An Economic History of Education in Colonial India

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Abstract

This paper studies the provision of schooling in British India from 1850 to 1917, when education policy was under the direct control of the East India Company and the British Crown. Although colonial policy made several recommendations to increase mass schooling, the growth of primary education generally lagged behind secondary education over most of the period. In addition to official policy, several local factors were critical to the provision of schools at the district-level. While the level of caste and religious diversity was negatively correlated with the number of public primary schools, the share of Brahmans (traditional Hindu elites) was positively correlated with secondary schools. Moreover, in more diverse districts there was undue private emphasis on secondary versus primary education. Thus, the new public system was successful in developing a network of secondary schools and colleges using public and private sources of revenue as compared to expanding mass primary schooling.

Keywords: Education; Institutions; Colonialism; Development.

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1 Introduction

Economists have long recognized the importance of human capital to economic growth and development. Numerous cross country studies have found a strong positive association between schooling, specifically primary schooling, and economic growth and researchers have theoretically identified several positive links between schooling and development.[1] For example, in traditional agricultural economies, more literate farmers might be quicker to adopt superior inputs, engage in greater information sharing, and thereby increase agricultural production (Schultz (1983)). Educated communities might engage in greater civic participation and encourage collective demand for productive public services (Drèze and Sen (1998)). And, countries with greater education might be faster to adopt existing technological knowledge (Easterlin (1981)). These studies generally suggest that even basic literacy can tremendously increase a country's growth potential.

Despite recognizing the benefits of greater education, there has been tremendous heterogeneity in education performance across countries.[2] While industrialized countries achieved universal literacy several decades ago, developing countries like Chad and India are still lagging behind with literacy rates of 48% and 52% as of 1995. Interestingly, the differences are not a recent phenomenon—as early as 1900, public primary school enrollment rates in the United States were almost 94% whereas in British India they were less than 5%.[3] This remarkable persistence suggests that history is critical to understanding why certain countries were and still are unsuccessful in achieving greater literacy. Did these countries historically lack the institutions that were necessary to develop mass education systems? Did colonization play a role in the initial development of the educational system? If yes, did local factors play any role within colonies? This paper takes a historical approach to answering these

[1] See Glaeser, LaPorta, Lopes-de Silanes, and Shleifer (2004), Sala-I-Martin (1997), Barro and Sala-I-Martin (1995)), Benhabib and Spiegel (1994), Barro (1991), T. Paul Schultz (1988), Easterlin (1981), Schultz (1971) and Schultz (1983) among many others.

[2] See Barro (1991), Barro and Lee (1993), Easterlin (1981) and Gallego (2006) among others who have noted this pattern.

[3] Lindert (2004).

questions by studying the provision of schooling in British India from 1850 to 1917.

During the colonial period, approximately two-thirds of the Indian sub-continent was under the direct control of the British Crown, while the remaining territories were under the rule of various native kings who deferred to the British with regard to defense and foreign policy. In exchange for this co-operation, the 'Princely States' were given the autonomy to manage their local affairs including the provision of schooling. This paper focuses on territories under direct colonial control, i.e. British India—where the East India Company and later the British Crown created a new state system of education that largely replaced the former indigenous network of schools. This particular time period begins with the drafting of Wood's Despatch of 1854, the first official document akin to a national education policy, and ends in 1919 with the complete transfer of education authority to elected Indian ministers at the province-level. While colonial policies stressed the importance of extending mass primary education, there was an undue emphasis on secondary schools and colleges over most of the period. Consequently, mass primary schooling was never achieved and literacy rates remained fairly stable from 1850 to 1917 averaging less than 10% in 1911.

The initial policies introduced by the directors of the East India Company promoted an elitist English education geared towards a small minority of the population—the higher castes and classes. An important goal of these policies was to "form a class of people who may be interpreters between us [the British] and the millions whom we govern, a class of persons Indian in blood and color, but English in taste, in opinion, in morals and intellect."[4] The hope was that this learned class would then enrich the vernacular languages and educate the masses, while providing a steady labor supply to the colonial administrative offices. Though later policies shifted the focus to primary education, they met with limited success because primary education received less than 40% of public education expenditures. Moreover, in the 1880's primary schooling was decentralized to local boards where local factors became

[4]See Macaulay's Minute on education in 1835 (square brackets not in original). This minute was drafted during the Anglicist-Classicist debates on the appropriate medium of instruction in Indian schools—English or the Indian classical languages (Sanskrit and Arabic). Macaulay promoted the cause of English along with a western education.

critical to the provision of schools. The number of public primary primary schools was lower in districts with higher levels of caste and religious diversity because traditional elites preferred developing secondary schools and perhaps due to lower demand for education among disadvantages groups like the lower castes and aboriginal tribes.

This paper reviews the provision of schooling under the new western system of education using both qualitative and quantitative sources of data. Section 2 briefly describes the institutional history and highlights differential patterns between primary and secondary education at the national-level. The brief overview of colonial policy also suggests that local factors were critical to the development of schooling because of public grants to aided schools that were established and managed by private individuals. Section 3 lays out a theoretical framework to explore the role of various local factors on the number of public schools at the district-level. This section emphasizes the importance of Indian social structure to the provision of schooling because of the presence of numerous castes and religions as well as the high level of inequality between castes.

The various hypotheses put forward in section 3 are tested using a new historical dataset on 82 Indian districts, which is described in section 4 and the empirical results are discussed in section 5. Caste and religious diversity and the population share of Brahmans (the traditional Hindu elite caste) emerge as very significant factors in the provision of primary and secondary schools although, there are substantial differences in the observed effects both across the level and type of school. Moreover, the empirical findings suggest that there was an undue private emphasis on secondary schools over primary schools in districts with higher levels of caste and religious diversity. The under provision of primary schools has strong implications for literacy because 1911 literacy rates are positively correlated with 1901 public primary schools and are uncorrelated with secondary schools. Section 6 concludes noting particular colonial policies and local factors, which were detrimental to the cause of mass primary schooling in this period.

2 Institutional History

2.1 Colonial Schools and Policies

Over the course of the 19^{th} century, the former indigenous system of schooling in British India was largely replaced by the new state system of education introduced formally by the East India Company in 1854 and developed by the British Crown after 1857.[5] Under the former indigenous system, schools were of two types—elite religious schools geared towards students interested in a lifetime of higher learning and local elementary schools where village boys were introduced to the 3 R's in the vernacular medium.[6] Although there is no systematic data to gauge the spread of the indigenous school system, historians claim that they were common in many parts of the country and approximately 8% to 12% of the male population was literate while women and lower castes were generally illiterate.[7]

The East India Company was indifferent to the provision of schooling until the early 19^{th} century when it set aside public grants to support Oriental studies and promote western sciences.[8] Although no vigorous efforts were made to encourage local indigenous schools, the Company promoted new public schools of western learning to serve the higher classes of society.[9] The expectation was that these schools would produce a group of English educated elites who could then work in the colonial administrative offices. Moreover, the hope was

[5]The East India Company controlled the Indian sub-continent until the Revolt of 1857. After the Revolt, the British Crown took over control from the Company.

[6]These schools were more informal in nature and typically developed to suit local conditions.

[7]Nurullah and Naik (1951), page 24. Basu (1982) suggests that literacy might have been universal among higher caste Brahman and Kshatriya males.

[8]The Charter Act of 1813 (clause 43) allocated a budget of one hundred thousand rupees for this purpose covered by surplus territorial revenues. See Sharp and Richey (1920) for more details.

[9]Though the Charter Act of 1813 had not specified an appropriate language of instruction, the General Committee of Public Instruction in Bengal emphasized English as the medium of instruction. This led to various debates and they were finally resolved in 1835 when Governor General Bentinck, following Macaulay's infamous minute, established English as the official language of instruction. Macaulay wrote an influential minute on education in 1835 promoting English instruction in western sciences and philosophy, while expressing strong criticism against Oriental languages and literature. This minute is particularly famous because it marks a turning point in the history of Indian education, after which English was embraced as the language of instruction in Indian schools and colleges. Ghosh (2000) provides a nice history of the events leading up to the minute and suggests that Bentinck was really responsible for introducing English education in India and not Macaulay.

that the educated elites would promote schooling among the rural masses—a concept that came to be known as the 'downward filtration theory.'

Wood's Education Despatch of 1854 was the first official document, which outlined the Company's role with regard to the provision of schooling in British India. The Despatch created an elaborate machinery of education departments at the province-level and established guidelines for the development of schools at the primary, secondary and collegiate level. While earlier policies had promoted "a very high degree of education for a small number of natives"[10] belonging to the upper castes, the Company now emphasized the importance of creating a mass schooling system with instruction in the vernacular medium. Given the high costs of building such a system, the Despatch introduced public subsidies known as 'grant-in-aids' to partially support schools under private management that came to be known as aided schools.[11] By encouraging grant-in-aids, the East India Company created an important role for private Indian enterprise in the public school system. Although the British Crown formally took control over the Indian sub-continent in 1857, the general guidelines of Wood's Despatch set the tone for subsequent colonial policies.

Beginning in the 1860's, a new system of schooling emerged with government universities, a network of affiliated colleges and numerous primary and secondary schools. As shown in figure 1, the new public system incorporated schools managed by provincial governments and local boards (district and municipal) as well as privately managed schools known as aided and unaided schools. While aided schools received public subsidies or grant-in-aids, unaided schools did not receive public grants but were nonetheless classified under the public system because their students were allowed to take public examinations offered by either education departments or colleges. Although many of the former indigenous schools disappeared over

[10]See Despatch to Government of India on the Subject of General Education in India (1854), paragraph 39.

[11]Under this system, grants were made available to all schools that followed a secular curriculum (religious neutrality), were under local management, and open to inspection by education officers. Grants could be allocated towards specific charges, for example teacher salaries or buildings. However, they could not cover all the operating expenditures of the institutions and the Despatch mandated that eligible schools were required to charge fees, nominal if necessary, to encourage regular attendance. Provincial governments were given substantial leeway in framing the eligibility rules for the grants.

this period, some were successfully converted into public aided schools and the rest were classified as private schools because they did not conform to education department standards. From 1855 to 1882, the number of private schools declined by almost 50% from 49,524 to 25,166, while government and aided schools increased by over 120% from 50,998 to 114,171.[12]

As the new public system developed, the demand for an English medium education became more entrenched and there was a dramatic increase in the number of English medium secondary schools and colleges over the second half of the 19^{th} century.[13] Subsequent reports and commissions noted this particular trend and highlighted the need to improve mass primary schooling. For example, the Indian Education Commission Report of 1883 made primary education a subject of critical importance with a declaration that "elementary education of the masses, its provision, extension, and improvements, to be that part of the educational system to which the strenuous efforts of the State should now be directed in a still larger measure than heretofore." As part of the decentralizing schemes of the 1880's, the provision of primary schooling was decentralized to local councils at the district and municipal-level, and they were encouraged to increase the number of primary schools by either building new schools or by offering grant-in-aids to private indigenous schools and thereby converting them to aided schools under public inspection.[14] Numerous schemes were outlined to increase schooling along Muslims, aboriginal tribes, lower castes and women—groups with below average literacy and special needs.[15] Despite these recommendations, the commission enthusiastically supported the imposition of school fees, which they viewed as

[12]These estimates are based on data from the Report of the Indian Education Commission (1883) and should be interpreted with some caution because systematic collection of data did not begin till 1886. See Government of India (1883-84)

[13]see Nurullah and Naik (1951), Basu (1974), and Ghosh (2000). For example, according to Basu (1974) the number English secondary schools and arts colleges more than doubled from 1881/82 to 1921/22 from 2,133 to 4,904, while the number of pupils more than quintupled from 149,233 to 823,416 (page 105).

