Determinants of Primary Schooling in British India

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Abstract

This paper explores the provision of schooling in colonial India when British administrators dictated education policy. Although public and private funds were used to expand and improve the public education system, there were fewer than 3 primary schools for every 10 villages as late as 1911. To explore the impact of the funding system on the provision of schools, I empirically analyze the links between local factors and schooling using a new historical dataset. I find that districts with higher levels of caste and religious diversity had fewer privately managed primary schools and fewer total primary schools. Heterogeneous preferences across groups, unequal political power in more diverse districts and low demand for education by lower castes are all potential explanations for this pattern. Broadly, the results highlight the challenges involved in the provision of primary education in the presence of numerous and perhaps unequal groups.

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1 Introduction

In the 19^{th} century, the East India Company and later the British Crown introduced a new state system of education in British India.[1] Beginning in 1858 the Crown controlled education policy until 1919 when education was transferred to the control of Indian ministers at the province-level.[2] Over this period, numerous acts were passed, various recommendations were made and both public and private funds were used to expand and improve the public education system. However, the new system was unable to achieve mass literacy—there were fewer than 3 primary schools for every 10 villages and less than 10% of the population was able to read and write by 1911.

Although historians have put forward several explanations for British India's limited achievement in basic primary education, they have largely been qualitative studies and there has been limited quantitative research on this topic.[3] This paper fills the void by empirically exploring the links between local district characteristics and the provision of schools, particularly primary schools, in 1901 and 1911 when the Crown directly controlled education policy. For this purpose, I have constructed a new historical district-level dataset from district gazetteers and colonial censuses to analyze the effects of various economic and social factors on the provision of schools.

A better understanding of the determinants of schooling in colonial India is extremely important for three reasons. First, British India's poor schooling and literacy record has strong

[1] British India refers to approximately two-thirds of the Indian sub-continent that was under direct colonial control. The remaining one-third of the territories were under the rule of various native kings who deferred to the British with regard to defense and foreign policy, but had the autonomy to manage their local affairs including education. These territories were referred to as 'Native States' or 'Princely States'.

[2] 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 with the Government of India Act of 1858 and controlled policy via the India Office in London and the Government of India. The Crown handed over provision of education to Indian ministers at the province-level with the Government of India Act of 1919.

[3] Some of the traditional explanations emphasize the role of colonial policy, the undue public and private emphasis on secondary education as compared to primary education, limited public funds, and low demand for education. Despite the importance of the topic, the literature on education in British India is relatively modest. Nurullah and Naik (1951) offer the most detailed history of education in the colonial period. See also Basu (1974), Basu (1982) and Ghosh (2000). Whitehead (2005) discusses the historiography of research on colonial Indian education, provides an overview of the literature to date and emphasizes the need for more empirical research.

implications for India's growth path in the colonial and post-independence era. Theodore Schultz has written extensively on the importance of primary education to economic growth, specifically for a traditional agricultural economy, and suggests that more literate farmers are quicker to adopt superior inputs, engage in greater information sharing and thereby increase agricultural production.[4] Drèze and Sen (1998) also emphasize the substantially high social returns to primary education in India because greater literacy promotes public discourse, increases accountability of elected leaders and generally improves democratic governance.[5] Second, this is a particularly interesting setting given the high degree of diversity in Indian society that has significant consequences for public and private provision of schools. Indian society was divided along both caste and religious lines, and in addition there was also substantial inequality between castes whereby higher castes, at least in this period, enjoyed far greater economic and educational standing as compared to lower castes. Third, stronger insight of the historical circumstances can potentially guide current educational policies as India strives to achieve universal literacy.

Although British India was among the largest colonies of the British Empire, public investments on human capital were among the lowest in the world and lagged behind other colonies of the British Empire and even the Indian Princely States that were not under direct colonial authority. Moreover, less than 40% of public education expenditures were targeted to primary education. Due to the low level of public funding, private revenues became critical for the development of schooling and local district characteristics such as population shares of different social groups, the level of diversity and income strongly influenced private provision. The main empirical results in this paper show that districts with higher levels of caste and religious diversity (as measured by a Herfindahl index) had fewer total primary

[4]See Schultz (1962), Schultz (1963), Schultz (1971) and Schultz (1983). More generally, education has been linked to greater worker productivity and a faster ability to adopt new and existing technology. See Becker (1964), Mincer (1974), Easterlin (1981), Romer (1990) and Benhabib and Spiegel (1994) among others who have emphasized the importance of education as human capital.

