is β_3 , the interaction term between $Majority$ and $Muslim$, since I am seeking to explain why Muslims living in the majority district experience worse educational outcomes than Muslims living in the minority district and than Christians living in the majority district.⁶⁶ For the survey experiments, described in more detail below, I conduct a triple interaction between $Majority$, $Muslim$, and $Treatment$. I examine whether the effect of the treatment varies across Muslim populations in the majority and minority context, and between Christians and Muslims living in the majority Muslim

⁶⁶A full description of dependent, independent, and control variables is available in the online appendix.

district.

Economic Valuation of Education

The first set of mechanisms I test are related to the economic value of education. Do Muslim parents living in Muslim majority areas have lower estimates about the economic returns to formal education? Lower estimates could emerge for several reasons, including a lack of information about actual returns or perceived discrimination against Muslims in the formal labor market.

Estimated Returns to Education

The most basic test of this mechanism is to compare beliefs about returns to education, both for a respondent's own child as well as for the average Malawian. To estimate expected returns, the survey relied on measures used elsewhere,⁶⁷ which asks respondents to estimate monthly income for an adult who has attained a given level of education. The question is then asked iteratively over several levels of educational attainment, including none, some primary, complete primary, and complete secondary. The survey included two versions of the question, one asking for monthly income estimates for the average Malawian man at age twenty-five, and one for a boy from the respondent's household when he reached twenty-five years of age.

Figure 5 shows the mean expected income in Malawian Kwacha after completing various levels of schooling, by religion and district.⁶⁸ There were no significant differences in expected returns to education at any level of education across the groups, a strong piece of evidence that demand for education, as measured by expected economic returns, is similar regardless of religion and Muslim

⁶⁷Jensen 2010.

⁶⁸Data presented on perceived returns to schooling have been cleaned to exclude estimated income at the 99th percentile of the distribution. This is because estimates at the 99th percentile are likely the result of enumerator error, for example, adding an extra zero. Results are similar for the 95th percentile. Collecting accurate income data is notoriously difficult, and in the household survey was estimated using an asset-based wealth index, so it is not possible to know how accurate respondents' estimates are.

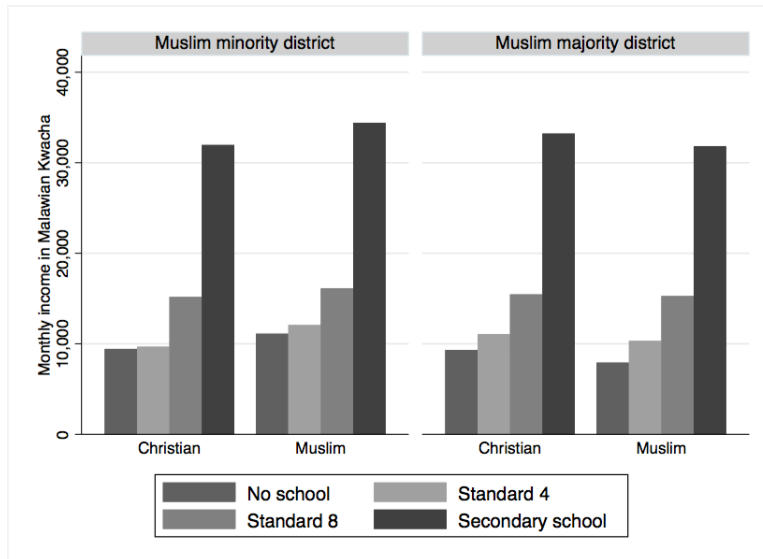


Figure 5: Mean expected income across levels of schooling, by religion and district

majority status.⁶⁹

Perceived Discrimination in the Formal Labor Market

A second economic explanation is that of perceived discrimination in the formal labor market.⁷⁰ Even if Muslims in Muslim majority areas hold similar beliefs about the returns to education for the average Malawian, real or perceived discrimination toward Muslims in the labor market may affect educational investments by reducing the real or perceived returns to education across groups.⁷¹ If individuals face discrimination based on their religious identity in obtaining jobs requiring formal education (such as the civil service) they may face effectively lower returns to education and choose to invest less in education than those who do not perceive discrimination. Discrimination has been explored as a mechanism for low investment in education in other contexts, such as girls' schooling, and discrimination against Muslims in the labor market has been identified in other settings.⁷²

If discrimination underlies low educational attainment among Muslims in Muslim majority

⁶⁹Results shown in tabular form are in the online appendix.

⁷⁰In interviews with teachers, community leaders, and academics in Malawi, discrimination against Muslims in the formal labor market was mentioned occasionally, although not universally.

⁷¹Welch 1967; Lundberg and Startz 1983.

⁷²Adida, Laitin, and Valfort 2010.