[14]Provinces responded in different ways to the general guidelines. Some provinces like Bombay created a new system of local board schools, while aided schools were more common in Bengal.

[15]Larger grant-in-aids were made available to schools in "backward districts", various scholarships were established to encourage education among these groups, and normal schools were created to train teachers for Muslim and girls schools. All public funds were deemed eligible for promoting Muslim education, especially at the higher English and collegiate level where Muslims were more in need of help.

an important source of revenues.

While colonial policy in the 19^{th} century focused on quantitative improvements and private support for schooling, Lord Curzon switched the focus to quality improvements and greater state control in the early 20^{th} century.[16] Former policies of promoting aided secondary schools and colleges were abandoned in favor of instituting government schools as role models for aided schools. The importance of mass primary schooling was emphasized yet again and various schemes were developed to increase literacy, which was as low as 7% in 1911. However, the Government of India upheld its policy of levying fees, nominal in some cases, and rejected new schemes for introducing compulsory primary schooling until 1918.[17] Before compulsory schooling laws could be enacted in all the provinces, education was transferred to the control of provincial governments with elected Indian ministers. This change in administrative responsibility was part of the Montague-Chelmsford reforms of 1919 and marked the end of colonial responsibility towards the provision of schooling.

2.2 Expenditures and Enrollment

Colonial education policy involved multiple acts, commissions, and reports that made numerous recommendations to increase and improve schooling within India. However, official dialogue never translated into sufficient public revenues for schooling. Table 1 presents comparative data on human capital expenditures at the national level, which strongly suggest that British India lagged behind the rest of the world in terms of public schooling expendi-

[16]In the early 1900's, growing political unrest and rising nationalism among educated Indians made colonial officers wary of the type of education imparted at secondary schools and colleges. Consequently, the state became a more active player in supervising aided and unaided institutions. Under these conditions, the Indian Universities Act of 1904 was formulated with the stated purpose of improving efficiency among Indian universities. However, the act generated a storm of criticism among the Indian intelligentsia who viewed the Act as an effort to curb Indian enterprise in secondary education. See Report of the Indian Universities Commission (1902), Government Resolution on Educational Policy (1904), Government Resolution on Educational Policy (1913), and Report of the Calcutta Universities Commission (1917) for more details.

[17]Gokhale, an Indian champion of primary education, introduced a private bill in 1911 that outlined a modest system of compulsory education for boys between the ages of six and ten. But the bill was rejected on the grounds that there was no popular demand for such a measure. Interestingly, some of the landed classes of India also opposed the extension of primary schooling often suggesting that the current system was making adequate progress. Mukhopadhyay (1984) provides numerous examples of landed opposition to mass education in Bengal in this period.

tures.[18] Government expenditures per capita averaged less than 0.01 pounds in British India from 1860 to 1912 and were lower than the average for Indian Princely States (0.02) and other underdeveloped countries like Brazil and Mexico (0.05). Moreover, expenditure levels were fairly constant over this period although the public educational share of the total budget increased from 1.2% in 1860 to almost 6% in 1912. But even expressed as a proportion, public human capital expenditures in British India were lower than countries at comparative levels of development like other underdeveloped countries (FU) and Indian Princely States.

Although it is inherently difficult to quantify an adequate threshold for education spending, public expenditures under the colonial government would be considered low by most standards. Moreover, the colonial government allocated the small amount of expenditures to different levels of education including secondary schools and colleges. In fact primary schooling received a relatively small share of public spending—direct public expenditures (from provincial governments and local boards) on primary schools averaged only 34.3% from 1891/92 to 1916/17, while the rest were allocated to secondary schools, colleges and other indirect categories of expenditures.[19] In comparison, the United States allocated more than 90% of public expenditures to primary education from 1850 to 1890 and devoted larger public resources to secondary schooling only in the early 20^{th} century when over 85% of the population was able to read and write. England allocated 59% of public education expenditures to primary schooling in 1890, while Japan (the country to which British India is frequently compared) allocated 69% to primary schools.[20] The undue public emphasis on secondary and higher-secondary education has been noted by several historians who have suggested that greater private demand for secondary schooling influenced colonial attitudes and policy.[21] In fact, landed and educated elites often lobbied the colonial government

[18]Education is the dominant category in human capital expenditures. However, comparing the Indian data with other sources suggests that the expenditures reported by Davis and Huttenback (1986) might include minor expenditures that were beneficial to the attainment of human capital.

[19]See Progress of Education in India: Quinquennial Review (1917-22), vol. II, page 115

[20]Calculations are based on Lindert (2004) volume 2, which provides a break-down of public education expenditures by level of education for a sample of countries.

[21]See Nurullah and Naik (1951), Basu (1974), Basu (1982), and Whitehead (2005)

against higher spending on primary vernacular education, which suggests that local factors were critical to the development of schooling in British India.

Although there was a marked increase in enrollment while the Crown controlled education policy, the average number of pupils attending school as late as 1917 was only one out of every five children of school-age with substantial provincial heterogeneity in enrollment rates. Tables 2 and 3 present disaggregated data on the number of public institutions per capita and the percentage of the population enrolled therein by level of instruction—primary, secondary, and collegiate.[22] Collegiate and secondary education expanded tremendously from 1887 to 1917—the percentage of the population enrolled in secondary schools and colleges increased by 149% and 358% respectively (see table 2) with particularly striking increases in Bengal, Bombay, Punjab, and the Central Provinces. In comparison, the growth of primary schools and enrollment lagged behind—the number of primary schools per capita increased by 43% as compared to 53% for colleges and secondary schools (see table 3). Moreover, the number of primary schools and enrollment actually declined from 1896/97 to 1901/02 before picking up in the early 20^{th} century when larger public revenues were specifically made available for primary education. While the share of the population enrolled in primary schools increased by 108% from 1886/87 to 1916/17, the share enrolled in colleges increased by over 350%.

The growth in schools and enrollments are especially interesting in comparison to patterns in other countries. For example, in 1916/17, India had a larger share of the population enrolled in secondary schools as compared to either France or Japan and was only marginally below England and Wales. The percentage of the population enrolled in secondary schools was 0.49 for India, 0.35 for Japan, 0.32 for France, and 0.62 for England. However, the Indian population enrolled in primary schools was 2.38—lower than Brazil (2.61), Russia (3.77), Sri Lanka (8.94), Japan (13.07), and France (13.9).[23] Moreover, these differences are

[22]Secondary schools include middle schools and high schools that had attached primary classes for students to go from primary to advanced stages at the same school. The primary classes attached to these schools offered superior instruction as compared to a regular primary school. Thus, the number of pupils at secondary schools includes some primary school students who had higher demands for an elite English or vernacular education leading to college.

[23]See Government of India (1886-1922) vol. 1912-17, page X. These differences persist even after account-

not entirely driven by differential enrollments in private secondary schools as compared to private primary schools. In 1900 public primary school enrollment per 1000 children of ages 5 to 14 was 625 for France, 720 for the United Kingdom, 507 for Japan and a mere 47 pupils for British India. In comparison, public secondary school enrollment was 11 in France, 7 in the United Kingdom, 13 in Japan and 9 in British India.[24] This differential performance in secondary versus primary schooling is striking given the extremely poor overall literacy record of British India.

2.3 Literacy

Mass primary schooling was never achieved under colonial education policy and literacy rates remained fairly stable from 1850 to 1919 averaging less than 10% in 1911. Table 4 presents estimates of 1911 provincial literacy rates by gender for different castes and religions. As is evident, average literacy was extremely low and female literacy was almost nonexistent—on average less than 1 in 100 women was recorded as literate, with the exception of Jains and Christians. Moreover, literacy rates varied tremendously between different caste and religious groups.[25] Literacy among Hindus mirrored the social hierarchy of the caste system despite provincial heterogeneity in levels—male Brahman literacy ranged from 22% in United Provinces to 64% in Bengal Proper, while lower caste males had below average literacy that varied from 0.5% in United Provinces to 6% in Bengal Proper. The small number of literate lower caste males were frequently educated in missionary schools that

ing for primary students in secondary schools.

[24]See Lindert (2004), vol. 2.

[25]The estimates for Hindu castes are based on caste samples from certain areas of the province and do not include an exhaustive list of castes belonging to each group. The groups are based on the social precedence tables outlined in the census of 1901, which enumerated castes that belonged to twice-born rank (higher castes), clean sudras, inferior sudras, and lower castes. The data appendix to Chaudhary (2007) discusses how these tables were organized in more detail. It is not clear a priori whether this would systematically bias the estimates unless the least literate lower castes and the most literate higher castes were the only castes enumerated in each group, which does not appear to be the case since there is significant variation within 'lower castes.' More often the census appears to have selected castes based on their numerical strength. Madras province is the exception where literacy rates were computed for all enumerated castes.

were assisted by government grant-in-aids.[26] The limited success of official and non-official efforts to increase lower caste literacy was attributed to low demand, poverty, and caste norms that made it difficult for lower caste boys to attend public schools.

Literacy among aboriginal tribes was even lower than among the lower castes with fewer than 1% of the tribes recorded as literate in any province. The tribes were found in large numbers in Assam, parts of Bengal, and the jungles of central India. Missionaries were the chief agency that worked for their educational advancement, but their extreme poverty and geographic remoteness limited the success of missionary endeavors. Education among Muslims, the dominant religious minority (approximately 22% of the population in 1911) also lagged behind Hindus. This was especially true at the secondary and collegiate levels where Muslims had been slower to adopt the English system as compared to their Hindu brethren.[27] Colonial policy directed significant attention toward increasing Muslim enrollment in public schools and the efforts were largely successful in bringing Muslim primary enrollment on par with Hindu enrollment.

Colonial policy in British India created a new public system of education and allocated some amount of public funds to every level of education from universities and colleges to primary schools. Although private demand for an English medium education led to a dramatic increase in secondary schools and colleges, the growth of mass primary schooling lagged behind as noted by the differential enrollment patterns and the low level of literacy. Colonial officials frequently cited low demand as the chief obstacle to increasing literacy but they introduced policies that only worsened pre-existing conditions—school fees were levied over the entire period and public subsidies were introduced to minimize state costs and encourage private efforts to develop schools. Consequently, these policies created an important role for local factors to influence the provision of public schooling and as seen below some of the

[26]Official policy also offered concessions through fee exemptions, higher grant-in-aids, and scholarships to lower caste pupils.