[5]They also suggest that primary education has the potential to reduce long standing gender and caste inequities in India because it affords socially disadvantaged groups the "ability to resist oppression, to organize politically and to get a fairer deal."

schools and fewer privately managed primary schools controlling for other economic and social factors. One potential explanation of this finding relates to heterogeneous preferences across groups, which perhaps increased coordination costs of mobilizing private resources for primary schooling. Another mutually nonexclusive explanation relates to unequal political power of elites that might have affected the availability of public funds that were still an important funding source for certain privately managed schools. Chaudhary (2007) explores public provision of local services by rural district boards that were heavily dominated by upper caste board members and finds that elites had stronger preferences for public investments on local infrastructure relative to primary schooling.[6] Although these interpretations emphasize supply-side constraints, low demand for education by lower castes can also account for fewer primary schools in more diverse areas given the strong reliance on private funding.

Another interesting result is that the level of diversity is negatively correlated with the ratio of primary to secondary schools that were privately funded and managed. This suggests that there was an undue private emphasis on secondary schooling. This is also supported by the finding that the upper caste Brahman population share is positively correlated with secondary schools but uncorrelated with primary schools. The empirical analysis also reveals other important patterns. Demand side variables like the fraction of professionals are positively associated with both primary and secondary schools, while land tax revenues are an important fiscal variable for publicly managed primary schools. Finally, the number of primary schools are highly correlated with subsequent literacy.

The rest of the paper is organized as follows: section 2 briefly describes the institutional history and discusses enrollment, expenditure and literacy patterns. This brief overview suggests that colonial policy created an important role for private funding in the development of the public school system. Section 3 lays out a theoretical framework to explore how local factors affected the supply of district-level public schools. This section emphasizes that

[6]The political strength of elites, in that particular context, was strongly related to their economic status as landowners, which might have affected their preferences for local infrastructure over primary schooling.

Indian social structure was critical 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. The empirical results are discussed in section 5 and section 6 concludes.

2 Institutional History

2.1 Colonial Policies

Over the course of the 19^{th} century, the indigenous system of schooling in British India was replaced by the new state system of education developed by the East India Company till 1857 and controlled by the British Crown from 1858 to 1919. Under the former indigenous system, schools were of two types—elite religious schools geared toward 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.[7] Due to lack of official patronage from the Company, both elite schools and local indigenous schools declined over this period.

Wood's Education Despatch of 1854 was the first official document akin to a national education policy, which outlined the Company's role with regard to the provision of schooling in British India.[8] The Despatch created an elaborate machinery of provincial education departments 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"[9] in the English medium, the Company now empha-

[7]For more details see Nurullah and Naik (1951), chapter 1 and Basu (1982).

[8]The East India Company was generally indifferent to the provision of schooling until the early 19^{th} century when they set aside public funds for centers of classical learning and the promotion of western sciences in the English medium. Although no vigorous efforts were made to encourage local indigenous schools, the Company promoted English medium schools with the expectation that they would produce an elite group of educated Indians who could work in the colonial administrative offices. For more details see Sharp and Richey (1920).

[9]See Despatch to Government of India on the Subject of General Education in India (1854).

sized the importance of expanding vernacular primary schools for the rural masses.[10] 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 enterprize and consequently private funds became a significant force in the expansion of the public school system.

Beginning in the 1860's, a new system of schooling emerged, which incorporated schools managed by provincial governments and local boards (district and municipal) as well as privately managed schools known as aided and unaided schools. Figure 1 presents a breakdown of the different school-types. 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 this period, some were successfully converted into public aided schools and the rest were classified as private schools because they were often religious in nature and did not conform to education department standards.[12]

Over the second half of the 19^{th} century, there was a dramatic increase in the number of English medium aided and unaided secondary schools and colleges fueled by high private demand among educated elites.[13] The overall growth of secondary schools and colleges

[10]English was established as the official language of instruction in 1835 by Governor General Bentinck following Macaulay's infamous minute that strongly criticized Oriental languages and literature, while promoting the study of western sciences and philosophy in the English medium. See Ghosh (2000) for more details.