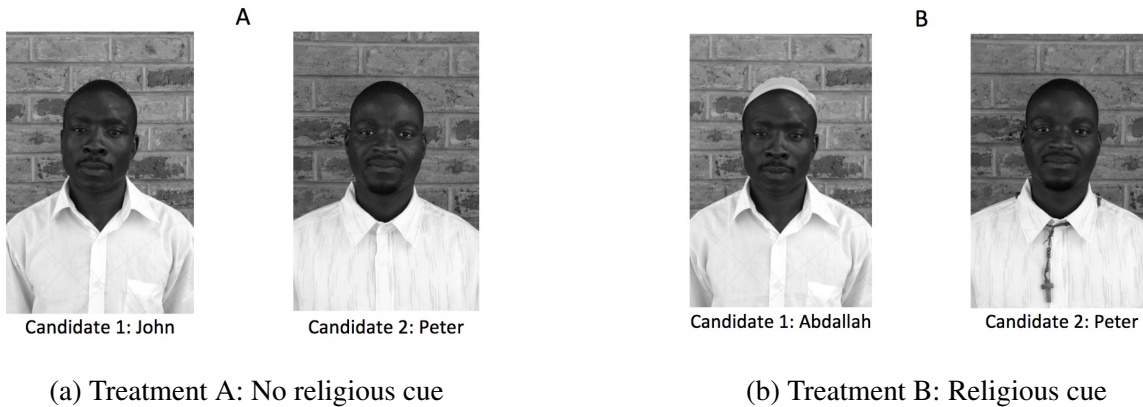


Figure 6: Images shown in perceived discrimination experiment

areas, we should expect that Muslims living in Muslim majority areas are more likely to perceive discrimination against Muslims in the formal labor market than Muslims in the Muslim minority areas. We would also expect Muslims to have different estimates of returns to education for their own children versus the average (Christian) Malawian.

To test the discrimination mechanism, I employ a survey experiment in which respondents are presented with profiles of two individuals seeking employment as government primary school teachers and asked which individual is more likely to be hired for the job. Half of respondents were randomly assigned to view profiles with no religious cue, and half were assigned to view profiles with a religious cue provided visually and through the name of the individual, where one individual was clearly identified as Muslim and one as Christian. The images of the two individuals are shown in Figure 6.⁷³

The main dependent variable for this analysis is a dichotomous variable indicating which of the two candidates they believe is most likely to be hired. If it is the case that Muslims in Muslim majority areas perceive greater discrimination against Muslims than Muslims in Muslim minority areas or than Christians in Muslim majority areas, we should expect to see that, when provided the religion cue of the respondent (treatment B), Muslim respondents in the majority Muslim district are more likely to say that the Christian candidate will be hired – that is, less likely to believe the

⁷³Details of the precise information provided to the respondents about the two individuals is available in the online appendix.

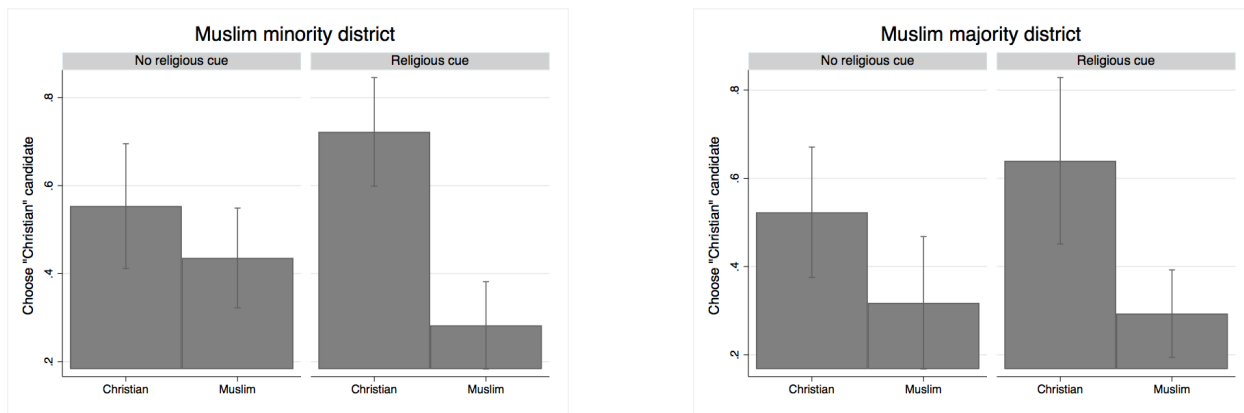


Figure 7: Belief that Christian candidate will be hired, predicted values by treatment, religion and district

Muslim candidate will be hired.

In fact, if anything, in the presence of a religious cue about the identity of the job candidate, Muslims are more likely to say the *Muslim* candidate will get the job. Although I do not find evidence that Muslims living as a majority perceive greater discrimination than those living as a minority, the discrimination experiment yielded interesting results in that both Christians and Muslims receiving the religious cue were more likely than those absent the cue to say that their co-religionist candidates would be more likely to get the job as primary school teacher (see Figure 7) and that they would prefer the co-religionist candidate to teach their children. I do not find that Muslims living as a majority have significantly lower estimates of the returns to education for their own child as compared to the average Malawian, further suggesting that they do not perceive that discrimination affects their children's employment chances.

Together the evidence suggests that Muslim parents in Muslim majority areas do not have substantially different economic valuations of the returns to formal education.