[27]This was partly related to Muslim reluctance to relinquish their former glory as rulers of the Indian sub-continent when courts were dominated by the Persian language, and partly due to religious doctrines that often required Koran study at younger ages, which in turn delayed the start of secular education for Muslims.

local factors negatively affected the provision of primary schools.

3 Theoretical Framework

Given the context of colonial policies, this sections explores how local factors could have influenced the provision of schooling at the district-level.[28] The goal of the district-level analysis is to isolate specific variables that might have affected the equilibrium number of schools and to this end, I examine explanatory factors that were likely to influence both the demand and supply of schools.

The literacy patterns of table 4 strongly suggest that there was substantial heterogeneity in the demand for education between different castes and religions perhaps due to differential rates of return and opportunity costs. Therefore, the population shares of Brahmans, lower castes, Muslims, and aboriginal tribes are important independent variables. The high level of Brahman literacy suggests that this group heavily valued the new public system of education. Moreover, they were more likely to prefer secondary and middle schools with attached primary classes, which allowed students to go from primary to advanced grades at the same school because primary classes at these schools offered a superior instruction as compared to regular primary schools. Thus, we would expect the Brahman share to be positively correlated with the number of secondary schools.[29]

It is unclear a priori what signs to expect for the share of disadvantaged groups like the lower castes and aboriginal tribes. Even though they had very low literacy, missionaries were particularly active in promoting schools for them and official policies also encouraged public support for schools in areas heavily populated by lower castes and aboriginal tribes. This suggests that perhaps provincial government schools would be positively correlated with their population share. If missionaries relied on grant-in-aids, then lower castes and aboriginal tribes could also be positively associated with aided schools. Given Muslims

[28] An Indian district is equivalent to a US county.

[29] In the analysis, secondary schools include middle English and middle vernacular schools plus high schools, while primary schools include all elementary and lower elementary schools.

preferred indigenous private religious schools, we would expect their population share to be positively associated with private schools and negatively associated with public schools. However, provincial governments also established schools to encourage Muslim enrollment and so their population share could be positively correlated with provincial government schools.

The emerging literature on ethnic fragmentation and public goods suggests that caste and religious diversity can play an important role in the provision of local services like education.[30] For example, heterogeneous preferences across different Hindu castes and religions could negatively affect the provision of public schools, particularly at the primary level, where decentralized local boards allocated funds toward schools and other local services.[31] Higher castes and classes were disproportionately represented on local boards and perhaps they were more effective in influencing local policy in more diverse districts.[32] Given Brahmans and higher castes were distinct in many salient respects from the rest of the population, one might expect them to undervalue societal benefits of mass schooling suggesting a potential under-provision of primary schools in more diverse districts.[33] In the econometric analysis, a Herfindahl-based caste and religious fragmentation index is used to proxy for the level of diversity.

Besides social structures, occupational composition and market economy are also likely

[30]See Alesina, Baqir, and Easterly (1999), Goldin and Katz (1999), Vigdor (2004), and Miguel and Gugerty (2005) among others. The general findings from this literature indicate that communities with more ethnically diverse populations are less successful in supplying public goods.

[31]Rural district boards were in charge of local infrastructure, education, medical services, and other services specific to individual provinces. Urban municipal boards were in charge of urban sanitation, urban education, and other minor services. See Chaudhary (2007) for more details on rural district boards.

[32]For example, in the province of Bengal in 1901 almost 80% of lawyers and landowners were either Brahman or some other higher caste. Less than 2% of lower castes in Bengal practised law. See Chaudhary (2007) for more evidence on this type of occupational inequality by caste. Until the 1920's, important landowners were common nominated members, while lawyers and traders accounted for many of the elected members. Lower caste leaders were able to secure mandated political representation a couple decades prior to Indian independence and after 1920 lower caste leaders were included among nominated members.

[33]Discussions in Government of India (1886-1922) Quinquennial Reviews often allude to the reluctance of elites to support primary vernacular schools. See Basu (1974) for more examples. Mukhopadhyay (1984) provides specifical examples of newspaper articles and editorials in Bengal, which argued against providing education for the rural masses. He also highlights how the British Indian Association that spoke for the interests of the landed elite of Bengal opposed initial attempts to levy local taxes to support primary education.

to affect the demand and supply of public schools. Districts with larger populations engaged in professional employment are probably more likely to promote and develop schools at all levels, while areas with larger agricultural populations might place a lower premium on education, particularly secondary schooling. In order to capture these effects the analysis includes the share of the district population supported by agriculture, industrial occupations, commerce, and professional employment.

Finally, higher income probably increases public and private revenues available to construct and operate schools. Since there are no data available on district incomes, I include two proxies to capture income—income tax collections and land tax revenues per capita. Income taxes were generally collected from government employees and other workers who were part of the formal sector of the economy where incomes were documented. These taxes were collected from a very small share of the population and capture the higher tail of the formal income distribution because they were applicable on only high income earners. In comparison, land tax revenues capture the British assessment of the land value of the district. Additional levies on land taxes were an important revenue source for local boards and so we would expect land taxes to be positively correlated with primary local board schools.

The district-level analysis includes province fixed effects to capture all time-invariant provincial characteristics including policies, which were set at the national or province-level. While this limits the ability to explore the direct effects of various provincial policies in the cross-sectional framework, including province fixed effects controls for the geography, caste structures, design of local boards, and other unobservables that vary by province and are likely to be correlated with other factors that affect schools. Thus, including province fixed effects reduces potential omitted variables bias and allows a cleaner interpretation of the explanatory variables.

4 Data

For the empirical analysis, I assembled a new district-level dataset of 82 districts that links data from the Indian district gazetteers to the colonial censuses of 1901 and 1911. Though district gazetteers are available for the last decade of the 19^{th} century, the reported statistics are generally incomplete. Therefore, I begin the analysis in 1901 when uniform statistics are available for all districts in the sample. Moreover, I restrict the panel to the 1901 and 1911 cross-sections to maintain consistency with the decennial censuses.

The district gazetteers are a unique source of schooling data for the colonial period. Each district series has two parts, A and B: part A describes the history, geography, culture, administration, and economic situation of the district, while part B provide statistical tables that complement the discussion in part A. Although the statistical tables contain data on wide variety of district-level variables, they do have some shortcomings. First, detailed education data on different school-types are only available for a subset of districts in Bengal (including Bihar and Orissa), Bombay and Madras provinces.[34] Second, enrollment and especially education expenditure data are generally incomplete and not reported at the same level of detail as the number of schools.[35] Despite these limitations, the data on number of schools is fairly complete and reports the number of schools for each school-type—provincial government, local boards (district or municipal), aided and unaided.[36] Given the different school-levels reported in the gazetteers, primary schools include upper-primary and lower-primary

[34]There is limited statistical data in the gazetteers on the pure urban cities of Bombay, Calcutta and Madras as well as few of the smaller hill districts (for e.g. Angul, Chittagong Hill Tracts, etc.).

[35]For example, the Madras district gazetteers do not report detailed enrollment figures for the different school types—provincial government, local councils, aided and unaided. The detailed expenditure data are incomplete in 1901 and unreported for many districts in 1911. Even when the district gazetteers do report enrollment data, they are often unclear whether aggregate enrollment represent pupils enumerated on a certain date or average daily attendance. The Quinquennial Reviews of Education that report national and provincial-level data discuss certain problems with accurate enumeration of pupils and these concerns are probably valid for the enrollment data in the gazetteers as well.

[36]Detailed data on schools is available only for 1901/02 and 1911/12 in Bengal and Bombay and for 1902/03 and 1912/13 for Madras. So, the analysis merges the 1901/02 Bengal and Bombay data plus the 1902/03 Madras data to the 1901 cross-section, and does the same for the 1911 cross-section. However, total number of public, private and primary schools are available for 1901 and 1911, and the first set of results in table 6 use that data.

schools in Bengal, primary in Bombay, and primary (1902/03), higher-elementary (1912/13) and lower-elementary (1912/13) in Madras. Secondary schools include high schools, middle English schools and middle vernacular schools in Bengal and Bombay, and upper-secondary (1902/03), lower-secondary (1902/03), and secondary (1912/13) in Madras.[37] Thus, the econometric analysis focuses on schools as the outcome variable with the sample restricted to districts in Bengal, Bombay and Madras with relatively complete data.[38] In addition to schooling variables, I also extracted data on income tax and land tax revenues from the gazetteers.

Using colonial censuses, I constructed population, demographic, and occupational variables at the district-level.[39] Since there are concerns pertaining to the accuracy of finer occupational categories enumerated in the censuses, I constructed broad occupational types–agriculture, commerce, industry, and professions–to minimize measurement error. The 1901 census has province-level social precedence tables, which indicate specific castes enumerated in higher and lower categories based on local opinion and I used these tables to construct the population shares of lower castes in 1901 and 1911.[40] Unfortunately, the 1911 Madras census only reports district-level data for a subset of castes and therefore the 1911 caste variables for Madras are the same as 1901.[41] However, the econometric analysis clusters the standard errors to account for potential non-independence of errors within districts.

Finally, I used the colonial caste censuses to construct the population shares of Brahmans as well as the caste and religious fragmentation index (CRFI), which is defined as $CRFI =$

[37]Given the changes in how school-levels were reported in some of the provinces from 1901 to 1911, I did robustness checks interacting province dummies with the 1911 dummy to control for changes that affected all districts in each province in the same manner in 1911 and results were essentially unchanged.

[38]Data on Bombay province does not include the six districts of Sind. The four small hill districts of Angul, Chittagong Hill Tracts, Darjeeling and Nilgiris are excluded because their data is generally incomplete. Moreover, the hill districts have very small populations and are extremely distinct from other districts in the sample. Finally, the analysis does not include the pure urban cities of Bombay, Madras and Calcutta, which are again very different from the rest of the rural districts in the sample and for which comparable data is unavailable.

[39]Government of India (1901–1911), Census of India.

[40]Castes included in lower castes are generally the same as the Scheduled Castes in post-independence India. I double-checked the caste lists for lower castes against the 1950 constitution of India, which enumerates Scheduled Castes to ensure that the social precedence tables were capturing similar castes.

[41]This applies to the 22 districts in Madras province in 1911.

$1 - \sum s_i^2$ where s_i is the population share of each caste or religious group.[42] Following Banerjee and Somanathan (2007), I restrict the caste data to Hindu castes with population shares greater than 1% of the province population in 1901 and 1911 respecticely.[43] CRFI includes Hindu castes with population shares greater than 1% of the province population, Muslims, Christians, aboriginal tribes, Buddhists, Sikhs, Jains and Others, which include the small numbers of Parsis along with castes that did not constitute 1% of the province population. CRFI treats individual caste and religious groups as internally homogeneous and can be interpreted as the probability that two randomly drawn individuals from a district belong to different castes or religions. Table 5 presents summary statistics of the variables by year. Brahmans, the traditional elite caste, averaged less than 4% of the district population, while the lower castes accounted for 16%. The mean CRFI was quite high and indicates that the probability of selecting two random people in a district of different castes or religions was 72%. Many of the population and demographic variables were fairly stable from 1901 to 1911, while the number of public primary schools increased over the decade.