[11]Under this system, grants were available to schools that followed a secular curriculum (religious neutrality), were under private local management, and open to public inspection. Grants could be allocated to specific charges, for example teacher salaries or buildings. However, they could not cover all the operating expenditures of the institution 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 grant eligibility rules.

[12]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 to $89,005$ by 1882. See Government of India (1883-84), Indian Education Commission Report for more details.

[13]See Nurullah and Naik (1951), Basu (1974), and Ghosh (2000). For example, according to Basu (1974) the number of 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).

outpaced primary schools, and official reports highlighted the need to increase mass primary schooling.[14] 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 1882 Resolution of Local Self-Government, the provision of primary education was decentralized to rural and urban boards, and they were encouraged to increase the number of primary schools by either building new schools or by offering public grants to privately managed schools (indigenous schools or new private schools).[15] Numerous schemes were outlined to increase schooling along Muslims, aboriginal tribes, lower castes and women—groups with below average literacy.[16] However, officials enthusiastically supported primary school fees, which were an important source of revenues.

While 19^{th} century colonial policy 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.[17] Former policies of promoting aided secondary schools and colleges were abandoned in favor of promoting publicly managed government schools as role models for privately managed schools. The importance of mass primary schooling was emphasized yet again and larger revenues were allocated to increase primary schooling. However, the Government of India upheld its policy of levying fees, nominal in some cases, and rejected new schemes for introducing compulsory schooling laws until 1918.[18]

[14]See Education Commission Report (1883) and Government of India (1886-1922), Progress of Education in India: Quinquennial Reviews.

[15]There was tremendous provincial heterogeneity in school systems with certain provinces like Bombay developing a system of publicly managed board schools, while provinces like Bengal encouraged privately managed schools to apply for public grants.

[16]Larger public grants were made available to schools in "backward districts", scholarships were introduced to encourage schooling among these groups, and training schools for teachers were established.

[17]In the early 1900's, colonial officers began to view secondary schools and colleges as a breeding ground for political unrest against colonial rule and for rising nationalism among educated Indians. Consequently, numerous acts were passed both to increase efficiency and control over public institutions. Basu (1974) discusses at length the connection between the increase in secondary schooling and the rise of political consciousness among Indian elites, and the impact on subsequent state policy.

[18]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

Before the laws could be enacted in all provinces, education was transferred to the control of provincial governments with Indian ministers as part of the Montague-Chelmsford reforms of 1919. And, this marked the end of direct colonial responsibility toward education.

2.2 Quantitative Patterns

Although the British Crown created a new system of education, public investments on education were fairly low in British India as compared to other colonies and states. Table 1 presents comparative data on national human capital expenditures, which indicate that spending in British India was among the lowest in the world from 1860 to 1912.[19] Government expenditures per capita averaged less than 0.01 pounds in British India and were lower than average government spending in the Indian Princely States (0.02), in underdeveloped countries like Brazil and Mexico (0.05), and in other dependent British colonies (0.18). While spending in real terms increased across the world, government expenditures in British India remained stable at 0.01 pounds although human capital spending as a proportion of the total budget increased from 1.2% in 1860 to almost 6% in 1912. Education represented a smaller share of the total government budget in British India versus countries at comparable levels of development (for example, Indian Princely States and foreign underdeveloped countries (FU)) with perhaps similar rates of return to schooling. As compared to world standards, public expenditures in British India were relatively low.

In addition to low absolute levels, primary schools received a relatively small share of public education funds—expenditures on primary schools averaged only 34.3% of public education expenditures from 1891/92 to 1916/17.[20] In comparison, the United States allocated

on the grounds that there was no popular demand for such a measure.

[19]See Davis and Huttenback (1986), chapter 4 and appendix 4.1 for more details. Education is the dominant category of human capital expenditures, which also include spending on medicine, charity, relief, immigration and on occasion religion (as a matter of convenience when it was difficult to separate religious spending from education). For a small sample of countries and colonies, I double-checked reported public education expenditures against the human capital expenditures reported in Davis and Huttenback (1986) and they appear to follow the same pattern.

[20]The share was fairly stable over this period—it was 32% in 1891/92, went up to 42% in 1901/02 but came back down to 31% in 1911/12. See Progress of Education in India: Quinquennial Review (1917-22),

more than 90% of public education 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. The United Kingdom allocated 73% of public education funds to primary schooling in 1890, while Japan allocated 84% to primary schools.[21] Historians have suggested that private demand for secondary education worsened the case against primary schooling because Indian elites often lobbied the colonial government against higher spending on primary vernacular education.[22] Thus, private support was complicit in supporting lower public spending on primary education.