Religious Beliefs and Practice

Next I investigate a set of mechanisms related to the role of religious beliefs and practice in affecting school attendance. One of the primary ways religious beliefs may affect rates of formal school

is through a trade-off between spending time and resources on one of two types of schooling: religious and formal.⁷⁴ Across the Muslim world, and across African countries, there are many varieties of Islamic religious education.⁷⁵ In Malawi, religious school takes place outside the formal education sector, but generally does not serve as a substitute for formal schools. Muslim community leaders and local officials report that Muslim children attend madrasa for multiple hours in the afternoons, and sometimes on Saturday mornings as well. Meanwhile, Christian children usually only attend religious school on Sundays.

Even if madrasa is not a substitute for formal schooling, Muslims may face a schooling trade-off that Christians do not, in that they must decide how to allocate time and resources between two types of school, religious and formal. This trade-off may be particularly pronounced in Muslim majority areas, for example if there is greater social pressure to prioritize religious education. To test this mechanism, I include several survey measures regarding attitudes toward the attendance of religious school and the relative importance of formal versus religious school, as well as a survey experiment designed to test the role of social pressure in affecting the choice over where to spend resources across school types, the results of which I discuss in turn.

While Muslims do indeed report spending more time in religious school than Christians – Muslim children attend religious school an average of 2.2 days a week, as compared to Christian children for an average of less than one day a week – Muslims in the Muslim majority district were substantially *less* likely to attend madrasa than those living as a minority. For example, while 64 percent of Muslim respondents in the Muslim minority district reported attending madrasa, while only 33 percent of Muslims reported attending in the Muslim majority area.⁷⁶ I also find no evidence to suggest that Muslims living as a majority have a preference for religious *over* formal school, measured by the time they report children should spend in each type of school or when forced to make a choice of one type of school over the other.

⁷⁴Here, formal refers to primary and secondary school where children are taught according to national curricula.

⁷⁵Launay 2016.

⁷⁶Anecdotal evidence from interviews suggested that those in Muslim majority areas often could not afford to pay a sheik to stay in residence to teach madrasa.

To test the possibility that Muslims living as a majority face greater social pressure to prioritize religious school over formal, I designed an experiment that included a behavioral component – making a monetary donation to either a religious or primary school, where the treatment was whether donation was public or private. At the conclusion of the survey, respondents were told, *“Thank you for participating in this survey. As a small token of appreciation, the research team would like to make a donation of 2000 Kwacha [about US\$5] to the educational institution of your choice.”* Respondents were randomly assigned to one of two treatment groups in which information about the degree of anonymity of the donation varied. One group was told the donation would be anonymous and the other was told the receiving institution would be informed the donation had been made on the respondent’s behalf.⁷⁷ The enumerator then placed the 2000 Kwacha in an envelope to be delivered to the institution of the respondents’ choice. Those in the public condition had their names written on the envelope while those in the private condition did not. Following the interview, the enumerator delivered the envelopes to the respective institutions.

If Muslims living as a majority face greater social pressure to support and send their children to religious school, we would expect that Muslims living in the majority Muslim district would be more likely to donate to the religious school when the contribution is public than private, and compared to respondents in the minority Muslim district faced with the same choice. In fact, there are no differences between the effect of the public and private treatments arms for donation choice, suggesting that respondents did not feel social pressure to choose one type of school over another if they knew their donation would be public. If anything, Muslims across the two districts look quite similar in their behavior while Christians across the districts diverge sharply, regardless of treatment, as shown in Figure 8.

Finally, it is possible that Muslim parents remain concerned about the religious affiliation of schools and teachers in a context where many if not most schools are established by Christian organizations and where the majority of teachers are Christian, and where there has historically been

⁷⁷Details of the experimental design can be found in the online appendix.

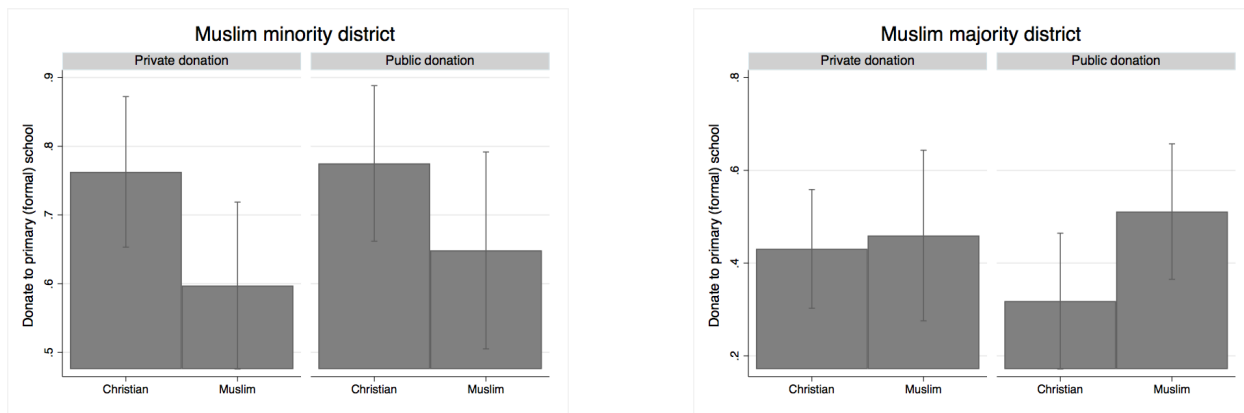


Figure 8: Predicted value of donating to formal school by treatment and religion

a threat of conversion.⁷⁸ The survey included questions to gauge attitudes and preferences toward schools established by various proprietors, but it does not appear that Muslim in the majority area exhibit different attitudes toward Christian schools than those in Muslim minority areas. Further, as discussed below, in interviews in Muslim majority areas, parents stated that teachers' religious affiliation did not affect schooling decisions.