5 Results

For the econometric analysis, I estimated the following reduced-form equation with the number of schools per 1000 children of ages 5 to 15 as the dependent variable, Y.[44]

$$Y_{ipt} = \alpha + \beta CRFI_{ipt} + \gamma ShareBrahman_{ipt} + \eta ShareLowerCastes_{ipt} + \theta ShareReligion_{ipt} + \zeta X_{ipt} + \lambda_t + \delta_p + \varepsilon_{ipt}$$

[42] This index is similar to the Herfindahl-based ethnic-linguistic fractionalization index used in the fragmentation literature. Potential concerns relating to the caste censuses are addressed in Chaudhary (2007).

[43] For this purpose, Bengal (including Bihar and Orissa) was treated as a single province in 1901 and 1911. However, the results are robust to indices that treat Bihar and Orissa as a separate province in 1911. While the 1901 census treats Bengal, Bihar and Orissa as one province, the 1911 census reports statistics separately for Greater Bengal, and Bihar and Orissa, which was formally separated from Bengal in 1912. Due to incomplete data, the 1911 CRFI for Madras districts is the same as the 1901. For districts in Madras created after 1901, I reweighed the 1901 caste data according to the area used to form the new district.

[44] The 1901 census discusses potential problems with the age-specific enumeration because people were often uncertain of their age and were more likely to refer to their age as a multiple of five. This introduces some measurement error but is more likely to be classical measurement error, which still yields consistent estimates. The results are unchanged for per-capita dependent variables, which are more accurately measured.

Here i represents the district, p represents the province, and t represents the year—1901 or 1911. As mentioned earlier, I clustered the standard errors to account for potential non-independence of errors within districts. Share Religion includes the main religious groups—Muslims, Christians, and aboriginal tribes. X includes a set of controls to capture district-level development, income, and occupational structures. λ_t is a dummy for the 1911 cross-section and controls for temporal patterns that uniformly affect all districts, δ_p are province dummies to capture time-invariant province characteristics, and ε_{ipt} is the district-specific error term.[45]

Table 6 presents the first set of results on schools per 1000 children of ages 5 to 15. The first three columns have total schools, public schools—provincial government, local board (district or municipal), aided, and unaided—and private schools as the dependent variable, while the last three columns focus on similar specifications for primary schools as the dependent variable. The results suggest that local factors were important for the provision of schools in the early 20^{th} century. Districts with a higher degree of caste and religious fragmentation are correlated with fewer total schools and in particular fewer public primary schools. We can interpret the CRFI coefficient as the change when a district moves from complete homogeneity (CRFI=0) to complete heterogeneity (CRFI=1) but a more intuitive interpretation within the sample context indicates that when CRFI increases by one standard deviation (from a mean of 0.72 to 0.88), total schools decrease by 0.7241—a decrease of almost 25% from the mean value of total schools. The effects on total schools are largely driven by public primary schools where a one standard deviation increase in CRFI decreases the average number of public primary schools by 29%. Thus, the effects of CRFI are both economically and statistically significant.

Among the different castes and religions, the Brahman population share is negatively correlated with total private schools, while Muslims are negatively correlated with total schools, especially public primary schools. These effects are also economically significant—if

[45]Province dummies are included for Bengal Proper, Bihar and Orissa, Bombay, and Madras.

the Brahman population increases by one standard deviation (from a mean of 3.8% to 6.7%), the mean value of total private schools per 1000 children of ages 5 to 15 decrease by 23.8% and if the Muslim population share increases by one standard deviation (from a mean of 20.6% to 44.6%), average number of public primary schools decrease by 46%. The findings confirm that Brahmans valued the new public system of education introduced by the British over the former private indigenous system. However, Muslims were unlikely to attend public schools and preferred private religious schools.

Land tax revenues emerge as particularly important to public primary schools, which is as expected because additional levies on land revenues were an important source of revenues for local councils that were in charge of primary schooling. The land tax coefficient suggests that a one standard deviation rise in revenue increases the average number of public primary schools by 16%. Interestingly, none of the development controls are statistically significant although fraction rural is partially significant for primary schools. The development controls are strongly correlated with the population share of professionals—districts with larger populations of doctors, lawyers, and teachers are also more urban with a larger population density. And, so fraction profession probably reflects some effects of greater development. Fraction profession is positively correlated with the provision of all schools and the coefficient indicates that a one standard deviation increase (from a mean of 1.6% to 2.4%) in the professional share increases the mean value of total schools by 24%. Finally, the coefficient on the 1911 dummy suggests that the number of public schools increased from 1901 to 1911, while private schools decreased.

The evidence thus far suggests that local factors like the degree of caste and religious diversity and number of professionals were important determinants of public primary schools in the colonial period. Given the heterogeneity of public school-types, it is difficult to interpret variables like CRFI and isolate specific mechanisms underlying the findings. Therefore, the next set of results focus on individual school-types within the new public system—provincial government, local board, aided and unaided schools. I have also created an additional cate-

gory of state supported schools, which include provincial government, local board and aided schools. Table 7 presents results for each of these school types at the primary-level. There were very few provincial government primary schools and specification 1 suggests that local factors are not critical to explaining the variation in these schools. This is not too surprising given these schools were managed by education officers at the province-level.

Local board schools in specification 2 include both urban municipal schools and rural board schools, which were directly managed by municipal and rural district boards respectively.[46] Interestingly, CRFI is statistically insignificant and small in magnitude for these schools, which suggests that perhaps their number was determined by official policy and social divisions were unlikely to influence policy outcomes. As discussed in section 2, the Education Commission Report of 1883 encouraged local boards to develop schools in areas populated by lower castes, aboriginal tribes and Muslims. Although the coefficient for lower castes is statistically insignificant, coefficients on the population share of tribes and Muslims are statistically significant. Land taxes can be interpreted as a supply-side fiscal variable for local board schools with the coefficient indicating that a 50% increase in the mean value of land tax increases the mean number of board schools by 26%. Given local councils and their land tax revenues were responsible for the provision of local infrastructure, medical services and primary schooling, the effect on board schools is fairly reasonable.

Specifications 3 and 4 on aided and unaided schools emphasize the unique role of caste and religious diversity in the district-level analysis. Two mutually nonexclusive explanations can account for the negative coefficient on CRFI in specification 3 for aided schools. First, as discussed in section 3 higher castes and classes (particularly Brahmans) were unequally represented on local boards and had the political influence to successfully reduce grant-in-aids (the total number of grants awarded or the value per grant) in more heterogeneous districts either because they were more likely to use secondary schools or they did not value the social benefits of providing schools to other groups within the district. Many of the

[46]Urban municipal schools represent a small share of local fund schools because the urban population was less than 10% of the total population.

secondary schools had attached primary classes and offered superior instruction as compared to normal primary schools, which served the more mundane elementary school needs of the rural population. Anecdotal evidence from the Report of the Royal Commission upon Decentralization in India (1908) often allude to the reluctance of higher caste board members to support primary schooling. For example, Mr. C.T.H. Johnson, a district officer in Madras province told the committee that "The Local Boards represent the monied, educated and land-owning classes; they are not really in favor of increased primary education, because it makes labor more difficult to handle; they are not in favor of a reduction of lower secondary education because they like to have the lower secondary schools to which men of their type send their children." Results on secondary schools (table 8) provide further evidence that Brahmans were more likely to attend secondary schools.

However, coordination problems can also account for the negative association between CRFI and aided schools. These schools were partially funded through private resources because private individuals applied to local boards for public grant-in-aids, which helped defray part of the costs of establishing and maintaining an aided school. Heterogeneous preferences between different castes and religions could have undermined the collective ability of a diverse district to come together and establish aided schools. This effect would be stronger in contexts where groups only cared about public provision when they were direct beneficiaries and so again undervalued the potential societal benefits of primary schooling. Given the coefficient magnitude, which suggests that a one standard deviation rise in CRFI would reduce the average number of aided schools by almost 23%, CRFI probably reflects some combination of political inequality and coordination problems.

In comparison, the strong negative association between CRFI and unaided schools is probably more indicative of coordination problems. Indian social structure might have worsened these problems because lower castes were frequently denied access to schools due to social norms.[47] While this particular interpretation of CRFI stresses a supply-side constraint,

[47]During this period, lower castes occupied a particularly low socio-economic position and were also referred to as untouchables or depressed classes. There was a firm belief in their impurity, which was linked

it is possible that low demand for schooling among lower caste populations also contributed to fewer unaided schools in more diverse districts. British officials and contemporary historians alike have emphasized that lower caste populations had lower demand for schooling because of higher opportunity costs in terms of a child's time and school fees, poverty and discrimination. Although fraction lower castes is statistically insignificant, CRFI is positively correlated with fraction lower castes in many provinces, which suggests that low demand may also contribute to the observed negative relationship. While land taxes reflected a supply-side fiscal variable in specification 2 on local board schools, this variable reflects more of an income effect in specification 4 on unaided schools. But, the magnitude of the coefficient is not particularly large—a 10% increase in the mean value of land taxes increases the average number of unaided schools by 2.24%. In comparison, a 10% increase in the mean value of CRFI decreases the average number of unaided schools by 42%.

Overall, the findings on primary schools emphasize that greater caste and religious diversity negatively affected the provision of aided and unaided schools, but the more centralized provincial government schools were unaffected by local factors. Specification 5 on all state supported schools (provincial government, local board and aided) also highlights the negative relationship between the provision of schools and CRFI. However, the level of diversity is not relevant for the provision of secondary schools, where fraction Brahman emerges as the most significant explanatory variable. Table 8 present results on public secondary schools, which also include middle English and middle vernacular schools. Besides aided secondary schools, the number of provincial government, local board, and unaided schools are positively correlated with fraction Brahman, which suggests that secondary schools were created in areas of adequate private demand as per official policy. The effects of fraction Brahman are largest for provincial government schools and smallest for local fund schools—a one standard deviation increase in fraction Brahman almost doubles the average number of provincial government

to their traditional occupations of tanning leather, cleaning and working with dead animals. As a result, these groups suffered substantial discrimination and were often barred from entering public venues like temples and schools. See Ghurye (1961) for more details. In fact Srinivas (X) argues that the British system of public education increased the divide between the traditional higher caste elites and lower castes.

schools.[48]

The results on other variables are generally consistent with the aims of colonial policy. The 1883 Commission recommended that provincial governments establish secondary schools, either where there was adequate demand or where local resources were lacking specifically in areas heavily populated by lower castes, Muslims and aboriginal tribes. The positive coefficients on lower castes, Muslims and aboriginal tribes in specification 1 for provincial government schools supports official accounts that public schools were created in communities heavily populated by these groups. Unlike primary schools, there was no significant increase in the number of secondary schools from 1901 to 1911.

