Resisting Modernisation under Foreign Occupation: The Role of Religious Identity

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Abstract

Religious groups sometimes resist modern welfare-enhancing interventions, adversely affecting the group's human capital levels. In this context, we study whether the literacy rates of the two largest religious groups in India (Hindus and Muslims) were affected because they shared religious identity with the rulers deposed by the British colonisers. We find that Muslim literacy in an Indian district under the British is lower where the deposed ruler was a Muslim, while Hindu literacy is lower where the deposed ruler was a Hindu. To deal with possible omitted variable bias, we instrument the religion of the deposed ruler with the distance from the birthplace of Shivaji, a Hindu king who rebelled against the Muslim empire. We find other results consistent with the hypothesis that religious groups resisted education and knowledge introduced by the foreign occupiers when they shared their religious identity with the dislodged local rulers.

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1 Introduction

Religious groups sometimes resist modern inventions/institutions that lead these groups to lower human capital outcomes.[1] For instance, Lewis (2003) while discussing the reasons for the decline of Islamic civilization in the Middle East, argues that the Islamic world was unwilling to learn the new sciences and education from their western political rivals. He writes, "The relationship between Christendom and Islam in the sciences was now reversed. Those who had been disciples now became teachers; those who had been masters became pupils, often reluctant and resentful pupils." In this context, we study how a religious group living under the regime of a foreign political rival is affected by modern education introduced by the occupier.

We particularly focus on whether sharing religious identity with a deposed local ruler affects the literacy outcomes of a religious group under a colonial regime. Sharing religious identity with the deposed ruler can affect the literacy outcomes of the religious group due to many reasons. For instance, foreign occupiers might discriminate against the religious group of the deposed ruler due to fear of rebellion. It can also be the case that, when the ruler is deposed, his religious community may feel aggrieved. Thus, they might refuse to take up modern education introduced by the colonizers, even against their economic interests. On the other hand, the impact of foreign occupation can also be positive. For example, the religious group of the ruler might have acquired certain economic advantages under his regime and continue to prosper under the foreign rulers. Similarly, suppose the local ruler and colonizer reach an amicable settlement on the terms of the rule. In that case, the ruler may facilitate the participation of his religious community in the education system introduced by the occupier.

We study this question in the context of the colonisation of India. Two large religious communities, Hindus and Muslims, lived together in the country before British colonisation. The British, during the process of colonisation, deposed many existing rulers. These rulers

[1] See Martinez-Bravo and Stegmann (2020)

belonged to different religions, predominantly Hinduism and Islam.[2] We construct a novel data set combining the religion of the deposed ruler using the Imperial Gazetteer of India (Hunter, 1908), with the literacy outcomes of Hindus and Muslims at the district level using census data for 1881, 1911 and 1921.

We find that Muslim literacy is 2 percentage points (p.p.) lower in districts where the ruler deposed by the British was Muslim. Similarly, Hindu literacy is 1.5 p.p. lower in regions where the deposed ruler was Hindu. These results are robust to controlling for demographic variables such as population shares of different religions, different castes, and average household size. They are also robust to including local geographic factors like a coastal dummy, major census city, altitude, latitude, and longitude. We also include local development measures as controls, including urbanisation, occupation classes (industry and agriculture) and port city.

Moreover, although we have many geographic, demographic and economic controls, bias caused by omitted variables is still possible. We deal with it in two ways. First, we take the difference in literacy rates of the two religious communities as the dependent variable. This difference cancels out any variable affecting literacy across districts. Our results remain robust to this specification. Second, we use an instrumental variable approach. We use the spatial progression of the Maratha Hindu rebellion from the birthplace of Shivaji to identify the exogenous variation in the religion of the deposed ruler. Shivaji was a rebel king who became a symbol of the Maratha Hindu Rebellion (Vartak, 1999). Results are robust to this specification as well.

Exploring mechanisms, we find results consistent with the hypothesis that when the western colonisers replaced Islamic rulers, Muslims' 'sense of pride' was hurt. Thus, they refused to take up western education (Lewis, 2003; Aziz, 1967). Abdul Lateef, a Muslim reformer promoting modern education in colonial Bengal (province in India), describes the

[2]Others include rulers of religions like Sikhism. We discuss this in greater detail in the main body of the paper. See section 3.

condition in 1885 in his own words[3]

> *"Mahomedan youth kept themselves aloof from the English schools and the new knowledge. This was attributed to the natural pride and the great bigotry of the Mahomedans ..... It was an obvious effect of history"*

Belmekki (2007), reviewing the impact of British rule on Muslims in India, states that[4]

> *"When Muslim hegemony was gone and real power lay with the British, the Muslims would not, could not, forget that they had once ruled over the land. Their reaction was bitter and truculent"*

The above argument depends on the subjects identifying with the ruler. We posit that this 'self-identification' with the ruler will be higher in the *core* of the kingdom than in the *periphery*.[5] Thus, it should be the case that the resistance to western education is stronger at the *core* of the kingdom than the *periphery*. We define the *periphery* as the districts that share a border with states ruled by kings of other religions (all others are considered *core*). We find that all the negative effect on literacy associated with the religion of the deposed comes from the *core* of the annexed kingdom. Thus, we find evidence consistent with the hypothesis that Muslims resisted western education because those who identified with the deposed rulers felt aggrieved. We document a similar result for the Hindus.

We also consider other plausible mechanisms that could explain the above results. For example, Metcalf and Metcalf (2006) argue that the British excluded the old (Muslim) aristocracy from all higher posts in the government because they discriminated against the community that had previously held political power. This discrimination could lower the education outcomes of Muslims, lowering their incentives to get educated. However, using

[3]For the full quote, see Section 3. These excerpts are taken from Firdous (2015).

[4]Belmekki (2007) refers to Aziz (1967)

[5]Many historians have argued that the sovereignty of kings at the end of the medieval period in India (after the year 1707) existed only in core regions of their state and not in the periphery. See, Malik (1990),and Stein (1999). Also, political theorists who study kingdoms and empires argue that the relationship between rulers and subjects in the *periphery* is different from the relationship between rulers and subjects in the *core*. We discuss this more in Section 3

employment records of the British bureaucracy, we find that Muslim employment rates in these services are not lower in regions where the final ruler was Muslim. The same is true for Hindus.[6]

We also investigate if Muslim literacy is lower under Muslim kings and Hindu literacy lower under Hindu kings where the ruler is not deposed by the British during colonisation.[7] We document higher Muslim literacy in districts ruled by Muslim kings and do not find a negative effect for Hindus under Hindu kings. These results are consistent with the claim that the ruler's deposition plays a vital role in lowering the literacy outcomes of his religious group. We also check whether the results are driven by people unwilling to leave religious institutions for secular education Chaudhary and Rubin (2011) or just erstwhile ruling elites unwilling to attend schools introduced by the British. However, we find certain results inconsistent with these explanations.[8]

To the best of our knowledge, our paper is the first to provide empirical evidence that the literacy outcomes of a group can be adversely affected by colonial powers deposing local rulers with whom the group shares its religious identity. Thus, our paper sheds light on how pre-colonial associations that existed because of religious identities interacted with colonisation to affect human capital outcomes. Hence, our paper contributes to the growing literature about the significance of pre-colonial factors for long-run development (Gennaioli and Rainer, 2007; Michalopoulos and Papaioannou, 2013; Dell et al., 2018).

Furthermore, though providing evidence for the exact mechanism is beyond the scope of this paper, the results are consistent with the hypothesis that when foreign occupiers dislodge local rulers, the religious group of the local rulers show resistance to the education

[6]The British might not discriminate at the employment level against the community of the deposed ruler but might provide fewer educational opportunities to them at the level of the provisioning of schools and educational scholarships. However, this does not seem to be true. British ensured that communities not doing well in school enrollment (usually Muslim) were eligible for scholarships and reduced fees in public schools. The colonial government established several schools in Muslim majority districts (Progress of Education in India, Quinquennial Reviews, 1897–1927, (Cotton, 1898)).

[7]We document literacy outcomes of those regions in India that were under the indirect rule of the British. See section 5 for details.

[8]These are discussed in greater detail in section 5.

and knowledge introduced by the occupiers. Thus, we give some quantitative evidence supporting the hypothesis espoused by many historians like Lewis (2003) and Aziz (1967). However, though these historians have mainly discussed this resistance hypothesis for Islam and its followers, we find similar effects for Hindus in India. Thus, the results shed light on the fact that even followers of non-Islamic religions disliked their rulers being removed and refused to take up western education. Now, we present a discussion on the other literature related to our work to conclude this section.

1.1 Related Literature

Religion and Human Capital formation: Our paper contributes to the literature on how the religion of people affects their human capital formation (Becker and Woessmann (2009), Saleh (2018)). These papers discuss how specific **religious practices** affect human capital formation. Our work departs from these papers by highlighting the role of **religion as an identity** rather than as just a practice.[9] Our paper shows that sharing religious identity with leaders who lose in a regime change can adversely affect a group's human capital outcomes.