Together, these findings provide no evidence to suggest that the displacement of formal school by religious schooling is a compelling explanation for Muslim majority disadvantage, or that Muslims in these areas remain fearful of conversion through formal schooling, at least in the case of Malawi.

Culture and the Social Returns to Schooling

Thus far, we have seen that Muslim majority disadvantage persists after controlling for wealth and distance to school. Muslims in Muslim majority areas have similar estimates of the returns to formal schooling, and there is no evidence that religious beliefs or practice explain low schooling attendance in Muslim majority areas.

Between late 2016 and early 2018, two research assistants and I returned to the study districts

⁷⁸According to the census, even in Muslim majority districts, most teachers are Christian.

and two additional districts with large Muslim populations to gather qualitative evidence to probe additional mechanisms. This qualitative data was collected precisely because there was so little evidence supporting the mechanisms examined in the original survey. Together, we conducted interviews with around 90 respondents in ten villages – five in the Muslim majority district and five in the Muslim minority district. We interviewed parents, teachers, religious leaders, and the village heads. Parents were eligible to be interviewed so long as they had children of school going age. Appointments with interviewees were scheduled with assistance of the village headman or his or her assistant, and interviews lasted between 30 and 90 minutes, conducted primarily in Chiyao or Chichewa. We also conducted focus groups in six villages and participant observation in two Muslim majority villages. For the participant observation, a research assistant spent one week residing in each village, attending public events and participating in daily tasks and chores around the village, with the consent of the village head and village members.

The starting point for the qualitative interviews came from an open ended question in the 2014 parent survey which asked parents directly for the reason their child was not in school. Among those who had ever attended primary school but did not attend the previous term, the most common explanation was that the child did not want to go (51 percent), followed by illness or injury (23 percent). Only 7 percent reported school fees as a constraint. Among those who had ever attended primary school but were not planning to attend the subsequent term, the most common response was also that the child did not want to go (46 percent) followed by illness or injury (19 percent). These explanations were given at similar rates across groups, but the rate of school absence was substantially higher among Muslims in the Muslim majority district. The fact that most children start school, and that most who drop out say they “did not want to go”, therefore suggested that low attainment may be partly a function of parents’ and communities’ interest or ability to enforce attendance.

Indeed, this explanation came up again repeatedly in in-depth interviews in the Muslim majority villages. Take Amina,⁷⁹ for example, a Muslim woman in her thirties who, at the time of

⁷⁹Pseudonym. Interview conducted in Mangochi district on November 21, 2016.

the interview in late 2016, had nine children. Amina had never attended either formal or religious school, and neither had her parents nor any of her six siblings. She conducts “piecework” – serving as a day laborer for a larger farm – to earn a living. Of the five children living at home with her, the oldest two, aged thirteen and seventeen, had dropped out of school in either the first or second year of primary school, while her six year-old had recently started primary school, located about a kilometer from Amina’s home. Amina reports she has never been to the school or talked to any of the teachers.

She thinks if her children complete school they will get a good job. When probed, the jobs she has in mind are a doctor, or a maid in South Africa, both of which she thinks require education. This is all in the world of hypotheticals, however. She thinks that her children will most likely become farmers, like herself. Amina’s older children told her they did not want to go to school anymore and then stopped attending. Amina says she will continue doing piecework to make sure her 6 year-old daughter can stay in school. However, Amina says she cannot force the children to go to school if they don’t want to. Amina’s experience was similar to others we interviewed in Muslim majority areas, and also reflects the modal response from the parent survey, which is that the reason children are not in school is because children themselves decided to stop.

A number of respondents were less sanguine about education. During the participant observation of one Muslim majority village, a group of men discussed recent efforts by the village chief (a woman who had only recently become chief) and mothers’ groups to keep children in school and re-admit those who had dropped out. One man remarked to his friend, “I am telling you, that cannot work here – [in] other areas, not here in Mangochi. They must respect the values of people and do what they want, because here school is not useful. Even themselves, how far have they gone with education?”⁸⁰

In another village, as we introduced ourselves to the village chief, his school-age grandchildren gathered around to watch. The local primary school was less than 500 meters away, and it was

⁸⁰Man in Muslim majority village, June 2017.

mid-morning. When asked why the children weren't at school, one replied that she was sick, while another said his clothes were torn. This was a common scene throughout our interviews – children of all ages playing in the village during school hours, often in the presence of parents and local leaders. There was no opposition to school reported, but neither were there any apparent social costs to dropping out. In fact, discussion of social costs arose instead in the context of marriage and child-bearing. As one Muslim respondent explained:

“Here we have some cash crops which we plant and sell . . . we can pay school fees but if you ask someone they will tell you that we don't have money for school fees. But what they [really] want is for their children to get married . . . marriage here is like a competition. A role model is one who married and gave birth, and the minimum age for those marriages are 12 to 20 years . . . a boy or a girl who has not married or gotten pregnant is teased and named bad names [about their fertility].”⁸¹

Thus, the expectation for children is not that they will finish school, but rather that they will get married and have children, often at a very young age. As the above quote suggests, there are social costs to deviating from this set of expectations, including teasing and potentially the inability to find a marriage partner.