Given different local factors were important for the provision of primary versus secondary schools, table 9 presents specifications with the ratio of primary over secondary schools as the dependent variable. The interpretation of the ratios for provincial government and local fund school-types is complicated because there were relatively few local fund secondary schools and there were even fewer provincial government primary schools. Although the degree of fragmentation is not relevant for state supported schools, CRFI is extremely significant for the ratio of unaided primary over secondary schools. A 10% increase in the mean value of CRFI, decreases the mean ratio of primary to secondary unaided schools by almost 60%. Moreover, the ratio of total primary to total secondary schools is also negatively correlated with fraction Brahman. Overall, the findings on ratios indicate that there was an undue emphasis on secondary schooling both in districts with larger numbers of Brahmans and in districts with greater diversity. Clearly, elites preferred advanced primary classes in secondary schools versus basic primary schools of instruction. The negative coefficients on the ratios for total schools for Muslims and aboriginal tribes reflect the disproportionate number of provincial government secondary schools, which were established as part of colonial policy to promote and increase schooling among these groups.

While the analysis on schools has highlighted the importance of local district character-

[48]The results are robust to alternate definitions of higher castes that include Brahmans and other higher castes.

istics on the provision of schooling, it is unclear whether the distribution of resources, public and private, was inefficient. The efficiency of resource allocation would depend on social rates of return to primary and secondary schooling. However, numerous scholars have noted the importance of primary schooling to economic growth and development. Schultz (1983) makes a theoretical argument in favor of primary schooling in low income agricultural countries, where he argues that the benefits of basic literacy are substantial because they allow for greater agricultural growth. In particular, he cites historical evidence that for certain types of crops (e.g. rice and corn) more literate farmers were quicker to adopt new varieties of seeds, implement more modern methods of production and engage in greater information sharing. Drèze and Sen (1998) among others have also emphasized the critical role of literacy to greater economic development in post-independence India.

Moreover, estimates of social rates of return in post-independence India are much higher for primary schooling relative to secondary schooling.[49] While data limitations prevent similar calculations for the colonial period, social rates of return to primary schooling were probably even higher in the colonial period given the low level of literacy. Anecdotal evidence suggests that private returns to secondary schooling might have been declining over the early 20^{th} century because of high unemployment among the college educated youth.[50] Thus, the undue private emphasis on secondary schools at the local level might have been detrimental for economic development in the colonial period.

Table 10 reports additional specifications with 1911 literacy rates as the dependent variable and 1901 number of schools per 1000 children of ages 5 to 15 as the independent variable plus the standard set of district controls. Due to concerns of reverse causality, I did not use contemporaneous number of schools. As is evident, the number of public primary schools in 1901 are positively associated with literacy rates in 1911—a one standard deviation increase in the number of 1901 public primary schools increases the mean value of 1911 literacy by

[49]See Gounden (1967), Psacharopoulos (1973) and Self and Grabowski (2004).

[50]British officials frequently referred to the high levels of unemployment among the college educated youth, which prompted Lord Curzon to enforce higher quality standards on secondary schooling in the hope that this would curb the spread of secondary education. See Basu (1974) for more details.

almost 11%. In comparison, 1901 public secondary schools are not significantly correlated with 1911 literacy rates. Overall, the results highlight that public primary school availability was strongly associated certain local factors, which hurt the provision of primary schooling. And, the lower number of public primary schools had strong implications for subsequent literacy rates.

6 Conclusion

This paper studies the provision of schooling in British India when education was under the direct authority of the British Crown. The analysis combines qualitative data from various official reports and commissions with previously under-utilized quantitative data from the Quinquennial Reviews of Education, Indian district gazetteers and colonial censuses. Although colonial policy made numerous recommendations to develop mass primary schooling, public human capital expenditures in British India lagged behind other colonies in the Dependent British Empire and the Princely States. Human capital expenditures in British India averaged 0.01 pounds per capita from 1860 to 1912 and represented a mere 4% of the total budget over these decades. Moreover, public expenditures on primary schools averaged 34.3% even though literacy was as low as 7% in 1911.

In addition to colonial policy, several local factors were critical to the provision of primary and secondary schools. Using a new historical data-set of 82 Indian districts in 1901 and 1911, the econometric analysis showed that caste and religious fragmentation was negatively correlated with public primary schools, in particular aided and unaided schools. Additional specifications with the ratio of primary over secondary unaided schools indicated that there was an undue private emphasis on secondary education. Finally, the analysis on literacy showed that the availability of public primary schools in 1901 was positively correlated with 1911 literacy rates. Taken together, the findings highlight the tradeoffs of decentralized provision of public goods like primary schooling in the presence of numerous and unequal groups.

Since private efforts determined the number of schools, elites who frequently established schools disregarded the spill-overs of providing mass primary schooling to the population. Although colonial policy recognized the need to improve the low levels of schooling, official efforts were limited to establishing a few schools in areas heavily populated by groups with below average literacy like the lower castes and aboriginal tribes. However, these attempts failed to significantly increase literacy among these groups or in the overall population.

The provision of schooling, specifically at the primary level, is often viewed as a public good because of the positive externalities associated with an educated populace to any community or state. However it is unclear whether it was in the interests of the British Crown to develop a system of mass elementary schooling in British India. This was not a democracy that could benefit from an educated electorate. In fact, an educated populace was only more likely to demand self-government and threaten the stability of colonial rule. Though colonial officers recognized certain social benefits of providing mass education, they were unwilling to bear the costs of public provision. Consequently, they turned to private Indian enterprise, which developed to meet the demands of a small elite population. Though Indian elites had some political voice under colonial rule, they were not elected representatives and until 1919 were relatively constrained in their ability to affect colonial education policy. Since they were unlikely to directly benefit from mass education, it was not in their interests either to develop or support a broad network of schools. Thus, the lack of a viable political constituency willing to support mass schooling severely hurt the development of mass primary education in British India.

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Figure 1: Schools by Management

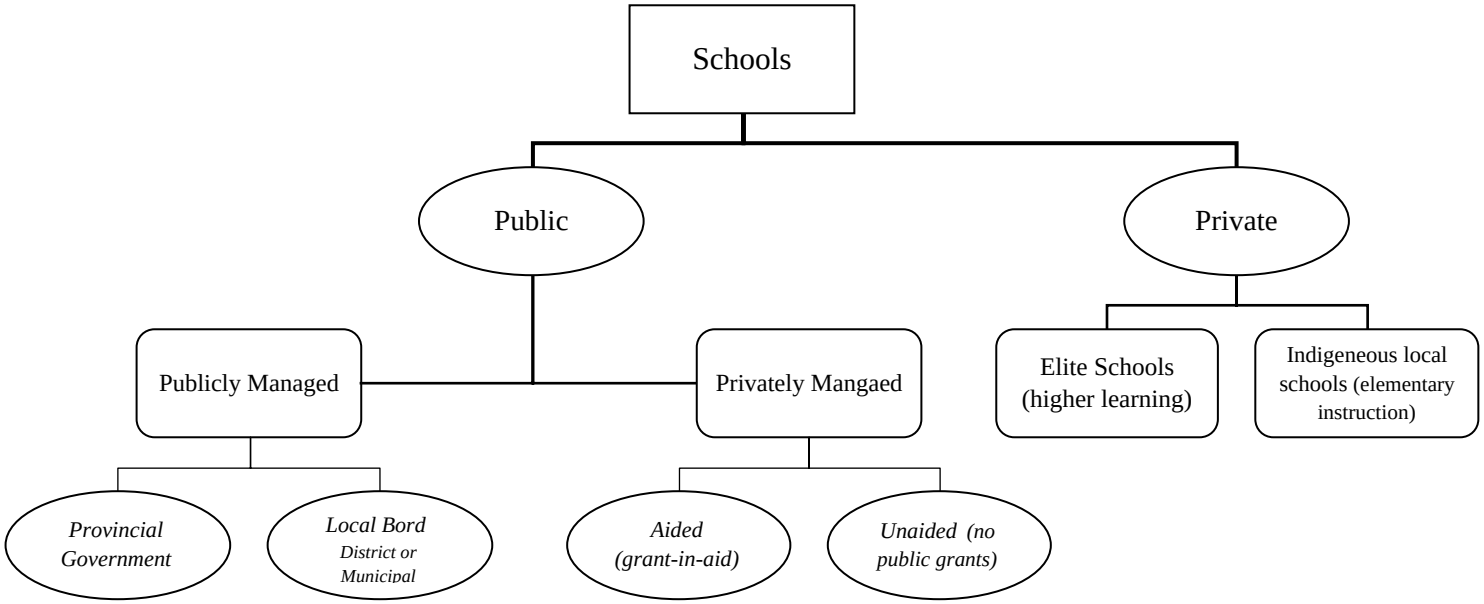

TABLE 1 - GOVERNMENT EXPENDITURES ON HUMAN CAPITAL

	£'s per Capita								Percentage of Expenditures							
	UKN	UKT	RG	DC	British India	Princely States	FD	FU	UKN	UKT	RG	DC	British India	Princely States	FD	FU
1860-64	0.05		0.31	0.18	0.00	0.01	0.04	0.02	2.3		14.5	16.7	1.2	6.4	4.5	4.0
1865-69	0.04	0.14	0.29	0.17	0.01	0.02	0.04	0.01	1.9	4.8	12.8	15.6	1.7	11.7	4.2	3.1
1870-74	0.05	0.29	0.34	0.16	0.01	0.03	0.04	0.02	2.8	10.4	12.6	16.2	2.7	10.8	4.3	2.7
1875-79	0.08	0.44	0.48	0.15	0.02	0.02	0.05	0.03	4.0	12.7	12.6	17.3	4.2	11.5	4.6	5.1
1880-84	0.12	0.53	0.60	0.16	0.01	0.02	0.06	0.06	4.9	13.3	12.9	16.2	2.6	9.1	5.1	5.7
1885-89	0.17	0.68	0.76	0.20	0.01	0.03	0.09	0.08	6.0	14.2	12.4	16.7	4.1	10.7	5.4	7.7
1890-94	0.23	0.80	0.66	0.23	0.01	0.02	0.10	0.06	8.0	15.8	11.4	15.9	4.2	10.5	5.9	7.7
1895-99	0.35	1.18	0.70	0.22	0.01	0.03	0.12	0.07	9.9	18.2	9.9	14.9	6.2	10.5	5.6	7.2
1900-04	0.37	1.41	0.82	0.19	0.02	0.03	0.13	0.05	7.6	16.0	12.1	13.2	7.6	10.9	5.9	6.8
1905-09	0.45	1.84	0.50	0.18	0.01	0.03	0.14	0.10	11.6	22.2	14.1	13.9	5.9	10.3	6.3	8.6
1910-12	0.66	2.02	0.56	0.19	0.01	0.04	0.18	0.10	16.1	23.6	15.1	14.1	5.9	11.0	7.1	8.3
Avg.	**0.22**	**0.89**	**0.55**	**0.18**	**0.01**	**0.02**	**0.09**	**0.05**	**6.5**	**14.8**	**12.7**	**15.6**	**4.1**	**10.3**	**5.3**	**6.0**

Source: Lance E. Davis and Robert A. Huttenback, *Mammon and the Pursuit of Empire: The Politcal Economy of British Imperialism* (Cambridge: Cambridge University Press, 1986) calculated from Table 4.5. Total expenditures do not include railways and data are unweighted averages for colonies and countries. Expenditures are at the national-level and so underestimate the extent of total government education spending in countries like the United States where states and local school districts contributed large sums toward education. However, the data on British colonies represent total expenditures incurred by the colonial government.