Religion and modernity: Another strand of literature that our paper contributes to is the literature that studies the relationship between religion and modernity (Carvalho (2013), Binzel and Carvalho (2017), Bazzi et al. (2019)). These papers focus on how modern life and reforms led to a revival of religious practices in various places. However, there is little empirical evidence in the economics literature on whether religious groups resisted modernity because of their religious identity. We find evidence consistent with the hypothesis that Islamic civilisation resisted modern education because of losing political power (Lewis (2003), Aziz (1967)). We also provide evidence that this resistance was not limited to Muslims. Our paper is, to the best of our knowledge, the first to find evidence consistent with the idea that even Hindus in British India resisted western education where the deposed

[9]There is a strand of literature on identity and economic outcomes starting from Akerlof and Kranton (2000).

ruler was Hindu.

Resistance to western interventions: Finally, our paper contributes to the literature that studies resistance to specific western interventions by people most likely to gain from those interventions. Lowes and Montero (2018) argue that forced medical interventions reduced trust in medicine in Africa. Martinez-Bravo and Stegmann (2020) argues that misinformation against vaccines, propagated by the Taliban, effectively reduced the demand for them in Pakistan. We contribute to this literature by providing evidence consistent with the hypothesis that resistance to western education emerged in religious groups because of their opposition to the foreign occupation that deposed their local ruler.

The rest of the paper is structured as follows. The next section discusses the conceptual framework. Section 3 discusses the historical background and data sources used in the empirical analysis. Section 4 discusses the paper's main results. Section 5 discusses the plausibility of various other mechanisms and robustness checks. Finally, Section 6 concludes.

2 Conceptual Framework

In this section, we discuss the different channels through which sharing religious identity with a deposed ruler can change the literacy outcomes of the group under foreign occupation. In particular, we discuss how two different yet plausible mechanisms give different testable predictions. The framework developed helps us disentangle different reasons as to why sharing religious identity with a deposed ruler is affecting the literacy outcomes of the religious group.

First, we will discuss the reason proposed by Lewis (2003) and Aziz (1967) and what kinds of predictions should be seen in the data if this reason was valid. These historians have argued that followers of Islam were reluctant to pursue education provided by the West because they resented losing political power to western regimes. If this argument is correct, the first prediction that should hold is that Muslims should have lower literacy in those

regions where Islamic rulers directly lost power to western occupiers as opposed to regions where they did not hold political power when colonizers took over.

Moreover, though these historians have discussed this behaviour only among Muslims, the above argument is independent of Islam's religious practice or teachings. Any religious group whose ruler is deposed by a foreign power should resist the education system introduced by the foreign occupier. Thus, even though historians have not discussed this effect on Hindus in India, we still should find similar effects for them. Hindus should also have lower literacy in those regions where Hindu rulers directly lost power to the British as opposed to regions where they did not hold political power when the British occupied the region.

However, the above argument does rely on a homogeneous religious identity of the subjects and their amicable association with the deposed ruler. Thus, if a religious group has more within-group fragmentation and some of these groups do not have an amicable association with the deposed ruler, they would not mind the British deposing the ruler. Thus, we would find that the negative relationship between literacy and religion of the deposed ruler will be lower for such a religious group. This sort of within-group fragmentation is usually considered higher among Hindus due to the historical presence of the caste system.[10] Moreover, some of these castes supported the British against the local Hindu rulers. For example, the caste of *Mahars* (considered untouchables in the caste hierarchy) supported the British against the local *Peshwa* (upper caste brahmin) Hindu rulers in the Battle of Koregaon.[11] Thus, the effect of deposing the local ruler should be lower among Hindus than a comparatively more monolithic identity of the followers of Islam.

The argument of Aziz (1967) crucially rests on subjects identifying with the deposed ruler. Historians argue that the sovereignty of kings did not extend beyond the *core* region of the kingdom at the end of the medieval period in India. Thus, subjects in *periphery* districts might not feel as associated with the ruler as subjects in the *core*.[12] If we assume

[10] see, Deshpande (2010)

[11] see, Geppert and Müller (2015)

[12] This is the time of the collapse of the Mughal Empire after 1707. For greater details, see section 3

that 'self-identification' with the ruler is higher at the kingdom's core than at the periphery, then the above hypothesis yields additional predictions. Particularly, given that subjects at the periphery do not consider the ruler sovereign, the resistance to western education should be weaker there than in the core. We test this prediction in Section 4.

Another prediction that emerges from analyzing the above historical argument is that if the British colonizers and the local rulers reach an amicable settlement concerning the terms of rule, then the religious group of the local ruler should not resist western education. In the case of colonial India, this implies that districts that were under the indirect rule of the British[13] should behave differently than those under direct rule. Under the indirect rule, the local rulers were not generally deposed but were responsible for the local administration and collected revenue on behalf of the British. Hence, if districts are ruled indirectly, then the literacy of the subjects should not be lower under the ruler of their religion. We also investigate this in our analysis in section 5.

Notice that the predictions discussed above not only follow from the hypothesis espoused by Lewis (2003) and Aziz (1967) but also from the arguments put forward by Metcalf and Metcalf (2006). They argue that the British excluded the community that previously held political power from the higher posts in their government. If this were true, then the community of the deposed ruler would have lower incentives to get educated as they would have limited opportunities following the education acquired. This effect of discrimination in jobs would also reflect in the literary statistics. However, this argument requires that the employment records of British bureaucracy also show lower Muslim employment in regions where the deposed ruler was Muslim and lower Hindu employment in regions where the deposed ruler was Hindu. We thus test this prediction using the employment records of the British bureaucracy in section 5.

Note that even if some Muslims are not taking up education because of their dislike of the British colonizers who overthrew their king, those who get educated will still find government

[13]see, Iyer (2010) for greater details

jobs if the British do not discriminate against them. Thus, the hypothesis of Aziz (1967) is not disproved even if Muslims are well represented in government jobs in districts where the deposed ruler was Muslim.

In the next section, we discuss the historical background and the state of education in India before the 1881 census. This section provides the reader with a summary of political conditions in pre-colonial India, how the British annexed different kingdoms and how literate the population was before the British implemented their education policy. We also briefly discuss the education policy followed by the British.

3 Historical Background and Data

3.1 Background

The empire that dominated most of the modern-day region of India, Pakistan and Bangladesh for almost two centuries starting from 1526, is the Mughal Empire. It peaked in the 17th century when it extended over most of the Indian sub-continent and parts of Afghanistan. The empire territory extended over four million square kilometres (Turchin et al., 2006). The Mughal dynasty was Muslim, and the empire had an Islamic identity (Dale, 2009). We do our analysis on districts of colonial India which were part of the Mughal Empire in 1707 when it started to disintegrate after the death of Emperor *Aurangzeb*. Figure 1 gives the extent of the empire.

The dissolution of the empire was followed by the emergence of small successive states ruled by Hindu and Muslim kings. Figure 2 shows the religions of different rulers across India. Meanwhile, the East India Company, which began as a trading company chartered in 1600, amassed significant profits and an army. It started annexing Indian territory, starting with Bengal in 1757 after the Battle of Plassey (Metcalf and Metcalf, 2006). The East India Company conquered many kingdoms, deposed the kings, and established itself as the supreme power in India. The British annexation continued up to 1857, which was the year

Figure 1: Muslim Empire boundaries in 1707

of the Indian Mutiny or the First War of Independence. Then, the Company's rule ended, and the British government took direct control over the territories.

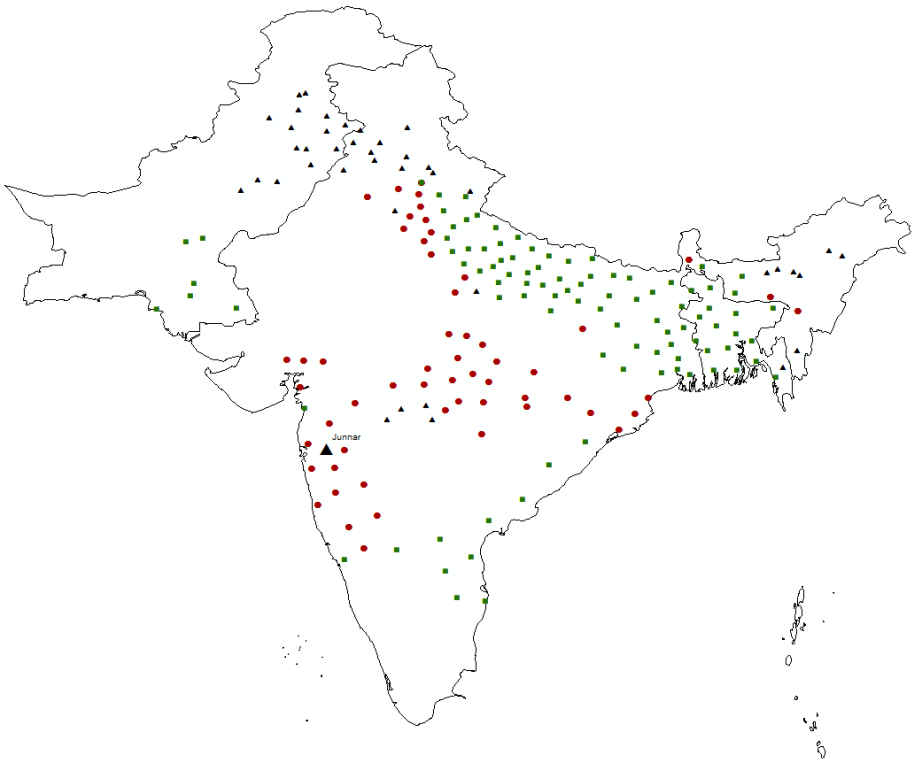

Figure 2: Religion of final ruler removed by British (1757-1857). Green(squares) - Muslim, Red (circles) - Hindu, Black (triangles) - Others