By contrast, most Christians we spoke to in Muslim majority areas stayed in school until late primary school and often secondary school. In a focus group of young men in a Muslim majority village, comprised mostly of Muslims but also a few Christians, religion was a powerful predictor of educational attainment – the two with any secondary school were both Christian, while those with primary school or no schooling were all Muslim. A focus group with young women in the same village revealed the same pattern – the only one to have reached secondary school was Christian. The economic chances of both Christians and Muslims in this area were quite similar – in this rural and remote village, two hours by car from the district headquarters on a nearly impassable road – even those with secondary education were farmers or self-employed. Despite

⁸¹Participant observation in Muslim majority village, June 2017

similar economic conditions, Christians in Muslim majority areas consistently stayed in school longer than their Muslim neighbors.

Meanwhile, in Muslim minority areas, where both Christians and Muslims attended school in large numbers, respondents reported that Muslims attended school to access economic opportunities as well as to fit in with the majority Christian community. One village leader in the Muslim minority district reported, “now they [Muslims] have realized that school and religion are different and here in Chiradzulu [Muslim minority district] parents are now forcing their children to school to be like their fellow Christians.”⁸² A Muslim mother replied, “here in Chiradzulu everyone knows that if you don’t go to school you will be living in the remote area for the rest of your life.”⁸³ A Muslim religious leader similarly noted, “here [Muslims] are surrounded by Christians who went to school in order to have bright future.”⁸⁴ Our driver, himself a Muslim living in a Muslim minority area, expressed shock upon visiting the Muslim majority areas – where he lives, he explained, “if you don’t go to school, people will laugh at you.” Thus, in addition to the economic benefits of schooling, in the Muslim minority area, there are social benefits of going to school, and social costs to dropping out.

These qualitative data describe two different equilibria. In Muslim minority areas, the vast majority of children attend school and stay in school at least until upper primary, if not higher. Attending school is seen as the obvious thing for a child to do, while staying home or dropping out is frowned upon. In Muslim majority areas, most children start school but drop out after a few years, and some never go. During unannounced visits to a set of Muslim majority villages, school-age children played within eyesight of parents and local leaders during school hours. In these areas, the evidence suggests many parents and children view dropping out as an expected and not particularly problematic behavior – dropping out is simply part of the process of growing up, an expected course of events as a child works toward independence, followed by getting married and having their own children, at which point the cycle is repeated. Christians and Muslims interact

⁸²Interview with respondent KMH2 on February 2, 2017.

⁸³Interview with respondent LKP10 on February 3, 2017.

⁸⁴Interview with respondent LKR5 on February 4, 2017.

with one another, but Christians stay in school longer, even if, at the end of the day, practically everyone ends up farming or fishing to earn a living. In fact, household survey data show that Christians and Muslims in both districts hold similar occupations.

Towards a Cultural Theory of Persistent Educational Inequality

Together, the qualitative evidence suggests that the social costs and benefits of schooling matter for school attendance decisions, and these differ across Muslim minority and majority areas. In the former, school attendance is a social norm, whereas in the latter, this norm is weaker, at least among Muslims.

If this is so, a natural question that arises is, where do these norms come from? Here it is important to emphasize that I am not arguing that norms about formal education are somehow inherently Christian, or inherently un-Islamic, or that formal education is necessarily related to Christian or Muslim values. Rather, I suggest that the production of norms is part of a historical process that has its roots in the association between formal education and Christian missionary efforts in the colonial period. Recall that during the colonial period, the vast majority of schools were established and run by Christian missionaries and their followers. Thus, formal education of the type taught in primary and secondary school came to be associated with Christianity. During the colonial period, Muslims often avoided these schools for fear of conversion. Among the older generation, therefore, many Muslim children were actively discouraged from attending school.

As one 60 year-old man in the Muslim majority district respondent explained, “during my youth, our parents who were Muslims told us that we should not attend school because if we go to school the Christians will give us unclean food (Haram) like mouse and pork and we are supposed to eat only clean (Halaal) food...”⁸⁵ A series of focus groups with elderly Muslims confirm that this threat was very common during the late colonial period. In four focus groups, all twenty-six

⁸⁵Interview with respondent MKP2 on November 22, 2016.

respondents who grew up during the colonial period reported hearing that attending school was risky – you may be converted or forced to engage in activities forbidden by Islam. Often it was parents and religious leaders conveying information about the costs of schooling. They explained:

- “What we heard was that if we go to school we will be converted to Christianity”⁸⁶
- “My parents were saying that we should not go to school because we will not be able to be in heaven paradise.”⁸⁷
- “For the people who didn’t have any religion or any religious belief it was easy to join church or enroll in school without a problem, but Muslims had their beliefs and told their children not to go to school because either you will eat haram food or converted to Christianity. As a result their children didn’t go to school.”⁸⁸
- “My father was saying that I should not go to school and was discouraging [me] because he was saying that with school I will not go to heaven. . . .”⁸⁹
- “The sheikh was telling us that we must be devoted and serve Allah rather than going to school and end up in hell.”⁹⁰
- “Sheikhs discouraged their followers from going to school”⁹¹

This initial threat, combined with lower investment in school infrastructure by Christian missionaries in Muslim areas, shaped patterns of school attendance during the colonial period, opening up a wide gap in educational attainment between those who converted to Christianity and those who did not. The long-term effect of Christian missionaries on educational attainment has been documented elsewhere,⁹² but what has not been investigated is the long-term effect of the culture

⁸⁶Focus group MMS, Respondent 3, April 27, 2018.

⁸⁷Focus group CKM, Respondent 4, April 27, 2018.

⁸⁸Focus group MNS, Respondent 7, April 28, 2018.

⁸⁹Focus group MNS, Respondent 3, April 28, 2018.

⁹⁰Focus group MMS, Respondent 2, April 27, 2018.

⁹¹Focus group CKM2, Respondent 1, April 27, 2018.

⁹²Nunn 2011; Okoye and Pongou 2014.

threat of formal education on Muslim populations. Those who lived as a minority, perhaps due to competition, were somewhat more likely to attend school even during this period as well as to build Muslim-founded schools. It was in Chiradzulu district, with a small Muslim population, that Muslim elites took the lead in founding schools for the Muslim community, and only later did these schools open in Muslim-majority Mangochi.⁹³ With independence in 1963 came a slow secularization of the education sector, and, with the advent of free primary education, introduced by Malawi's first Muslim president, came the massive expansion of the education sector, as shown earlier in Figure 3.

Today, access has improved in Muslim majority areas and few Muslims view education as a threat to their identity – the majority of Muslim parents interviewed stated that conversion was no longer a concern and that they were not worried about the religious affiliation of the school or teachers. For example, when one mother in the Muslim majority district was asked if she worried about her children's ability to maintain their Islamic faith while attending school, she responded, "not at all, because education and religion are different,"⁹⁴ which was a common sentiment. But while the threat of conversion that once went along with formal education is mostly gone, the norm of school attendance has yet to take root. There are still relatively low social costs to dropping out of school.

A cultural explanation for schooling outcomes also makes sense of why Christian children in Muslim majority areas, despite facing similar economic prospects, are less likely to drop out. If there is a norm of school attendance among Christian communities, again part of the legacy of Christian missionary education, Christian children will remain in school even where average school attendance is low. In other words, Christian communities carry the schooling norm with them, even when a minority.

Thus, the persistence of low educational attainment – amidst increasing access to school and increasingly inclusive institutions – is the consequence of beliefs about what children ought to do,

⁹³Lamba 1984.

⁹⁴Interview with respondent CMP3 on November 21, 2017

and the social benefits and costs of staying in school, compared to the alternatives. The emergence of these norms, whether in Africa or elsewhere, is not the result of distinct *values* inherent to the group, but part of a historical process, which causes the social costs and benefits of school attendance vary across groups. At the extreme, costs may include cultural threat, such as religious conversion or loss of other cultural traits, like language. Cultural beliefs are passed down over generations, allowing their effect on educational attainment to persist. The inter-generational effect of cultural beliefs is then compounded by the inter-generational effect of parental education, producing and sustaining a low-education equilibrium.

There are several important caveats in order. The first is that, in highlighting the role of culture, I am not suggesting that institutional and economic factors do not matter for educational attainment. Children in poverty certainly face greater barriers to attend and succeed in school than those coming from richer families, and with poverty comes a host of challenges that make schooling difficult – from malnutrition⁹⁵ and disease⁹⁶ to holding lower aspirations.⁹⁷ I do not wish to suggest that economic factors are irrelevant – on the contrary, there is a wealth of evidence to suggest investment in education is sensitive to both costs and perceived economic returns.⁹⁸ Rather, I show that these factors are *insufficient* to explain persistent educational inequality, at least in this case. Moreover, economic factors can themselves be shaped by cultural beliefs. Poverty, which makes schooling all the more difficult, can be a direct result of cultural beliefs about education. Neither cultural nor economic factors can be addressed in isolation – they reinforce one another.

Relatedly, the second caveat is that while both cultural, economic, and institutional factors shape schooling decisions, the relative role of each may vary across countries and contexts. In Malawi, there is evidence that cultural factors play a large role in explaining the Muslim-Christian education gap, but they may be less important in other countries. More research is needed to determine the relative role of each in other contexts, which should be central to the design of any

⁹⁵Jamison 1986.

⁹⁶Miguel and Kremer 2004.

⁹⁷Raj 2006; Dalton, Ghosal, and Mani 2016.

⁹⁸J-Pal Policy Bulletin 2017.

policy response designed to increase rates of basic schooling.