UKN: United Kingdom National (only national level of government)

UKT: United Kingdom Total (all levels of government)

RG: British Colonies w/ Responsible Governments (Australia, Canada, Newfoundland, Union of Africa)

DC: Dependent British Colonies (e.g Ceylon, Hong Kong, Gambia, Sierra Leone, Sudan, Antigua, Bahamas, etc.). For complete list of colonies see Davis and Huttenback, *Mammon* , appendix 1.1

Princely States: Ali-Rajpur, Baroda, Barwani, Cochin, Dhar, Hyderabad, Jamkhandi, Jhabua, Jobat, Kapurthala, Kolhapur, Manipur, Mysore, Pudukkottai, Rampur, Savantvadi, Teri, Travancore.

FD: Foreign Developed Countries (Austria, Belguim, Denmark, France, Germany, Italy, Netherlands, Norway, Portugal, Russia, Spain, Sweden, Switzerland, USA, Japan-post 1900)

FU: Foreign Underdeveloped Countries (Argentina, Brazil, Bulgaria, Colombia, Costa Rica, Ecuador, Egypt, El Salvador, Guatemala, Haiti, Honduras, Liberia, Mexico, Nicaragua, Paraguay, Peru, Romania, Santo Domingo, Serbia, Siam, Tunisia, Turkey, Uruguay, Venezuela, Japan-pre1900)

TABLE 2: POPULATION SHARE ENROLLED IN SCHOOLS

	1886-87	1891-92	1896-97	1901-02	1906-07	1911-12	1916-17
Total Public Schools							
National	**1.4%**	**1.4%**	**1.6%**	**1.6%**	**2.0%**	**2.4%**	**3.0%**
Madras		1.8%	2.0%	1.9%	2.3%	2.8%	3.7%
Bombay		2.1%	2.2%	2.2%	2.5%	3.1%	3.8%
Bengal		1.9%	2.1%	2.0%	2.3%	2.8%	3.3%
United Provinces		0.5%	0.6%	0.8%	1.1%	1.3%	1.7%
Punjab		0.7%	0.9%	0.9%	1.2%	1.6%	2.2%
Central Provinces & Berar		1.0%	1.3%	1.3%	1.8%	2.0%	2.5%
Public Primary							
National	**1.1%**	**1.2%**	**1.4%**	**1.3%**	**1.6%**	**2.0%**	**2.4%**
Madras		1.5%	1.7%	1.6%	1.9%	2.5%	3.3%
Bombay		1.9%	2.1%	2.0%	2.3%	2.8%	3.3%
Bengal		1.6%	1.8%	1.7%	2.0%	2.2%	2.6%
United Provinces		0.3%	0.5%	0.6%	0.9%	1.1%	1.5%
Punjab		0.5%	0.6%	0.6%	0.8%	1.0%	1.5%
Central Provinces & Berar		0.9%	1.1%	1.1%	1.4%	1.6%	2.1%
Public Secondary							
National	**0.196%**	**0.204%**	**0.230%**	**0.259%**	**0.296%**	**0.362%**	**0.486%**
Madras		0.203%	0.254%	0.271%	0.323%	0.266%	0.362%
Bombay		0.161%	0.134%	0.190%	0.228%	0.275%	0.358%
Bengal		0.277%	0.307%	0.327%	0.298%	0.374%	0.611%
United Provinces		0.115%	0.126%	0.148%	0.182%	0.206%	0.214%
Punjab		0.242%	0.293%	0.322%	0.332%	0.498%	0.626%
Central Provinces & Berar		0.180%	0.191%	0.216%	0.347%	0.354%	0.424%
Public Colleges							
National	**0.005%**	**0.007%**	**0.008%**	**0.010%**	**0.010%**	**0.014%**	**0.024%**
Madras		0.012%	0.012%	0.012%	0.015%	0.014%	0.023%
Bombay		0.007%	0.007%	0.012%	0.016%	0.018%	0.034%
Bengal		0.009%	0.011%	0.014%	0.014%	0.022%	0.032%
United Provinces		0.006%	0.005%	0.005%	0.008%	0.012%	0.015%
Punjab		0.004%	0.007%	0.009%	0.011%	0.018%	0.028%
Central Provinces & Berar		0.002%	0.002%	0.002%	0.002%	0.005%	0.010%

* These tables are prepared using data from the Quinquennical Reviews of Education (various years). Assam in 1906-07 & 1911-12 includes Eastern Bengal and Assam. Data are not shown individually for Assam, Burma, North West Frontier Province & Coorg. The data covers some native states of Bombay, Bengal, Central Provinces, & United Provinces upto 1911-12. The Native States represent only 5% of the population covered in the reviews.

TABLE 3: SCHOOLS PER 100,000 OF POPULATION

	1886-87	1891-92	1896-97	1901-02	1906-07	1911-12	1916-17
Total Public Schools							
National	**42.97**	**44.16**	**47.26**	**43.51**	**50.29**	**53.39**	**63.50**
Madras		55.57	60.92	54.41	60.85	62.43	75.69
Bombay		35.24	37.46	37.47	43.52	49.57	57.86
Bengal		73.87	76.17	67.53	75.59	83.52	91.24
United Provinces		10.83	14.66	16.27	23.22	23.60	27.57
Punjab		11.28	15.07	14.77	20.04	22.49	32.91
Central Provinces & Berar		20.34	24.49	24.24	25.05	25.42	32.36
Public Primary							
National	**40.65**	**41.77**	**44.70**	**40.70**	**46.81**	**48.39**	**58.27**
Madras		52.92	58.35	52.01	58.30	60.86	73.84
Bombay		33.49	35.50	35.27	41.15	47.12	54.64
Bengal		70.19	72.36	63.35	70.62	71.73	83.00
United Provinces		9.59	13.41	14.93	21.62	21.65	24.83
Punjab		9.81	13.27	12.71	18.16	20.30	29.90
Central Provinces & Berar		18.39	22.64	22.15	21.79	22.46	28.84
Public Secondary							
National	**2.06**	**2.10**	**2.27**	**2.28**	**2.44**	**2.49**	**3.15**
Madras		2.28	2.10	1.92	2.03	1.06	1.08
Bombay		1.52	1.73	1.94	2.03	2.06	2.36
Bengal		3.24	3.47	3.27	2.90	2.96	4.05
United Provinces		1.05	1.07	1.12	1.22	1.35	1.62
Punjab		1.38	1.66	1.89	1.62	1.82	2.54
Central Provinces & Berar		1.79	1.74	1.94	3.09	2.83	3.28
Public Colleges							
National	**0.052**	**0.061**	**0.069**	**0.079**	**0.075**	**0.073**	**0.080**
Madras		0.112	0.121	0.120	0.110	0.085	0.116
Bombay		0.056	0.052	0.059	0.059	0.055	0.071
Bengal		0.066	0.077	0.085	0.093	0.084	0.078
United Provinces		0.049	0.062	0.082	0.080	0.100	0.066
Punjab		0.043	0.048	0.079	0.074	0.095	0.092
Central Provinces & Berar		0.032	0.032	0.034	0.045	0.038	0.050

* These tables are prepared using data from the Quinquennical Reviews of Education (various years). Assam in 1906-07 & 1911-12 includes Eastern Bengal and Assam. Data are not shown individually for Assam, Burma, North West Frontier Province & Coorg. The data covers some native states of Bombay, Bengal, Central Provinces, & United Provinces upto 1911-12. The Native States represent only 5% of the population covered in the reviews.

TABLE 4: LITERACY IN 1911

	Assam		Bengal Proper		Bihar & Orissa		Bombay[2]		Central Provinces		Madras[2]		United Provinces[2]	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Hindu (all)	12%	1%	21%	2%	8%	0.3%	12%	1%	6%	0.2%	14%	1%	6%	0.4%
Brahman [3]	***55%***	***5%***	***64%***	***11%***	***32%***	***2%***	***61%***	***9%***	***43%***	***3%***	***55%***	***11%***	***22%***	***1%***
Other Higher Castes [3,4]	9%	0.2%	48%	10%	32%	2%	31%	4%	42%	5%	31%	3%	22%	2%
Middle Castes [3,5]	19%	4%	23%	2%	6%	0%	11%	0%	10%	0%	11%	1%	3%	0%
Lower Castes[3]	5%	0.2%	6%	0.2%	1%	0.1%	2%	0.1%	2%	0.0%	2%	0.1%	0.5%	0.0%
Muslim	6%	0.2%	8%	0.2%	8%	1%	7%	1%	17%	1%	17%	1%	6%	1%
Aboriginal Tribes	1%	0.1%	1%	0.0%	1%	0.1%	.	.	0.4%	0.0%	0.4%	0.0%	.	.
Christian	25%	12%	52%	40%	14%	7%	41%	24%	30%	18%	23%	11%	35%	23%
Buddhist	11%	0%	17%	1%	13%	0%	.	.	75%	0%	75%	31%	17%	5%
Jain	73%	5%	77%	11%	66%	11%	53%	7%	48%	3%	46%	3%	47%	5%
Sikh	41%	6%	53%	8%	41%	2%	.	.	53%	5%	.	.	37%	7%
Total Population	**9%**	**1%**	**14%**	**1%**	**8%**	**0.4%**	**12%**	**1%**	**6%**	**0.3%**	**14%**	**1%**	**6%**	**0.5%**

1 - The rates are based on data from provincial volumes of the Census of India, 1911. Religious literacy rates for Assam, Bengal, Bihar & Orissa and Central Provinces (plus Berar) include native states. I compiled provincial literacy rates for just the British territories in these provinces from the Statistical Abstracts of India and the rates were essentially the same as those obtained from the censuses.

2 - Bombay includes British Districts plus Sind and Aden. Madras and UP include only the British districts.

3 - The provincial volumes (except Madras) provide data for a sample of castes. The literacy rate for each caste group is an unweighted average across castes enumerated in the group. For some castes the literacy data are from certain regions of the province. This is particularly relevant for Assam, Bengal, Bihar & Orissa.