These rapid changes in the Indian sub-continent also brought significant economic and social changes. In particular, the old political and social hierarchy went through a change. Nawab Abdul Lateef, a Muslim educator in the Bengal Province of colonial India[14], noticed how these political and social changes affected his religious community, i.e., the region's Muslims. In 1885, recalling his experiences as a District Magistrate in 24 Parganas (a district in Bengal), he wrote[15]:

> "*The Mahomedans saw themselves left behind in the race of life by their Hindu fellow-subjects, over whom they had not only exercised political power before the British*

[14]He was noted as among the twelve most prominent Indian men in 19th century Bengal (Bradley-Birt, 1910)

[15]These excerpts are taken from Firdous (2015).

regime, but also, not long before, and even under the British, had maintained a social ascendancy."

Trying to explain the reason for this condition, he adds:

"*Mahomedan youth kept themselves aloof from the English schools and the new knowledge. This was attributed to the natural pride and the great bigotry of the Mahomedans. The imputation was not wholly unmerited, yet it was not the whole truth. The pride was somewhat a matter of course. It was the obvious effect of history, but no effort was made to soften it. The British government, in the consciousness of irresistible might, felt itself under no obligation to conciliate prejudice. The Mahomedan bigotry, such as it was, was not inherently worse than that of other communities.*"

This quote is insightful. First, it points to Lateef's belief that Muslims resisted English schools and western knowledge because of the 'natural pride' they felt, having once been the dominant political and social force in the region. Second, it also notes that this 'bigotry' was not 'inherently worse' among the Muslims than in other communities. Thus, Lateef hints that other religious communities would behave the same if removed from political and social ascendancy.

Many historians (Aziz (1967), Khan (1989), Masselos (1996)) in India have also attributed the Muslim community's resistance to modern education introduced by the British to resentment because the British supplanted Muslims as political masters. To quote one of them, Masselos (1996) claims that Muslims lived 'in a nostalgia of their past glories'.

" *It was argued that psychologically they (Muslims) had not recovered from their loss of power when they were supplanted as rulers of the subcontinent by the British and that they lived in the past, in a nostalgic world of former glories* (page: 119)."

Though many historians have talked about Muslims resisting western knowledge because they lost political power, it seems that few historians followed up on Lateef's insight to look

for similar 'bigotry' among the Hindus where they had lost political power. Though there is some discussion of how Hindus were not inclined to take up western education, which was linked to Christian missionaries (Majumdar, 1951), there is limited research that linked resistance to western education by them because they lost political power. Our paper is, thus, (to the best of our knowledge) the first to test this hypothesis empirically for both communities and find the results consistent with Lateef's insight.

Further, in our conceptual framework, we note that if we assume that the subjects associate themselves more with the king in the *core* of the kingdom than the *periphery*, then resistance to western education due to deposing the king would be higher in the *core*. Given the historical context we are studying, we think this is a natural assumption. When the Mughal Empire disintegrated, Malik (1990) argues that the concepts of *core* and *periphery* came to be defining features of 18th century pre-colonial India. Often, the status of entities and individuals in the kingdom's core significantly differs from that of the periphery. Often peripheral actors are kept at a distance and do not identify with the sovereignty of the kings who rule them. They are even subject to open discrimination and exploitation.[16]

An excellent example of this phenomenon is the Maratha-Rajput rivalry in the late eighteenth/early nineteenth century in India.[17]. The Maratha (a Hindu sub-group geographically associated with the southwest region of India) Empire began with the rebel-king *Shivaji*. It became the dominant power in India at that time till the British defeated and tamed their power in the Anglo-Maratha Wars.[18] As they expanded north, they encountered resistance from Rajput kings (Hindu kings associated with the north-west region of India) who traditionally shared a good relationship with the Mughal Empire.[19] The Marathas were successful in their military expansion against the Rajput kings and forced them to pay tributes and taxes.[20] Thus, one would expect that Hindus who associated themselves with Rajput kings

[16]For a detailed discussion on this issue, look into Bevir (2010)
[17]To see extensive discussion on the Maratha-Rajput rivalry see Gupta (1970)
[18]For a review of the Anglo-Maratha wars, see Deshpande (2006)
[19]see Zaidi (1994)
[20]see Gupta (1970)

did not mind when Maratha rule was replaced by the British in their region.

In general, we think it is reasonable to assume that the association of Hindus with their kings would be higher in the *core* of the kingdom than far away. The same should be valid for Muslims as well. We find the results in line with this assumption in Section 4. In the following sub-section, we discuss the state of education in the Indian sub-continent before the 1881 census.

3.2 State of Education in the early nineteenth century

Before the British established a state system of schooling, the indigenous schools were of two types: local primary level schools where village boys were taught in the vernacular medium and religious schools for the elite students interested in a lifetime of higher education Chaudhary and Rubin (2011). The religious schools were, as one would expect, differentiated by religion (Hindu or Muslim).[21] The local schools, it seems though, were not doing an impressive job in spreading literacy among the masses.

Unfortunately, there is no systematic record of literacy among the Indian masses before the British rule in India. Francis Buchanan carried out the earliest anthropological surveys in the eastern region of India between 1807 and 1814.[22] The surveys were again recompiled by Martin Montgomery. [23] Another set of reports, called Adam's Reports (Adam, 1835, 1836, 1838), prepared by a Scottish missionary on the state of vernacular education in Bengal and Bihar (1835-1838), is the first documented measure of literacy available that is disaggregated for different religious groups.

Before we summarise the findings of these surveys, we note that caution is necessary to make inferences. First, these are available only for a few districts in the eastern part of India.

[21]For more information on the indigenous school system, please see the Adam (1835), and Chaudhary and Rubin (2011).

[22]Francis Buchanan also covered southern India in his surveys, comprising regions of Mysore, Canara and Malabar. These regions are not included in our sample because either they were not part of the Mughal Empire, and if they were, then they remained a Princely state.

[23](Martin, 1838)

Second, these reports were created using second-hand information and hearsay.[24]. Thus, the scientific validity of these surveys is far from certain. However, they are important as they are still the best sources of information (even if partial) on the state of education in the early nineteenth century.

Table 1: District level education attainment survey done by Francis Buchanan during 1807-1814

District	Literate	Population	Literacy rate	Literacy rate (1881)
Purnea	16,550	2,904,360	0.6	2.7
Patna-Gaya	25,890	3,364,420	0.8	4.1
Shahabad	7,045	1,419,520	0.6	2.1

Note: Francis Buchanan surveyed the districts of East India Company from 1807-1814. The statistical tables and notes contain the state of education in the districts of Bengal and Behar. Literacy is the number reported as men fit to act as writers and born in the division. The survey also contains information on the demographics, including population. Districts in Buchanan's survey are mapped with the districts from the 1881 census. Behar and Patna city is mapped to Gaya and Patna (1881)

Both surveys agree that the state of education was in a bad situation. We present the summary statistics from Buchanan's survey in Table 1 and Adam's Report in Table 2. Table 1 provides literacy outcomes from three regions[25] in eastern India. The literacy rate for all districts was below 1% for all regions. Hence, this suggests that the overall literacy levels in India were low in the early eighteenth century.

Second, Table 2 indicates that even as early as the 1830s, Hindus seem to have taken more advantage of the educational institutions under British rule than Muslims in the eastern part

[24]Adam's report is a report collecting information from various sources. It provides suggestions in great detail on how to improve the state of vernacular education in the region. Adam notes that his report is a collection of information from second-hand sources.

> "*I have not introduced into this report any statement of facts resting on my observation and authority, but have merely attempted to bring into a methodised form the information previously existing in detached portions respecting the state of education. The details, therefore, which follow must be regarded as the results of the observations of others, and as depending upon their authority, and all that I have done is to connect them with each other and present them in consecutive order.* (page: 15)."

[25]There is also another region called Rangpur covered in Buchanan's survey. However, the data collection or reporting seems to be erroneous. It reports a literacy of 5.2% in this region in 1807, while other districts in the same region have less than 1% literacy. Moreover, the Rangpur region reported 6.2% literacy in 1881, implying only an increase of about 20%. Whereas the other districts reported in the Buchanan report 400-500% increase.

of India. It is important to note that Muslim kings ruled this region of India; hence, the early evidence is in line with our conceptual framework.