The third caveat is that there is no evidence to suggest that the cultural beliefs sustaining a low-education equilibrium among Muslims in Muslim majority areas are in anyway inherent to Islam. The very fact that we observe variation *within* the Muslim population – Muslims living in the same country, and who are members of the same ethnic group – suggests that it is local contextual factors rather than religious beliefs, values, or doctrine, that have created distinct cultural beliefs about schooling in Muslim majority and minority areas. It is not animosity to formal education but rather the initial association between formal education and Christianity that led to the emergence of this education gap. Culture is the missing link that explains why educational inequality has persisted, not Islamic values.

If social norms affect schooling outcomes as argued here, there are at least two implications for theory and policy. First, while much work on schooling outcomes has focused either on macro-level factors, such as building more schools, or on individual and family-level factors, such as income, the evidence presented here suggests a central role for community-level factors. Macro-level policies, such as the expansion of the education sector, as well as atomistic approaches targeting individual families, may fail to close education gaps if community-level dynamics – such as social norms – are not also addressed. Second, while there has been considerable interest in economic incentives for school attendance, such as cash transfers,⁹⁹ the findings presented here show that there may also be a role for social incentives that complement economic ones. For example, community-level interventions may change norms, and therefore create the potential to shift a community from a low to high attendance equilibrium. A cultural theory of educational inequality thus points to distinct policy solutions for increasing school attendance, a central goal of both domestic governments and international organizations.

⁹⁹Fiszbein, Schady, Ferreira, Grosh, Keleher, Olinto, and Skoufias 2009; Baird, McIntosh, and Özler 2011; Benhassine, Devoto, Duflo, Dupas, and Pouliquen 2015.

Conclusion

Education is central to economic development and widely viewed as universally valued. Yet inequality in educational attainment across individuals and groups in society is pervasive, and these inequalities are often quite resilient. Well-known and persistent gaps in schooling exist in contexts as diverse as the United States, where the Black-White achievement gap has persisted for decades,¹⁰⁰ India, with a large Hindu-Muslim divide,¹⁰¹ and across sub-Saharan Africa, where Muslims have consistently lower levels of education than Christians.¹⁰² In all of these cases, economic factors are an obvious explanation for education gaps. As shown in this paper, however, economic factors, including poverty and beliefs about the economic returns education, may be insufficient to explain persistent disadvantage and the reproduction of inequality.

This paper has used a particular education inequality, one that is understudied but pervasive in Africa – the Muslim-Christian education gap – to test a set of mechanisms underlying the persistence of educational inequality. Drawing on quantitative and qualitative evidence, I show that the relationship between low educational achievement and the concentration of the Muslim population is not merely due to economic factors, though Muslims in these areas are relatively poor and had lower access to schools historically. Rather, the evidence points to the central role of culture – defined as beliefs rather than values – in explaining persistent low educational attainment among predominantly Muslim communities.

I argue that the association between Christianity and formal education during the colonial period meant that schooling created a cultural threat for Muslims. This threat produced distinct beliefs about the social costs and benefits of schooling between Christians and Muslims and across Muslim minority and majority areas. While the threat of conversion has largely disappeared, the social benefits of schooling remain higher in Muslim minority than majority areas. These find-

¹⁰⁰Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York 1966; Hanushek 2010.

¹⁰¹*Compilation of Observations & recommendations made by Sachar Committee & Ranganath Mishra Commission*; Asadullah, Kambhampati, and Boo 2014.

¹⁰²Platas Izama 2014; Pew Research Center 2016; Manglos-Weber 2017.

ings may help explain why policy efforts to increase schooling that target economic factors – from school fee removal to individual cash transfers – have failed to fully close attainment gaps. As long as there exists a gap in the social returns to schooling, a gap in the educational outcomes will likely persist as well.

I find no evidence that low educational achievement among Muslims is the result of the preference for religious schooling over formal schooling, nor Muslim antagonism toward “Western” education, a common assumption popularized by groups such as Boko Haram. In Malawi, there is no evidence that the Muslim-Christian gap can be explained by practices or values that are distinctly Islamic. In fact, in Malawi, the attendance of religious and formal school among Muslims are positively correlated. While I do not rule out the possibility that a preference for religious schooling may hold in certain contexts, the case of Malawi suggests that it is insufficient to explain the general phenomenon observed across Africa.

This work provides a possible answer to what has been identified as an unresolved puzzle in both the scholarly and policy arena: “if education is universally valued and politicians serve their constituents, why do we see divergence in educational inequality both within and across countries?”¹⁰³ The findings presented here suggest that the assumption that education is universally valued needs to be more closely interrogated. Parents can have the same *economic* valuations of the returns to education, but if this belief is not reinforced beliefs about the *social* returns to schooling, school attendance may be far from universal, particularly where the state is unable to enforce attendance. In this way, culture may help explain persistent inequality in education, with implications for economic and political development.

¹⁰³Gift and Wibbels 2014.