4 - Other higher castes do not include Brahmans and represent other castes of twice-born rank . In Assam the data on other higher castes reflects only the kshatriya caste.

5 - There is a lot of variation in literacy rates for middle castes across provinces because this group represents many castes that are further disaggregated into different groups like clean and inferior sudras, etc.

TABLE 5: SUMMARY STATISTICS

Variable	1901			1911		
	Obs	Mean	Std. Dev	Obs	Mean	Std. Dev
Census Variables[1,2]						
Fraction Brahman	82	3.8%	2.8%	83	3.8%	3.0%
Fraction Lower Castes	82	16.4%	9.0%	83	16.0%	8.2%
Fraction Muslim	82	21.0%	24.1%	83	20.4%	23.9%
Fraction Aboriginal Tribes	82	2.6%	8.8%	83	3.0%	9.0%
Fraction Christian	82	1.1%	2.0%	83	1.3%	2.3%
Caste and Religious Fragmentation (CRFI)	82	0.7193	0.1512	83	0.7283	0.1556
Income Tax per Capita	82	0.0480	0.0290	83	0.0488	0.0356
Land Tax per Capita	82	1.1351	0.8664	83	1.3541	1.2467
DenistyPop per Mile	82	442	270	83	447	276
Fraction Rural	82	91.6%	7.3%	83	91.5%	7.1%
Towns (*1000) per Capita	82	0.0056	0.0049	83	0.0057	0.0046
Fraction Agriculture	82	69%	9%	83	73%	9%
Fraction Industry	82	15%	5%	83	10%	5%
Fraction Commerce	82	1%	1%	83	7%	3%
Fraction Professions	82	2%	1%	83	2%	1%
District Gazetteer Variables[3,4]						
Per 1000 children of ages 5 to 15						
Total Schools and Colleges	82	2.69	1.46	83	3.25	1.36
Public Schools and Colleges	82	2.23	1.30	83	2.89	1.24
Private Schools	82	0.45	0.49	83	0.35	0.38
Total Primary Schools	81	2.44	1.34	83	2.90	1.25
Public Primary Schools	81	2.14	1.24	83	2.66	1.13
Private Elementary Schools	82	0.30	0.39	83	0.24	0.33
Public Primary Provincial Govt. Schools	81	0.007	0.023	83	0.018	0.030
Public Primary Local Board Schools	81	0.297	0.526	83	0.651	0.855
Public Primary Aided Schools	81	1.334	1.007	83	1.581	1.035
Public Primary Unaided Schools	81	0.489	0.599	83	0.409	0.564
Public Primary State Schools	81	1.638	0.838	83	2.250	0.826

Sources: Census of India (1901 and 1911) and Imperial District Gazetteer Series.

[1] Sample includes districts in Bengal, Bihar and Orissa, Bombay and Madras. The pure urban centers of Bombay, Calcutta and Madras are excluded along with the smaller hill districts of Angul (Bengal) Chittagong Hill Tracts (Bengal), Darjeeling (Bengal), and Nilgiris (Madras).

[2] Data on the smaller hill districts are generally incomplete in the district gazetteers.

[3] District gazetteer data are missing for Faridpur (Bengal) and Ganjam (Madras) in 1911. Data for public primary schooling is missing for Godovari (Madras) in 1901.

[4] All population variables are coded as fractions from 0 to 1 in the data.

TABLE 6: Dependent Variable - Schools per School Age Population (Ages 5 -15)

	Total Schools and Colleges			**Primary Schools**		
	Total	Public	Private	Total	Public	Private
	(1)	(2)	(3)	(1)	(2)	(3)
Social Groups						
Fraction Brahman	-4.0475	-0.7457	-3.3035	-2.7905	-1.0802	-1.7771
	(5.3376)	(5.3664)	(1.3746)**	(5.2859)	(5.1480)	(1.4584)
Fraction Lower Castes	0.1078	0.1030	0.0051	0.9184	0.2900	0.5972
	(1.9459)	(2.1213)	(0.5408)	(2.1314)	(2.1742)	(0.4358)
Fraction Muslim	-4.8712	-4.8549	-0.0166	-4.9338	-4.6214	-0.3241
	(1.4510)***	(1.6233)***	(0.4455)	(1.6396)***	(1.6856)***	(0.3975)
Fraction Tribes	-2.7500	-1.9072	-0.8428	-2.2904	-1.7062	-0.6056
	(1.2256)**	(1.2750)	(0.4430)*	(1.2793)*	(1.2823)	(0.3833)
Fraction Christian	-0.6007	-0.0888	-0.5118	-0.8761	-0.8783	0.0805
	(5.2225)	(4.5372)	(1.4871)	(5.3666)	(4.6126)	(1.4171)
CRFI	-4.7319	-4.3477	-0.3846	-5.3956	-4.5897	-0.8035
	(1.3551)***	(1.4614)***	(0.6350)	(1.3090)***	(1.3979)***	(0.7022)
Income						
Income Tax Capita	-0.6967	-0.5113	-0.1851	-0.0944	-0.6457	0.5786
	(3.9395)	(3.7113)	(1.1459)	(3.9340)	(3.6143)	(0.9164)
Land Tax Capita	0.3762	0.3448	0.0314	0.3698	0.3543	0.0147
	(0.1441)***	(0.1284)***	(0.0294)	(0.1491)**	(0.1305)***	(0.0262)
Development Variables						
DensityPop per Mile	-0.0004	-0.0005	0.0001	-0.0005	-0.0004	-0.0000
	(0.0005)	(0.0005)	(0.0002)	(0.0005)	(0.0005)	(0.0002)
Fraction Rural	-4.2169	-4.4359	0.2205	-4.9743	-4.4845	-0.4745
	(3.0702)	(2.9509)	(1.1750)	(2.8499)*	(2.8114)	(0.7989)
Towns per Capita	4.4946	-3.1088	7.6187	1.9461	-5.5290	7.7495
	(36.4634)	(35.1828)	(11.5367)	(34.6818)	(33.3525)	(10.5835)
Occupation Variables						
Fraction Agriculture	4.5285	4.2283	0.3009	4.1999	3.4644	0.7559
	(1.9294)**	(1.8657)**	(0.7498)	(1.9128)**	(1.8290)*	(0.5719)
Fraction Industry	3.5147	5.8088	-2.2921	3.6471	4.4590	-0.8038
	(3.3420)	(2.9668)*	(1.8497)	(3.1028)	(2.8959)	(1.2210)
Fraction Commerce	1.1758	0.8293	0.3443	-2.2144	-1.6377	-0.5359
	(3.4089)	(3.2523)	(1.4829)	(3.2125)	(3.2086)	(0.9180)
Fraction Profession	88.4429	43.9041	44.5410	66.5152	38.7693	28.0271
	(16.0750)***	(16.4071)***	(8.5047)***	(15.7376)***	(15.7695)**	(9.5413)***
Dummy for 1911	0.5490	0.7230	-0.1738	0.6351	0.6826	-0.0469
	(0.2168)**	(0.2040)***	(0.0861)**	(0.2084)***	(0.2113)***	(0.0663)
Constant	5.8363	5.8725	-0.0382	7.1923	6.7425	0.4238
	(3.5930)	(3.4171)*	(1.7762)	(3.2664)**	(3.2627)**	(1.1184)
Observations	165	165	165	164	164	165
R-squared	0.64	0.61	0.54	0.63	0.58	0.55

Robust standard errors clustered at the district-level in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

All specifications include province fixed effects and the dependent variable is defined as (Schools*1000)/ School Age Population

TABLE 7: Dependent Variable - Primary Schools per School Age Population (Ages 5 -15)

	Provincial Government	Local Board	Aided	Unaided	State Supported	Total
	(1)	(2)	(3)	(4)	(5)	(6)
Social Groups						
Fraction Brahman	0.1273	2.5971	-4.7017	-0.1576	-1.9773	-2.1416
	(0.0958)	(1.7322)	(2.7561)*	(2.8512)	(3.1466)	(5.1139)
Fraction Lower Castes	-0.0551	0.6965	-0.4422	0.6199	0.1992	0.8195
	(0.0334)	(0.4518)	(1.4313)	(0.6237)	(1.6505)	(2.0809)
Fraction Muslim	-0.0335	1.0668	-4.0063	-1.5378	-2.9730	-4.5113
	(0.0225)	(0.4868)**	(1.0394)***	(0.4794)***	(1.2915)**	(1.6124)***
Fraction Tribes	0.0273	1.1238	-1.5597	-1.2160	-0.4086	-1.6252
	(0.0326)	(0.6088)*	(0.7334)**	(0.4247)***	(1.0506)	(1.2667)
Fraction Christian	-0.3527	-1.5514	2.8035	-0.7568	0.8995	0.1502
	(0.1704)**	(1.5315)	(2.7627)	(2.4140)	(3.0327)	(4.5526)
CRFI	-0.0390	0.4434	-2.1863	-2.6306	-1.7819	-4.4128
	(0.0240)	(0.3288)	(0.5831)***	(0.8822)***	(0.7416)**	(1.4284)***
Income						
Income Tax Capita	0.0883	2.0467	-1.4645	-1.3365	0.6704	-0.6677
	(0.1112)	(1.7551)	(1.9788)	(1.2969)	(2.9084)	(3.6342)
Land Tax Capita	0.0047	0.2006	0.0413	0.0808	0.2466	0.3275
	(0.0054)	(0.0592)***	(0.0538)	(0.0378)**	(0.0986)**	(0.1289)**
Development Variables						
DensityPop per Mile	-0.0000	-0.0001	-0.0003	-0.0001	-0.0003	-0.0004
	(0.0000)	(0.0001)	(0.0003)	(0.0002)	(0.0003)	(0.0004)
Fraction Rural	-0.0746	0.1982	-0.5629	-2.2786	-0.4394	-2.7150
	(0.0710)	(1.1949)	(1.6872)	(1.4666)	(2.1526)	(3.0658)
Towns per Capita	-1.9886	-0.9685	16.9649	-2.6998	14.0079	11.3786
	(1.5247)	(15.8941)	(19.6871)	(15.6406)	(26.3121)	(35.8857)
Occupation Variables						
Fraction Agriculture	0.0108	-0.1108	2.1638	1.6411	2.0638	3.7071
	(0.0345)	(0.6112)	(1.1945)*	(1.0113)	(1.3160)	(1.8050)**
Fraction Industry	0.0663	-0.7734	4.1343	1.8467	3.4273	5.2763
	(0.0612)	(1.5133)	(2.1679)*	(1.0691)*	(2.6607)	(2.9791)*
Fraction Commerce	0.2196	-1.3809	0.8201	-1.1368	-0.3412	-1.4828
	(0.1394)	(1.8111)	(2.1825)	(1.4478)	(2.8871)	(3.2144)
Fraction Profession	-0.7402	9.7424	29.8478	6.4359	38.8500	45.3190
	(0.3386)**	(6.6342)	(8.2703)***	(9.0966)	(11.0695)***	(17.0140)***
Dummy for 1911	-0.0009	0.3741	0.3465	0.0142	0.7197	0.7344
	(0.0062)	(0.1190)***	(0.1460)**	(0.0943)	(0.1882)***	(0.2047)***
Constant	0.1131	-0.9054	1.9545	3.2564	1.1622	4.4132
	(0.0653)*	(1.6150)	(2.2081)	(1.6321)**	(2.7667)	(3.6955)
Observations	164	164	164	164	164	164
R-squared	0.25	0.84	0.80	0.50	0.61	0.57