Table 2: Literacy rates for Bengal and Bihar districts from Adam's report (1835)

District	Muslim literacy(%)	Hindu literacy(%)	Literacy(%)	Literacy (1881)
Moorshidabad	0.21	1.67	0.99	2.72
Beerbhoom	0.24	1.52	1.28	4.44
Burdwan	0.68	2.42	2.07	4.51
South Behar	0.98	0.93	0.93	2.07
Tirhoot	0.05	0.44	0.40	1.63

Note: Adam, in 1835, did a survey on the state of education in Bengal and Bihar. Adam's survey recorded the number of adults who can merely read and write. The data of surveyed district in 1835 with the district level literacy data from the 1881 census. South Behar (1835) is mapped to Gaya (1881) and Tirhoot (1835) to Muzzafarpur (1881).

Overall, compared to the 1881 census data, these results suggest that education among the masses only picked up once the British altered the mass education policy after Wood's despatch (1854).[26] Hence, we think that literacy and education were rare before this period and it was only under the British state schooling system that the education level among the masses picked up. We now discuss the education policy under the British, particularly after the colonial government took over from the East India Company's rule in 1857.

3.3 Education under the British rule

Under the British system, government and local board schools (public schools) functioned alongside private schools. Some private schools received public subsidies and were called private aided schools.[27] In terms of sources of education spending, public sources represented 50%, increasing to 60% by the 1940s, while fees and private contributions accounted for the remaining 50% (Chaudhary and Rubin, 2011). All schools under the state school system had

[26]To know more about the Wood's despatch, see `https://babel.hathitrust.org/cgi/pt?id=hvd.32044105337398&view=plaintext&seq=655&q1=bengal_20language`.

[27]See, Progress of Education, Quinquennial Reviews (volumes 1897–1927). For a more significant discussion on education under British rule in India, see Ghosh (2000).

to conform to official education standards, and their students were allowed to take public examinations. It is important to note that education under these state-affiliated schools was imparted under the vernacular language as per the policy outlined in Wood's despatch (1854). The colonial government was even willing to subsidize religious schools that were willing to introduce the new modern secular education Chaudhary and Rubin (2011).

With the state system of schooling developing under the British, there was a dramatic increase in enrollment rates and education spending (Chaudhary, 2010). However, this dramatic increase in spending and enrollment did not translate into massive literacy gains. By 1931, less than 10% of the population of British India could read and write. Nevertheless, there was substantial heterogeneity across regions and religions. Muslim literacy was lower on average than Hindu literacy. However, there were substantial regional variations. Muslims fared poorly in the Eastern and Northern parts of the country, where they lost power to the British. However, they were doing significantly better in central provinces and regions annexed from the Marathas in the west. Similarly, Hindus were doing better in Eastern India but fared poorly in the central provinces.

Colonial policies tried to bridge the gap between the two religions by offering scholarships, particularly to Muslim students who were faring behind in the eastern province of Bengal. And these colonial efforts were also partially successful in raising Muslim primary school enrollment. However, regional differences persisted till the end of the British Raj in India. In the following sections, we attempt to understand why this regional heterogeneity persisted and different religious groups did better in different regions under British rule. We mainly focus on the role of religious identity and build a unique data set to try and isolate its importance. The details of the data used are discussed in the following subsection.

3.4 Data

We used the historical atlas of Schwartzberg (1978) to measure the extent of the Mughal Empire. We superimposed it onto the Indian census maps using Singh and Banthia (2004)[28] to get the districts in British India that we include in our sample. We collated district-level GIS centroids from Donaldson (2018). The Indian Censuses of 1881, 1911 and 1921 cover most of the provinces of Assam, Bengal, Bihar & Orissa, Bombay, Central Province, Madras, Punjab and United Province.[29] The censuses provide data at a district level on literacy, population, area, religion, caste, occupation, urbanisation and geographical indicators like rainfall, latitude and longitude.

Enumerators consider a person literate when he or she can read or write in *any language*. To remain consistent with the definition of literacy, for the 1881 census, we removed those who were "under instruction" or still learning to read and write. The disaggregated literacy rate of Hindus and Muslims is available in the census.[30]

We followed the city list provided by the Indian census and mapped the cities with districts containing those cities. In our empirical analysis, we included the list of major medieval port cities from Jha (2013). The year of annexation by the British ranges from 1757 to 1871. We also include the years of Muslim rule as measured by Jha (2013).

The summary statistics of the variables in the data are shown in Table 3 for 1911 and 1921. The descriptive statistics in Table 3 reveal that the average literacy of Hindus and Muslims was similar, with considerable heterogeneity across the districts. The Hindu-Muslim literacy gap across districts varied from -17% to 21% and showed a significant difference in inter-religion education outcomes across districts of colonial India. The average population share of Muslims was 25% across districts against 70% for Hindus. Clearly, Muslims were not just a tiny minority but a sizeable part of the Indian population. The summary statistics

[28] We used the matching of Mughal Empire and Census boundaries using spatial overlay technique.

[29] We exclude Bombay, Calcutta and Madras cities as they are significantly different from the rural districts of India

[30] Age and gender-based specific literacy numbers are available to test for the robustness of results

Table 3: Descriptive statistics of the Colonial India districts (1911 & 1921)

	count	mean	sd	min	max
Muslim Literacy	367	0.06	0.05	0.01	0.24
Hindu Literacy	383	0.07	0.05	0.02	0.23
Literacy gap	367	0.01	0.07	-0.17	0.21
% Hindu	383	0.68	0.28	0.04	0.99
% Muslim	367	0.26	0.27	0.00	0.91
% Christian	389	0.01	0.02	0.00	0.28
% Sikhs	389	0.01	0.05	0.00	0.42
% Tribes	389	0.05	0.15	0.00	0.95
% Others	389	0.01	0.05	0.00	0.69
% Brahman Caste	389	0.05	0.04	0.00	0.24
% Low Castes	389	0.15	0.08	0.00	0.38
% Rural	389	0.90	0.09	0.32	1.00
Agriculture accp. %	389	0.71	0.13	0.28	1.18
Industry occup. %	389	0.11	0.06	0.00	0.34
Commerce occup. %	389	0.07	0.03	0.00	0.23
Profession occup. %	389	0.02	0.01	0.00	0.04
Normal rainfall	389	49.06	31.81	3.52	259.00
Latitude	387	24.81	4.42	13.06	33.57
Longitude	387	80.92	6.21	67.00	94.65
Total Area(sq km)	389	3624.51	2108.98	101.00	13888.00
Average Household size	389	4.79	0.47	3.56	6.22
Total population size	389	1032642.78	673051.61	39320.00	4837730.00
Real Income	324	22459573.95	16700272.81	248381.41	1.23e+08
Year annexed by British	387	1809.60	32.42	1757.00	1871.00
Years of Muslim rule	379	79.33	39.65	-98.00	161.00
Distance from Junnar	387	1157.79	473.51	76.64	2292.32

Note: This table lists the districts of British India defined by the 1911 and 1921 Indian census, which were part of the Mughal empire (1707) and ruled directly (excluding princely states).
[a] : Census document does not report the Literacy rate of Muslims in certain cities with a negligible Muslim population. We do robustness checks, excluding such samples completely.
[b] : Donaldson (2018) only reports the Income of districts where the agriculture data is available
[c] Years of Muslim rule is from the establishment of the Muslim dynasty in India till the Annexation by British powers

of the variables for 1881 are shown in Table A.1.

We also constructed a novel data set from the Imperial Gazette (Hunter, 1908) to get the religion and dynasty of the deposed ruler. It also gives us the year of annexation. The Imperial Gazette is a twenty-six volume historical reference document. It lists India's administrative provinces, districts, and town names and provides their socio-economic statistics. The Imperial Gazette outlines the history of every district. The district's history contains information on past rulers and the date of annexation by the British. We use this gazette to manually determine the name of the last ruler and the year of annexation by British variables. To minimise the measurement error, we cross-check the details of the deposed ruler annexed by the British with historical sources (Majumdar, 1951).

Figure 2 shows the districts in 1911 marked by the religion of the deposed ruler. The data for the religion of the deposed ruler in the colonial Indian districts that existed as of the 1911 census is presented in Table 4: the British annexed 97 districts whose rulers were Muslim and 57 districts whose rulers were Hindu. Districts where the deposed ruler followed another religion or where the ruler's religion was uncertain because of the complex political climate of the time are dropped in robustness tests.

Table 4: Province-wise distribution of religion of the deposed ruler in Districts (1911)

Province	Hindu	Muslim	Other	Total
Assam	2	3	7	12
Bengal	1	25	1	27
Bihar & Orissa	6	15	0	21
Cental Provinces	18	0	4	22
Madras	0	11	0	11
Punjab	4	0	24	28
United Provinces	9	35	4	48
bombay	16	8	0	24
Total	56	97	40	193

Note: This table lists the districts of British India defined by the 1911 Indian Census which were part of the Mughal empire (1707) and ruled directly (excluding princely states). Punjab province has a majority of Sikh rulers whom the British deposed. Assam had neo-Tai and a confluence of Tribal, Hindu and Buddhist religions which are tagged as others in the table.