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Appendices

Table A1: Educational Attainment and Muslim Majority Status, Pooled Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Literacy</i>				<i>School Attendance</i>			
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Muslim	-0.242 (0.193)	-0.304*** (0.104)	-0.672*** (0.110)	-0.470*** (0.071)	0.472** (0.192)	0.184** (0.074)	-0.006 (0.062)	0.044 (0.055)
% Muslim admin	0.001 (0.002)	0.001 (0.003)	-0.002 (0.003)	-0.006*** (0.002)	0.001 (0.002)	0.003* (0.002)	0.001 (0.002)	-0.007*** (0.002)
Muslim x % Muslim admin	-0.011** (0.004)	-0.011*** (0.003)	-0.005* (0.003)	-0.003 (0.002)	-0.024*** (0.004)	-0.016*** (0.002)	-0.012*** (0.002)	-0.008*** (0.002)
Urban			1.446*** (0.116)	0.810*** (0.115)			1.362*** (0.133)	0.673*** (0.052)
Female			-0.996*** (0.043)	-0.895*** (0.069)			-0.209*** (0.014)	-0.178*** (0.020)
Birth year			0.035*** (0.001)	0.034*** (0.002)			0.054*** (0.004)	0.084*** (0.004)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnic Group FE	No	No	No	Yes	No	No	No	Yes
Constant	1.011*** (0.283)	1.038*** (0.278)	-66.996*** (2.539)	-66.574*** (3.427)	1.811*** (0.081)	1.720*** (0.055)	-105.968*** (8.521)	-166.484*** (8.125)
N	11758868	11768102	11059641	5597645	7005800	7009542	6811451	3296806

Notes: *** indicates 99% confidence level; ** indicates 95% confidence level. * indicates 90% confidence level. All models are specified as logistic regression with clustered standard errors by administrative unit. Models 1 and 2, and 5 and 6, do not include covariates. Models 1 and 5 include sampling weights provided by IPUMS. Models 3 and 7 include urban, female, and birth year as covariates, and models 4 and 8 include the same covariates in addition to ethnic group fixed effects.

Table A2: Educational Attainment and Muslim Majority Status, by Country

	<i>Adult Literacy, ages 18 and above</i>										
	Burkina	Cameroon	Ethiopia	Ghana	Malawi	Mali	Mozam.	Nigeria	Senegal	Sierra Leone	Uganda
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Muslim	0.403 (0.505)	-1.653*** (0.257)	0.344** (0.149)	-1.072*** (0.103)	-0.057 (0.182)	0.321 (0.696)	-0.110 (0.194)	-0.943*** (0.340)	-0.507 (0.591)	0.552 (1.171)	0.837*** (0.212)
% Muslim	0.013*** (0.005)	-0.036*** (0.012)	0.014*** (0.003)	-0.021*** (0.008)	-0.002 (0.003)	0.017*** (0.006)	-0.012** (0.005)	-0.007** (0.003)	0.000 (0.003)	-0.012 (0.029)	0.025* (0.014)
Muslim x % Muslim	-0.026*** (0.009)	0.022* (0.011)	-0.026*** (0.004)	0.003 (0.006)	-0.017*** (0.004)	-0.012 (0.008)	-0.002 (0.006)	0.006 (0.006)	0.004 (0.007)	-0.019 (0.016)	-0.044*** (0.010)
Constant	-1.280*** (0.239)	1.799*** (0.290)	-0.982*** (0.203)	1.309*** (0.151)	0.917*** (0.130)	-1.770*** (0.434)	0.225 (0.138)	1.221*** (0.113)	-0.382 (0.243)	0.871 (2.353)	0.188* (0.108)
N	836484	777489	2886906	2032203	1044984	587454	700406	38474	817696	252989	1793017
	<i>School Attendance, ages 6 to 17</i>										
	Burkina	Cameroon	Ethiopia	Ghana	Malawi	Mali	Mozam.	Nigeria	Senegal	Sierra Leone	Uganda
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Muslim	0.038 (0.429)	-0.416*** (0.128)	0.367** (0.158)	-0.583*** (0.085)	0.064 (0.132)	-0.411 (0.844)	-0.207 (0.150)	-0.535 (0.489)	5.916*** (2.253)	0.056 (0.851)	0.554*** (0.121)
% Muslim	0.007* (0.004)	-0.004** (0.002)	0.011*** (0.002)	-0.024*** (0.004)	-0.001 (0.002)	0.002 (0.003)	-0.015*** (0.004)	-0.015*** (0.004)	-0.014*** (0.004)	-0.018 (0.019)	0.022*** (0.008)
Muslim x % Muslim	-0.015* (0.008)	0.001 (0.004)	-0.025*** (0.003)	0.010*** (0.003)	-0.012*** (0.003)	-0.003 (0.009)	0.002 (0.004)	-0.005 (0.008)	-0.073*** (0.024)	-0.007 (0.012)	-0.022*** (0.007)
Constant	-0.156 (0.161)	1.797*** (0.037)	-1.314*** (0.181)	1.950*** (0.066)	0.910*** (0.084)	0.338 (0.280)	1.086*** (0.108)	2.776*** (0.213)	1.996*** (0.361)	2.554* (1.449)	0.807*** (0.116)
N	350425	389798	1911444	1048690	627107	414171	428469	20252	489901	136665	1192620

Notes: *** indicates 99% confidence level; ** indicates 95% confidence level. * indicates 90% confidence level. All models are specified as logistic regression with clustered standard errors by administrative unit.