Robust standard errors clustered at the district-level in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

All specifications include province fixed effects and the dependent variable is defined as (Schools*1000)/ School Age Population

TABLE 8: Dependent Variable - Public Secondary Schools per School Age Population (Ages 5 -15)

	Provincial Government	Local Board	Aided	Unaided	State Supported	Total
Social Groups						
Fraction Brahman	0.0630	0.0886	0.1879	0.1687	0.3396	0.4915
	(0.0247)**	(0.0498)*	(0.2094)	(0.0581)***	(0.1699)**	(0.1825)***
Fraction Lower Castes	0.0184	-0.0154	0.1384	-0.0125	0.1415	0.1298
	(0.0070)***	(0.0142)	(0.0710)*	(0.0252)	(0.0664)**	(0.0797)
Fraction Muslim	0.0165	-0.0029	-0.0103	-0.0100	0.0034	-0.0078
	(0.0046)***	(0.0105)	(0.0431)	(0.0132)	(0.0395)	(0.0443)
Fraction Tribes	0.0607	-0.0125	0.0607	0.0311	0.1089	0.1383
	(0.0195)***	(0.0138)	(0.0429)	(0.0155)**	(0.0409)***	(0.0505)***
Fraction Christian	-0.1096	0.0075	0.2257	-0.0131	0.1237	0.1291
	(0.0422)**	(0.0627)	(0.1797)	(0.0515)	(0.1609)	(0.1894)
CRFI	0.0019	-0.0033	0.0198	0.0163	0.0184	0.0339
	(0.0039)	(0.0143)	(0.0411)	(0.0122)	(0.0406)	(0.0452)
Income						
Income Tax Capita	-0.0040	0.0181	-0.0018	0.1256	0.0122	0.1339
	(0.0202)	(0.0486)	(0.1358)	(0.0666)*	(0.1305)	(0.1715)
Land Tax Capita	0.0005	0.0021	-0.0008	0.0023	0.0017	0.0043
	(0.0006)	(0.0014)	(0.0036)	(0.0021)	(0.0033)	(0.0045)
Development Variables						
DensityPop per Mile	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)**	(0.0000)	(0.0000)*	(0.0000)	(0.0000)
Fraction Rural	-0.0233	-0.0076	-0.0273	0.0905	-0.0582	0.0398
	(0.0157)	(0.0378)	(0.1505)	(0.0590)	(0.1473)	(0.1788)
Towns per Capita	-0.2729	-0.0766	0.9566	0.1309	0.6070	0.9142
	(0.2002)	(0.4963)	(1.6727)	(0.6033)	(1.5967)	(1.8762)
Occupation Variables						
Fraction Agriculture	-0.0118	0.0087	-0.0101	0.0031	-0.0131	-0.0044
	(0.0082)	(0.0170)	(0.0882)	(0.0391)	(0.0852)	(0.1073)
Fraction Industry	-0.0328	0.0237	0.1998	0.1104	0.1907	0.3068
	(0.0166)**	(0.0324)	(0.1781)	(0.0534)**	(0.1822)	(0.2050)
Fraction Commerce	0.0538	0.0120	0.0359	0.0917	0.1017	0.1814
	(0.0210)**	(0.0408)	(0.1392)	(0.0735)	(0.1363)	(0.1418)
Fraction Profession	0.1025	0.0415	1.5981	0.0057	1.7421	1.8305
	(0.0790)	(0.1892)	(0.6706)**	(0.3093)	(0.6821)**	(0.8273)**
Dummy for 1911	-0.0024	-0.0001	0.0117	-0.0011	0.0092	0.0093
	(0.0013)*	(0.0026)	(0.0083)	(0.0042)	(0.0078)	(0.0089)
Constant	0.0272	0.0143	-0.0241	-0.1153	0.0174	-0.1115
	(0.0195)	(0.0418)	(0.2056)	(0.0607)*	(0.2083)	(0.2359)
Observations	164	164	164	164	164	164
R-squared	0.56	0.23	0.76	0.65	0.76	0.79

Robust standard errors clustered at the district-level in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

All specifications include province fixed effects and the dependent variable is defined as (Schools*1000)/ School Age Population

TABLE 9: Dependent Variable - Primary Schools / Secondary Schools

	Provincial Government	Local Board	Aided	Unaided	State Supported	Total
Social Groups						
Fraction Brahman	36.31	-227.58	39.89	-100.90	-65.77	-169.19
	(41.26)	(214.36)	(205.22)	(402.56)	(120.88)	(70.59)**
Fraction Lower Castes	-24.09	33.92	-56.35	166.36	-26.02	-14.61
	(11.82)**	(47.11)	(38.65)	(93.79)*	(26.37)	(20.39)
Fraction Muslim	-12.71	39.12	-14.42	-179.69	-22.87	-42.56
	(7.07)*	(37.24)	(32.79)	(79.92)**	(21.05)	(16.43)**
Fraction Tribes	-1.57	-4.68	-70.47	-232.96	-35.24	-55.71
	(13.75)	(85.99)	(52.47)	(91.01)**	(24.33)	(23.98)**
Fraction Christian	-89.29	210.43	-56.66	-154.93	-75.96	-82.84
	(81.81)	(275.23)	(202.28)	(383.80)	(118.03)	(121.90)
CRFI	-4.35	30.78	60.27	-462.65	10.93	-33.66
	(5.57)	(27.81)	(41.09)	(159.92)***	(25.31)	(17.88)*
Income						
Income Tax Capita	33.46	-517.62	-46.83	-236.82	-35.56	-74.40
	(27.62)	(228.83)**	(116.86)	(225.09)	(90.85)	(75.26)
Land Tax Capita	-0.29	-1.42	-1.05	1.59	0.83	2.33
	(0.80)	(4.02)	(2.85)	(6.20)	(1.77)	(1.88)
Development Variables						
DensityPop per Mile	-0.00	-0.03	0.01	-0.05	0.01	-0.01
	(0.00)	(0.02)	(0.03)	(0.03)	(0.02)	(0.01)
Fraction Rural	11.03	-68.79	0.65	-119.94	80.35	28.38
	(24.66)	(156.02)	(93.49)	(286.82)	(62.18)	(56.24)
Towns per Capita	-4.40	-4,025.07	-860.74	-1,596.25	218.52	234.38
	(216.24)	(2,677.81)	(848.93)	(2,890.51)	(941.65)	(792.49)
Occupation Variables						
Fraction Agriculture	2.95	-24.02	73.87	202.47	72.10	45.83
	(12.29)	(72.19)	(78.10)	(184.94)	(46.40)	(38.29)
Fraction Industry	7.21	-0.92	41.23	400.39	117.34	95.16
	(20.70)	(219.58)	(131.02)	(366.40)	(111.16)	(92.51)
Fraction Commerce	13.76	-304.16	-76.03	177.31	-99.62	-90.31
	(37.64)	(219.55)	(149.12)	(375.58)	(75.06)	(74.03)
Fraction Profession	-92.15	311.49	-202.29	-178.35	-163.64	-127.96
	(76.66)	(566.60)	(470.91)	(1,221.54)	(292.66)	(271.90)
Dummy for 1911	1.47	38.59	8.95	12.06	13.59	11.76
	(1.60)	(19.12)**	(9.95)	(23.82)	(5.61)**	(6.00)*
Constant	-3.72	304.28	-30.27	467.76	-91.56	26.56
	(17.73)	(164.45)*	(166.58)	(428.86)	(108.98)	(71.43)
Observations	143	146	160	136	163	163
R-squared	0.15	0.69	0.49	0.54	0.32	0.43

Robust standard errors clustered at the district-level in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

All specifications include province fixed effects and fraction ages 5 to 15.

TABLE 10: Dependent Variable - 1911 Literacy Rates

	(1)	(2)	(3)	(4)	(5)
Per 1000 children of 5 to 15					
1901 Total Schools	0.0042				
	(0.0015)***				
1901 Public Schools		0.0059			
		(0.0015)***			
1901 Private Schools			-0.0070		
			(0.0044)		
1901 Public Primary				0.0056	
				(0.0015)***	
1901 Public Sec					0.0423
					(0.0416)
Social Groups					
Fraction Brahman	0.1762	0.1712	0.1267	0.1757	0.1328
	(0.0696)**	(0.0664)**	(0.0716)*	(0.0676)**	(0.0810)
Fraction Lower Castes	0.0277	0.0340	0.0295	0.0372	0.0220
	(0.0298)	(0.0291)	(0.0305)	(0.0292)	(0.0321)
Fraction Muslim	0.0215	0.0323	0.0028	0.0298	-0.0001
	(0.0236)	(0.0232)	(0.0219)	(0.0236)	(0.0240)
Fraction Tribes	0.0384	0.0377	0.0235	0.0385	0.0250
	(0.0210)*	(0.0195)*	(0.0197)	(0.0197)*	(0.0218)
Fraction Christian	0.1511	0.1534	0.1450	0.1416	0.1246
	(0.0968)	(0.1000)	(0.1005)	(0.1024)	(0.0968)
CRFI	0.0245	0.0301	0.0005	0.0267	-0.0007
	(0.0204)	(0.0189)	(0.0162)	(0.0193)	(0.0186)
Income					
Income Tax Capita	0.1475	0.1536	0.1522	0.1547	0.1416
	(0.0776)*	(0.0746)**	(0.0770)*	(0.0745)**	(0.0810)*
Land Tax Capita	0.0022	0.0017	0.0024	0.0021	0.0035
	(0.0023)	(0.0021)	(0.0025)	(0.0023)	(0.0029)
Development Variables					
DensityPop per Mile	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Fraction Rural	-0.2572	-0.2406	-0.2672	-0.2408	-0.2806
	(0.0771)***	(0.0791)***	(0.0737)***	(0.0791)***	(0.0732)***
Towns per Capita	-1.7003	-1.6303	-1.6779	-1.6339	-1.8944
	(0.8991)*	(0.9056)*	(0.8667)*	(0.8974)*	(0.8807)**
Occupation Variables	Yes	Yes	Yes	Yes	Yes
Constant	0.2101	0.1889	0.2266	0.1942	0.2506
	(0.1123)*	(0.1127)*	(0.1098)**	(0.1132)*	(0.1101)**
Observations	83	83	83	82	82
R-squared	0.84	0.85	0.83	0.85	0.8

Robust standard errors clustered at the district-level in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

All specifications include province fixed effects.