Finally, we constructed novel data on the employment of Indians in the British government using the civil list of 1871 (Quarterly Indian Civil List, October 1871). We digitised the provincial civil list of nine provinces of the British government. We used the "district distribution list" of the civil list to find the identity of civil servants employed in the district. We used the names to classify them into Indian-sounding names and European names. We then classified the Indian names using names and surnames into Hindu and Muslim (and others).

Given that historians like Metcalf and Metcalf (2006) and Ahmad (1991) have argued that the British kept Muslims from important posts of authority in the government, we focus on civil lists because it notes the important administrative jobs. These jobs are classified as necessary enough to call for loyalty and prestige from the crown as civil servants. Also, the remuneration was directly received from the crown of central colonial administration, which has a component of pension attached showing direct linkage to the colonisers (Mcilvenna, 2019).[31] The following section presents the main results of our paper.

4 Main Results

Our primary research question is whether sharing religious identity with a deposed local ruler affects the literacy outcomes of a religious group under a colonial regime. To do that, we estimate the effect of the religion of the deposed ruler on the literacy outcomes of his subjects under British rule. The historical context described above gives us an excellent opportunity to study this question. We have Hindus and Muslims living together under different rulers belonging to these religions. As the British started colonizing these regions, both religious groups received treatment in some districts (i.e. they shared their religious identity with the deposed ruler). However, in some regions, they did not receive the treatment (i.e. they did not share their religious identity with the deposed ruler). Hence, we can use simple linear

[31] Top rank we found was district collector/judge. The lowest position we can see is of Naib Tehsildar or assistant superintendent.

regression techniques to estimate the effect of a shared religious identity with the deposed ruler on the literacy of the religious group.

First, we estimate equations (1) and (2) using ordinary least squares regressions with many district-level controls. These equations are given below:-

$$\textbf{Muslim Literacy}_{it} = \alpha_1 + \beta_1 \textbf{Muslim Deposed Ruler}_i + \gamma_1' X_{it} + \epsilon_{it} \tag{1}$$

$$\textbf{Hindu Literacy}_{it} = \alpha_2 + \beta_2 \textbf{Hindu Deposed Ruler}_i + \gamma_2' X_{it} + \mu_{it} \tag{2}$$

where Muslim and Hindu literacy is given for each district i in time t (1881, 1911, and 1921). The Religion of Deposed Ruler in equation 1 is a time-invariant dummy that takes the value 1 if the deposed ruler is Muslim. The Religion of Deposed Ruler in equation 2 is again a time-invariant dummy that takes the value 1 if the deposed ruler is Hindu. X is the set of control variables for district i in time t. The demographic controls include population shares of different religions, population shares of different castes, and average household size. We also have a set of geographic controls: a coastal dummy, a dummy for a major census city including Calcutta and Bombay, and the altitude, latitude, and longitude of the district centroid. Finally, we added a set of economic controls, including occupation classes (industry, agriculture, services), port city and urbanization. These controls are important as demography, geography, and economic factors can be correlated with the religion of the deposed ruler and thus bias our estimates.

The first column of Table 5 shows a negative relationship between Muslim literacy and the religion of the deposed ruler being Muslim. Muslim literacy is 1.5 p.p lower in a district where the deposed ruler was Muslim compared to a district where the deposed ruler was non-Muslim. It is statistically significant, even without any controls. In column 2 of Table 5, we add geographic controls. The magnitude of the coefficient of interest becomes larger after adding geographic controls. This suggests that Muslim rulers ruled geographical regions that had higher literacy.

Table 5: Association between Religion of last Ruler and Muslim literacy in Colonial India

	Muslim Literacy			
	(1)	(2)	(3)	(4)
Muslim ruler	-0.0150***	-0.0205***	-0.0228***	-0.0194**
	(0.00520)	(0.00468)	(0.00719)	(0.00789)
Geographic controls	NO	YES	YES	YES
Demographic controls	NO	NO	YES	YES
Economic controls	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
Observations	549	547	365	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

In columns 3 and 4, we add demographic and economic controls. The number of observations in these columns decreases because we do not have these controls for 1881. A large Muslim population might be associated with the sorting of Muslims in poorer districts (Chaudhary and Rubin, 2011). We thus control for population shares of Muslims (and other religions). We also add occupation because occupations often were divided along religious lines.[32] Caste distribution within a district is also used as a control as it can affect literacy. Column 4 of Table 5 shows that the coefficient associated with the religion of the deposed ruler is still negative and statistically significant. Muslim literacy decreased by 1.94 percentage points. The mean Muslim literacy in 1911 was 6%. Thus, the Muslim literacy rate in the districts which Muslim rulers ruled is substantially lower than in those previously ruled by non-Muslims under colonial rule.

The first column of Table 6 reports the coefficient for the religion of the deposed ruler from equation 2, without controls. There is a negative relationship between Hindu literacy and

[32]see (Jha, 2013). This paper also argues that port cities had affluent Muslim populations, and thus, we control for port cities.

the religion of the deposed ruler being Hindu. The coefficient is -2.5 p.p and is statistically significant. In column 2, we add geographic controls and the coefficient decreases in absolute terms to -1.5 p.p. This is consistent with the results in Table 5 column 2, as it suggests that non-Hindu (Muslim) kings ruled geographical regions with higher literacy.

Table 6: Association between Religion of last Ruler and Hindu literacy in Colonial India

	Hindu Literacy			
	(1)	(2)	(3)	(4)
Hindu ruler	-0.0253***	-0.0152***	-0.00978*	-0.0106**
	(0.00501)	(0.00416)	(0.00508)	(0.00498)
Geographic controls	NO	YES	YES	YES
Demographic controls	NO	NO	YES	YES
Economic controls	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
Observations	565	563	365	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

We add demographic and economic controls in columns 3 and 4 of Table 6. We still have a negative association with the religion of the deposed ruler in the years 1911 and 1921, but with a smaller coefficient. As discussed in the conceptual framework, if the religious community of deposed rulers has within-group fragmentation, then that community will have a lower negative effect of deposing the ruler. The within-group fragmentation is considered higher for the Hindu religion than for Muslims due to inter-caste fragmentation.[33] Our Y variable is not available at the caste level. Thus, even though we control caste shares in the population, in line with our conceptual framework, we find a lower effect of the religion of

[33]Many Hindu Communities fought against *Peshwa* rulers who were high caste Maratha rulers. Particularly, the low caste Mahars supported the British against them. See, pages 39-52 in Geppert and Müller (2015)

the deposed ruler on Hindu literacy.

To alleviate concerns about omitted variables bias, we first report results using a specification that estimates the district's literacy gap between Hindus and Muslims. This specification rules out *across* district geographic, demographic and economic variables that might have been omitted. Although we control for many of these factors, there is still a possibility that some variable, for example, the quality of schools, is omitted to affect literacy rates. However, if we assume that these variables should affect different religious groups alike, then these factors should not affect the literacy gap between the two groups.

Thus we ran the literacy gap specification, i.e., Hindu literacy - Muslim literacy is regressed on a dummy for the religion of the deposed ruler (Muslim = 1, in columns 1 and 2) and found the literacy gap to be positive, consistent with our main results (Table A.2). The Hindu-Muslim literacy gap increases by three-fourths of the sample average (column 2) in regions with a Muslim king. We changed the dummy variable in columns 3 and 4, which now took the value 1 if the ruler was Hindu. Again the results were robust and statistically significant.

As a second robustness check, we run an IV regression. Our instrument exploits the concentric diffusion of the Hindu (Maratha) empire from the birthplace of Shivaji, a Hindu king who rebelled against the Mughal Empire, thus becoming a symbol of Maratha Hindu identity. Shivaji was born in 1630 in a place called *Junnar* in southwest India. Majumdar et al. (1958) describes Shivaji and his Maratha empire in these words, "The Maratha nation he built up defied the Mughal Empire during and after Aurangzeb's reign and remained a dominant power in India during the 18^{th} century. The Maratha power also competed with the English for supremacy in India till it was finally crushed in the time of Lord Hastings."

As distance is a crucial determinant of an army's ability to invade a region (Dincecco et al., 2021), we take *distance* from Junnar as an instrument for the religion of the deposed ruler. Since the area around Junnar – the birthplace of Shivaji – became the core of the Maratha empire, the places closer to it were more likely to be invaded by the Hindu Maratha kings.

Thus these places were more likely to have a Hindu king at the time of annexation by the British. Moreover, distance from Junnar is unlikely to be correlated with the determinants of literacy rates under the British, particularly after controlling for geographic variables like a coastal dummy, major census city, altitude, latitude, and longitude.[34]

We construct a measure of *distance* using pre-industrial era measures of distance and transportation costs based on Ozak (2018). We use this measure of *distance* from Junnar as an instrument for the religion of the deposed ruler in colonial India. The first column of Table 7 reports the first stage estimates of our instrument. We see that our instrument strongly correlates with the religion of the deposed ruler. The Kleibergen-Paap Wald F statistic of the instrument from the first stage is 33.4 (also reported in column 1 of Table 7). Together, these results prove that our instrument has a strong first stage. Column 2 reports the IV estimates of the coefficient associated with the religion of the deposed ruler. The coefficient is negative as the OLS estimate, but the negative effect is larger for the IV estimate (-3.07 for IV versus -1.94 for OLS).

Table 8 presents IV results on Hindu literacy. The IV estimate is again negative as the OLS estimate, but (as for Muslims) the negative effect is larger for the IV estimate. This difference can exist because OLS estimates can be biased downwards as they do not take into account the pre-colonial differences between the two religious groups. Muslims were likely over-represented in the pre-colonial elites where there were Muslim kings, and Hindus were likely to be over-represented where there were Hindu kings. This would imply that each community was likely in a relatively favourable position to acquire western education after colonization in the regions where they used to enjoy certain advantages. Thus, OLS estimates can be biased downwards as it fails to consider this. The IV estimates avoid this bias and seem to suggest a higher resentment among religious groups when their rulers were removed

[34]We also control for demographic and economic variables, including population shares of different religions, different castes, average household size, urbanization, occupation classes (industry and agriculture), and port city. Moreover, well-published literature in economics has shown that distance from places of limited historical importance is uncorrelated with determinants of educational outcomes (Becker and Woessmann, 2009). Becker and Woessmann (2009) uses the distance from Wittenberg as an instrument to estimate the effect of Protestantism on educational outcomes.

Table 7: IV results for Muslim literacy

	Muslim Literacy	
	(1)	(2)
Least Cost	0.0362***	
	(0.00627)	
Muslim ruler		-0.0307*
		(0.0176)
Geographic controls	YES	YES
Demographic controls	YES	YES
Economic controls	YES	YES
Year FE	YES	YES
N	365	365
Kleibergen-Paap Wald F statistics	33.4	

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

than the OLS estimates. However, given that historical data is prone to measurement error and IV estimates are biased upwards when measurement error is of certain types of 'non-classical error', we consider OLS estimates as our benchmark. [35] It should be noted that the IV results are robust to using a Euclidean measure of distance from Junnar as well (Tables A.3 and A.4).

Hence, all the specifications report results that are in line with the predictions discussed in section 2 associated with the hypothesis of Aziz (1967) and Lewis (2003). Another prediction discussed in section 2 stems from extending the argument by these historians a little further.

[35]The reader might also note that the difference between OLS and IV estimates is more considerable for Hindus. This is probably because historians argue that Marathas, though Hindus, were still considered occupiers by Hindus in many regions away from their heartland, for example, among the Rajput kings of the north. See an extensive discussion on the Maratha-Rajput rivalry in Gupta (1970). Given that we argue in our conceptual framework that subjects living closer to the *core* of the kingdom feel more connected with the king, Hindus living in regions closer to Junnar may have a more substantial 'self-identification' with the Hindu kings. Thus, the potential differences between the compliers and the full sample are likely higher for Hindus than Muslims.

Table 8: IV results for Hindu literacy

	Hindu Literacy	
	(1)	(2)
Least Cost	-0.0348***	
	(0.00654)	
Hindu ruler		-0.0607***
		(0.0161)
Geographic controls	YES	YES
Demographic controls	YES	YES
Economic controls	YES	YES
Year FE	YES	YES
N	365	365
Kleibergen-Paap Wald F statistics	28.3	

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

If subjects at the *core* of the kingdom are more closely associated with the ruler than those at the *periphery*, then the resistance to western education due to deposing the local ruler would be more in the *core* of the kingdom. We now test this prediction in our data.

To do this, we divide our sample into *core* districts and *periphery* districts, where *periphery* districts are the ones that share their boundary with kingdoms that rulers of other religions rule. All the remaining districts are considered to be *core*. The above definition gives us 61 *periphery* districts and 132 *core* districts. The regression equations that we estimate are given below:

$$\begin{aligned}\textbf{Muslim Literacy}_{it} = \alpha_1 + \beta_1 \textbf{Muslim Deposed Ruler}_i + \beta_2 \textbf{Periphery}_i \\ + \beta_3 \textbf{Hindu Deposed Ruler} \times \textbf{Periphery}_i + \gamma_1' X_{it} + \epsilon_{it}\end{aligned} \tag{3}$$

$$\begin{aligned}\textbf{Hindu Literacy}_{it} = \alpha_1 + \beta_1\textbf{Religion of Deposed Ruler}_i + \beta_2\textbf{Periphery}_i \\ +\beta_3\textbf{Religion of Deposed Ruler} \times \textbf{Periphery}_i + \gamma_2' X_{it} + \mu_{it}\end{aligned} \tag{4}$$

Table 9: OLS : periphery districts and Muslim ruler

	Muslim literacy	
	(1)	(2)
Muslim ruler	-0.0333***	-0.0322**
	(0.0114)	(0.0125)
periphery	-0.0292***	-0.0279***
	(0.00947)	(0.00944)
Muslim ruler × periphery	0.0337**	0.0325**
	(0.0130)	(0.0128)
Geographic controls	YES	YES
Demographic controls	YES	YES
Economic controls	NO	YES
Year FE	YES	YES
N	357	357

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Tables 9 and 10 report the results. It is clear from both the tables that *periphery* districts in themselves hurt literacy in line with Foa (2016). Foa (2016) argues that pre-colonial states in India were in constant conflict with one another. This constant conflict could lower the literacy rate in these periphery districts that were more exposed to inter-kingdom warfare. However, the interaction between the religion of the deposed ruler and the *periphery* district is positive and even significant in the case where the ruler was Muslim. It is also clear from the tables that all the negative effects of the deposed ruler's religion on the subjects' literacy can be found in *core* districts. These results strongly suggest that the negative effect on literacy is the outcome of the connection that subjects in the core of these kingdoms had

with the kings with whom they shared a religious identity, which made them resist western education.[36]

Table 10: OLS : periphery districts and Hindu ruler

	Muslim literacy	
	(1)	(2)
Hindu ruler	-0.0214***	-0.0237***
	(0.00738)	(0.00708)
periphery	-0.0137**	-0.0133***
	(0.00569)	(0.00480)
Hindu ruler × periphery	0.00853	0.0112
	(0.00849)	(0.00762)
Geographic controls	YES	YES
Demographic controls	YES	YES
Economic controls	NO	YES
Year FE	YES	YES
N	357	357

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

We can summarise the results in this section as follows. First, the literacy of a religious group is negatively associated with the religion of the deposed ruler if they share a religious identity. This negative effect is robust and valid for both Muslims and Hindus in colonial India. Second, the negative effect of the religion of the deposed ruler on literacy is much stronger at the *core* of a kingdom than at the *periphery*. We interpret these results as evidence for the hypothesis that when rulers are deposed, their subjects, who feel that they share an identity with them, resist taking up modern education introduced by the occupier, even if it is against their economic interest. This identity in pre-colonial India was usually

[36]It can also be argued that only the ruling elites who were present in the kingdom's core did not take up modern education, and that is why literacy is lower in the kingdom. We discuss this issue further in section 5.

shared by the ruler's religious group living in the kingdom's core. In the next section, we discuss some alternative mechanisms that can also explain the results above.

5 Alternative mechanisms and robustness checks

Another reason that could lead to an adverse effect of the religion of the deposed ruler on literacy rates under the British is that the British discriminated against the deposed ruler's religious community. Metcalf and Metcalf (2006) argue that the British discriminated against Muslims and kept them away from positions of authority because they were the previous ruling class. If this were true, then this would provide lower incentives for Muslims to become educated. By the same logic, the British would discriminate against Hindus in regions where Hindu kings ruled, thus lowering the literacy of Hindus.

However, this policy would imply that the employment patterns of the two communities should also follow a pattern similar to literacy, i.e. the Muslim community should have lower employment levels under the British where the deposed ruler was Muslim. Similarly, Hindus should have lower employment levels where the deposed ruler was Hindu. To test this, we collated a novel data set by digitizing the civil lists of employees working for the British Government in different districts in 1871 (Quarterly Indian Civil List, October 1871).[37]. We use the year 1871 because this is the first year when Civil lists are available at an all-India level. We used the names of civil servants to classify them into Hindus and Muslims (and others)[38]. We then estimated the following regression equations.

$$\textbf{Muslim Employment}_{it} = \alpha_1 + \beta_1 \textbf{Muslim Deposed Ruler}_i + \gamma_1' X_{it} + \epsilon_{it} \quad (5)$$

[37]Given that historians like (Metcalf and Metcalf, 2006) and (Ahmad, 1991) have argued that the British kept Muslims from important posts of authority in the Government, we focus on civil lists jobs defined by Mcilvenna (2019) See, the sub-section on data in section 3 for details

[38]There can be errors in classification based on names. However, this is the best possible available historical record for employment under the British. Also, the results are robust to be just driven by the wrong classification.

$$\textbf{Hindu Employment}_{it} = \alpha_1 + \beta_1 \textbf{Hindu Deposed Ruler}_i + \gamma_1' X_{it} + \epsilon_{it} \quad (6)$$

Table 11: OLS Muslim employment (1881)

	Muslim Employment	
	(1)	(2)
Muslim ruler	0.0236	0.0534***
	(0.0201)	(0.0188)
Demographic (population)	NO	YES
Geographic controls	NO	YES
N	173	172

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

where Muslim Employment$_{it}$ is the number of Muslims in the civil list in district i divided by the population of Muslims in the district. Hindu Employment$_{it}$ is defined analogously. The results are reported in Tables 11 and 12. We did not find a negative effect on the employment of a particular community in an Indian district because of the religion of the deposed ruler. On the contrary, Muslims were employed more in districts where the deposed ruler was Muslim. The positive association of the religion of the deposed ruler being Muslim with Muslim Employment might be because the British tried to promote Muslim participation in government institutions in regions where they were perceived to be left behind (Chaudhary and Rubin, 2011).

Given that we know that Muslims were resisting western education in regions where their ruler had been deposed, the British might have employed more Muslims as civil servants to incentivize them to take up education. This higher employment of Muslims in regions where they were the previous ruling class can also result from this group having greater administrative experience from the pre-colonial era. Nonetheless, this result provides evidence strongly

suggesting that the British were not discriminating against the previous ruling class.[39]

Table 12: OLS Hindu employment (1881)

	Hindu Employment	
	(1)	(2)
Hindu ruler	0.0298	0.0419
	(0.0276)	(0.0345)
Demographic (population)	NO	NO
Geographic controls	NO	YES
N	173	172

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Moreover, controlling for this employment data does not alter the signs or affect the significance level of the coefficients of our main results in the 1881 data (see Tables A.5 and A.6 reporting the results estimating the following equations respectively)

$$\begin{aligned} MuslimLiteracy_{it} =& \alpha_1 + \beta_1 Religion of DeposedRuler_i + \\ & \beta_2 Muslimemployment_i + \beta_3 Hinduemployment_i \\ & \gamma_1' X_{it} + \epsilon_{it} \end{aligned} \tag{7}$$

$$\begin{aligned} HinduLiteracy_{it} =& \alpha_1 + \beta_1 Religion of DeposedRuler_i + \\ & \beta_2 Muslimemployment_i + \beta_3 Hinduemployment_i \\ & \gamma_1' X_{it} + \epsilon_{it} \end{aligned} \tag{8}$$

The British might not have discriminated against the community of the deposed ruler in government jobs but, at the same time, did not provide that community with schooling

[39] We also provide table 11 controlling for the education level in the region. See table

opportunities. However, this argument is refuted by historical evidence (see Cotton (1898)). According to data from Progress of Education in India, Quinquennial Reviews (1897–1927), the British gave incentives to communities that were not doing well in school enrollment (usually Muslims) through scholarships, reduced fees and the establishment of many schools in districts that were lagging.

Another reason why the literacy of a religious community may have lagged in the region of the deposed ruler is that religious institutions of that religion were stronger there. These institutions can dissuade their followers from taking up secular education, thus lowering the group's literacy outcomes. Chaudhary and Rubin (2011) argue that the years of rule can be taken as a proxy for the strength of religious institutions and shows that years of Muslim rule are negatively associated with Muslim literacy.

We controlled for this effect in two ways. First, we controlled for the year of annexation in our main specification, i.e., equations 1 and 2. Since a later date of the year of annexation implies more time under a ruler associated with religious institutions, the year of annexation becomes a proxy for the strength of religious institutions (in line with Chaudhary and Rubin (2011)). The results are reported in Tables A.7 and A.8. It is clear from Tables A.7 and A.8 that the coefficient associated with the religion of the deposed ruler remains negative and significant, even after including the year of annexation.

Second, we use years of Muslim rule since the medieval period in a district (as per Jha (2013)) as a proxy for the strength of religious institutions. We note that this proxy measure can also be considered to be the strength of the bond between the ruler and his subjects. One would expect that more years of Muslim rule created a stronger bond between the Muslim community and the ruling elite. Thus it is not clear whether its association with literacy rates represent the strength of Muslim institutions (Chaudhary and Rubin, 2011) or the religious identity-based bond discussed by Aziz (1967). Moreover, this measure heavily correlates with the primary variable of interest, i.e. the religion of the deposed ruler. For instance, if the deposed ruler was Muslim in a district, it was more likely that Muslims had

ruled that district for more years.

Nonetheless, we ran our primary OLS equations, controlling for years of Muslim rule. We present these results in Tables A.9 and A.10. As we see from Table A.9, the inclusion of years of Muslim rule causes the coefficient associated with the religion of the deposed ruler on literacy to fall in the case of Muslims. However, it remains negative and significant at the 10% level. Thus, even if religious institutions did play a role, the results indicate some independent effect of removing the ruler by the British. Table A.10 shows that years of Muslim rule do not predict Hindu literacy.

We now discuss the evidence that further highlights the importance of the British removal of the local ruler in making his religious community resist western education. The British had two distinct ways of governing the different parts of India (Iyer, 2010). First was by direct rule, under which the administration's command was under the Governor-General of the East India Company until 1857 and then under the command of the Viceroy of India, who was answerable to the British Parliament. The second was by indirect rule, under which local rulers administered the local population and collected taxes on behalf of the British.

Until now, our analysis only covers directly ruled British India because the rulers had only been deposed in regions where a direct rule was established. Indirectly ruled regions, also known as princely states, continued to be ruled by local kings, and these kings belonged to different religions. Thus, studying the impact of the ruler's religion on the literacy of his subjects in these princely states provides a quasi-experiment as to what would have happened if the local rulers had not been deposed.

As per our conceptual framework (Section 2), deposing the ruler was essential to making locals resist western education. Hence, our framework predicts that we should not find a negative effect of the ruler's religion on the literacy of the subjects if local rulers are not deposed but remain the administrators in their respective kingdoms. Chaudhary and Rubin (2016) study the effect of the ruler's religion on the literacy rates of Hindus and Muslims in these princely states. They found that Muslim rulers had no impact on Muslim literacy

but had a negative and significant impact on Hindu literacy. This result is in line with the intuitive notion that Muslim kings perhaps neglected the literacy of their Hindu subjects or the Hindus found education much less valuable as fewer opportunities were available to them in an administration governed by Muslims.

Importantly for the argument in this paper, these results indicate that the negative effect of the ruler's religion on the literacy rate is unlikely due to the explanation that Muslims were already behind under Muslim kings, even before annexation took place, while Hindus were already behind under Hindu kings. The results using our instrument variable and employment data using Civil lists suggest that the religious communities did better under their own kings before colonization. On the other hand, the results in Chaudhary and Rubin (2016) are consistent with the hypothesis that the removal of the local ruler did play an essential role in how these communities responded to the new opportunities available under the foreign occupiers.

We also do other robustness checks. Given that pre-colonial India was in political turmoil, sometimes we could not classify whether a particular district was under the political control of a Hindu or Muslim king before the British took over. Moreover, kings sometimes neither belonged to the Hindu or Muslim religion. For example, Sikhs controlled most of the Punjab region before the British took over. To ensure these districts are not affecting our results, we test whether our main results are robust to excluding the category when the annexed ruler is of the "other" religion. Table A.11 and Table A.12 report the results. We find that both Muslim and Hindu literacy remains negatively and significantly correlated with the religion of the deposed ruler.

It can also be the case that education is confined to the ruling elites of the time. A small community which were earlier the ruling class might be 'directly' affected when removed from power as they may be imprisoned or exiled, affecting human capital formation within that community. Thus, we test whether the results are just driven by districts where the share in the population of a particular religion is small. We test this by removing the districts

with a share of the Muslim (Hindu) population of less than 1 %, 2%, 3%, and 4%. The results in Tables A.13 and A.14 indicate robustness to the exclusion of such districts. It can also be argued that given that only the elites could pursue education at that time, the previous ruling religious group in the periphery districts had lower literacy simply because the previous ruling elites did not live there. As we have seen before, the overall effect in the periphery districts is lower.[40] Hence, we reproduce table 9 and 10 excluding districts which had less than 4% population of the ruling class. Our results remain robust to the exclusion of such districts.

6 Concluding Remarks

Citizens of a country often identify themselves with the state and are willing to pay an economic price to support its regime. For instance, Fouka and Voth (2016) found that after a political conflict erupted between the German and Greek governments during the Greek sovereign debt crisis, German car sales in Greece declined.[41] In the pre-modern era, when citizens were subjects, this 'self-identification' was closely related to the religious identity shared by the regime and the subjects. In this paper, we have demonstrated that deposing the ruler lowered the literacy outcomes of the subjects who shared their religious identity with the ruler in colonial India.

Importantly, we show that this is true for both the Hindu and the Muslim communities, despite the historians focusing on Muslims. This one-sided observation may have arisen because over 66% of the total Muslim population in our sample lived in regions where the deposed ruler was Muslim in 1911. On the other hand, only 26% of the total Hindus lived in regions ruled by Hindu kings. Thus, an observer who does not have access to district-level data may end up missing the effect on Hindus. Nonetheless, the empirical analysis supports

[40] See, table 9 and 10.

[41] Similarly, a survey conducted in India reported that many citizens claim they reduced the usage of Chinese products substantially after the escalation of border issues between the two countries in June 2020. For the full story please see https://economictimes.indiatimes.com/news/defence/a-year-after-india-china-faceoff-in-china-43-indians-stopped-buying-chinese-products-localcircles-survey/articleshow/83522565.cms

the hypothesis that even Hindus resisted western education where they lost political power. Moreover, we show that this resistance was higher at the core of the kingdoms than at the periphery, consistent with the idea that subjects identify more with the ruler in the core of the kingdom than in the *periphery* region.

Though grounded in a historical context, these results can shed light on some contemporary world issues. For instance, anti-western sentiment in the Muslim world has been linked to military interventions in Muslim countries.[42] Our findings suggest that the policymakers, to ascertain the long-term effects of any intervention, must consider how it garners the trust and support of the local regime and the population. If that is not the case, then even well-intentioned, welfare-improving interventions can backfire.

[42]see this report published by CTC, West Point. https://ctc.usma.edu/military-interventions-jihadi-networks-terrorist-entrepreneurs-islamic-state-terror-wave-rose-high-europe/

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A Tables

Table A.1: Descriptive statistics of the Colonial India districts (1881)

	count	mean	sd	min	max
Muslim Literacy	182	0.03	0.02	0.01	0.16
Hindu Literacy	182	0.04	0.05	0.01	0.50
Literacy gap	182	0.01	0.05	-0.10	0.38
% Hindu	183	0.72	0.30	0.00	2.41
% Muslim	183	0.23	0.26	0.00	0.88
Normal rainfall	194	49.17	31.82	3.52	259.00
Latitude	194	24.83	4.43	13.06	33.57
Longitude	194	80.90	6.23	67.00	94.65
Year annexed by British	194	1809.70	32.47	1757.00	1871.00
Years of Muslim rule	190	79.39	39.67	-98.00	161.00
Distance from Junnar	194	1158.28	473.61	76.64	2292.32

Note: This table lists the districts of British India defined by 1881 Indian Census which were part of Mughal empire (1707) and ruled directly (excluding princely states).
[a] : Census document does not report the Literacy rate of Muslims in certain cities where there is negligible Muslim population. We do robustness checks excluding such sample completely.
[c] Years of Muslim rule is from the establishment of Muslim dynasty in India till the Annexation by British powers

Table A.2: Literacy gap

	Literacy gap(Hindu-Muslim)			
	(1)	(2)	(3)	(4)
Muslim ruler	0.0120	0.0175**		
	(0.00884)	(0.00758)		
Hindu ruler			-0.0579***	-0.0251***
			(0.00738)	(0.00741)
Geographic controls	NO	YES	NO	YES
Demographic controls	NO	YES	NO	YES
Economic controls	NO	YES	NO	YES
Year FE	YES	YES	YES	YES
Observations	549	365	549	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.3: IV results for Muslim literacy

	Muslim Literacy	
	(1)	(2)
Distance from Junnar	0.000741***	
	(0.000180)	
Muslim ruler		-0.0691***
		(0.0240)
Geographic controls	YES	YES
Demographic controls	YES	YES
Economic controls	YES	YES
Year FE	YES	YES
N	365	365
Kleibergen-Paap Wald F statistics	17.0	

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.4: IV results for Hindu literacy

	Hindu Literacy	
	(1)	(2)
Hindu ruler		-0.0493***
		(0.0150)
Distance from Junnar	-0.000957***	
	(0.000167)	
Geographic controls	YES	YES
Demographic controls	YES	YES
Economic controls	YES	YES
Year FE	YES	YES
N	365	365
Kleibergen-Paap Wald F statistics	32.9	

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.5: OLS Muslim literacy with employment as control (1881)

	Muslim literacy	
	(1)	(2)
Muslim ruler	-0.00632*	-0.00865**
	(0.00330)	(0.00409)
muslimemp		-0.0294**
		(0.0137)
hinduemp		-0.0312**
		(0.0143)
Demographic (population)	NO	YES
Geographic controls	NO	YES
N	182	171

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.6: OLS Hindu literacy with employment as control (1881)

	Hindu Literacy	
	(1)	(2)
Hindu ruler	-0.0195**	-0.0156***
	(0.00836)	(0.00493)
hinduemp	-0.0347	-0.0460
	(0.0227)	(0.0479)
muslimemp	-0.0263	-0.0823*
	(0.0290)	(0.0428)
Demographic (population)	NO	NO
Geographic controls	NO	YES
N	171	171

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.7: OLS: Muslim literacy : Years since annexation

	Muslim literacy			
	(1)	(2)	(3)	(4)
Muslim ruler	-0.0248***	-0.0278***	-0.0243***	-0.0212***
	(0.00577)	(0.00483)	(0.00727)	(0.00793)
Geographic controls	NO	YES	YES	YES
Demographic controls	NO	NO	YES	YES
Economic controls	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
N	547	547	365	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.8: OLS: Hindu literacy : Years since annexation

	Hindu literacy			
	(1)	(2)	(3)	(4)
Hindu ruler	-0.0267***	-0.0134***	-0.00965*	-0.0102**
	(0.00572)	(0.00438)	(0.00518)	(0.00502)
Geographic controls	NO	YES	YES	YES
Demographic controls	NO	NO	YES	YES
Economic controls	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
N	563	563	365	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.9: Length of muslim rule : Muslim literacy

	Muslim literacy			
	(1)	(2)	(3)	(4)
Muslim ruler	-0.0144***	-0.0179***	-0.0175**	-0.0152*
	(0.00523)	(0.00604)	(0.00871)	(0.00879)
Years of muslim rule	-0.00897***	-0.00714***	-0.00666**	-0.00680**
	(0.00120)	(0.00203)	(0.00309)	(0.00283)
Geographic controls	NO	YES	YES	YES
Demographic controls	NO	NO	YES	YES
Economic controls	NO	NO	NO	YES
Year FE	YES	YES	YES	YES
N	547	547	365	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.10: Length of muslim rule : Hindu litearcy

	Hindu literacy			
	(1)	(2)	(3)	(4)
Hindu ruler	-0.0161***	-0.0164**	-0.0118**	-0.0105**
	(0.00608)	(0.00816)	(0.00495)	(0.00493)
Years of muslim rule	0.00576***	0.000785	-0.00222	-0.000394
	(0.00187)	(0.00396)	(0.00220)	(0.00234)
Geographic controls	NO	YES	YES	YES
Demographic controls	NO	NO	YES	YES
Economic controls	NO	NO	NO	YES
Income control	YES	YES	YES	YES
Year FE	563	182	365	365

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.11: Muslim Literacy: Excluding religions 1)Gurkhas 2)Mixed/Tribal 3)Neo-Hindu/Tai 4)Sikhs 5)Uncertain

	Muslim Literacy				
	(1)	(2)	(3)	(4)	(5)
Muslim ruler	-0.0138*	-0.0195**	-0.0216***	-0.0181**	-0.0213***
	(0.00729)	(0.00809)	(0.00824)	(0.00875)	(0.00805)
Geographic controls	YES	YES	YES	YES	YES
Demographic controls	YES	YES	YES	YES	YES
Economic controls	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
N	359	361	358	318	357

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.12: Hindu Literacy: Excluding religions 1)Gurkhas 2)Mixed/Tribal 3)Neo-Hindu/Tai 4)Sikhs 5)Uncertain

	Hindu Literacy				
	(1)	(2)	(3)	(4)	(5)
Hindu ruler	-0.0105**	-0.0105**	-0.0106**	-0.00786*	-0.0129**
	(0.00496)	(0.00501)	(0.00503)	(0.00472)	(0.00515)
Geographic controls	YES	YES	YES	YES	YES
Demographic controls	YES	YES	YES	YES	YES
Economic controls	YES	YES	YES	YES	YES
Income control	YES	YES	YES	YES	YES
Year FE	359	361	358	318	357

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.13: Muslim literacy: Excluding district with low muslim population share (1)<1%, (2)<2%, (3)<3%, and (4)<4%

	Muslim Literacy			
	(1)	(2)	(3)	(4)
Muslim ruler	-0.0166**	-0.0117*	-0.0132**	-0.0138**
	(0.00697)	(0.00627)	(0.00611)	(0.00690)
Geographic controls	YES	YES	YES	YES
Demographic controls	YES	YES	YES	YES
Economic controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	356	341	339	320

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.

Table A.14: Hindu literacy: Excluding district with low hindu population share (1)<1%, (2)<2%, (3)<3%, and (4)<4%

	Hindu Literacy			
	(1)	(2)	(3)	(4)
Hindu ruler	-0.0106**	-0.0106**	-0.0106**	-0.0106**
	(0.00498)	(0.00498)	(0.00498)	(0.00494)
Geographic controls	YES	YES	YES	YES
Demographic controls	YES	YES	YES	YES
Economic controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
N	365	365	365	364

Notes: Significance levels at * p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses corrected for district-level clustering.The Muslim ruler dummy (Hindu ruler Dummy) is assigned as one when the religion of last ruler whose territory British annexed is Muslim (Muslim). Demographic controls include population shares of different religions, population shares of different castes, average household size. Geographic controls: coastal dummy, major census city in colonial India, altitude, latitude, and longitude. Economic controls which include occupation classes (industry, agriculture etc.), port city and urbanization.