While private returns to secondary education may have been high during the 19^{th} century due to the availability of jobs as government clerks and inspectors, anecdotal evidence suggests that private returns were perhaps lower in the early 20^{th} century because of high levels of unemployment among college graduates.[23] Data limitations prevent a calculation of private or social rates of return to education in the colonial period, but estimates of private and social returns for the decades following Indian independence indicate that returns to primary education were generally higher than secondary and higher secondary education.[24] Given British India's low level of literacy and economic development, one would imagine that private and social returns to primary education were probably higher in the colonial period.[25] Moreover, theoretical arguments by Schultz (1983) and Drèze and Sen (1998) for the Indian context stress that social rates of return are highest for primary education. Thus, the relatively low public investments in primary education had important implications for economic growth and development in British India.

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[21]Calculations are based on Lindert (2004), Volume 2 (Appendix Tables C1 and C3).

[22]See Nurullah and Naik (1951), Basu (1974), Basu (1982), and Whitehead (2005). Mukhopadhyay (1984) provides various examples from Bengali newspapers and editorials that highlight how landed elites actively opposed the development of mass primary education.

[23]See Nurullah and Naik (1951) and Basu (1974) along with Quinquennial Reviews of the period.

[24]See Gounden (1967), Blaug, Layard, and Woodhall (1969) and Psacharopoulos (1973). Heyneman (1980) and Asaoka (2006) provide a summary of rates of return studies in India.

[25]Psacharopoulos (1973) has studied rates of return to education for a broad cross-section of countries and concludes that rates of return are generally higher in developing countries as compared to developed countries and returns are always highest for primary education.

Although the British Crown created a new public system of schooling, colonial policy was unsuccessful in substantially increasing enrollment or literacy. Table 2 shows the number of public institutions and enrollment rates from 1886 to 1917 by level of instruction—primary, secondary and collegiate. Secondary schools in this period refer to middle schools and high schools, both of which had attached primary classes that offered superior instruction relative to regular vernacular primary schools.[26] In some sense, secondary schools were an imperfect but higher quality substitute for vernacular primary schools. The national patterns suggest that although there was an increase in schools and pupils, only one out of every five children of school-age was enrolled as late as 1917 with substantial provincial heterogeneity. In fact, the number of primary schools and pupils enrolled therein actually declined from 1896/97 to 1901/02 before picking up in the early 20^{th} century when larger public revenues were specifically allocated to primary education.

The enrollment patterns are especially interesting when viewed against patterns in other countries. For example, in 1916/17 British 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).[27] Moreover, the differences are not entirely driven by differential demographic structures or enrollments in private schools. In 1900, the public primary school enrollment rate was 62.5% in France, 72% in the United Kingdom, 51% in Japan and a mere 4.7% in British India. Public secondary school enrollment was 1.1% in France, 0.7% in the United Kingdom, 1.3% in Japan and 0.9% in British India.[28]

[26]On average, less than 10% of total primary level pupils were enrolled in primary departments of secondary schools. For example, 8.9% and 9.5% of total primary level pupils were in secondary schools in 1907 and 1912 respectively. See Progress of Education in India: Quinquennial Review (1907-12).

[27]See Progress of Education in India: Quinquennial Review (1912-17). The differences persist even after accounting for primary students in secondary schools.

[28]See Lindert (2004), vol. 2 (Appendix A1 and A3). Data for India refers to enrollment in provincial government, local board and aided schools. The secondary sources are unclear whether the patterns for Japan include private schools. If we include unaided schools in the calculations for British India, the enrollment

Thus, secondary school enrollment in British India was comparable to other countries, but primary education was far below average.

Table 3 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 a 100 woman was literate, with the exception of Jains and Christians. Moreover, literacy varied tremendously between different caste and religious groups.[29] 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 were assisted by government grants. 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 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. Muslims who were the dominant religious minority (approximately 22% of the population in 1911) had higher literacy rates that the lower castes and aboriginal tribes, but they generally lagged behind upper caste Hindus.[30]

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rate would be 8.9% for primary schools and 1.7% for secondary schools.

[29]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 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. It is unclear 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.

[30]Colonial policy directed significant resources to increase Muslim enrollment in public schools and the

Low demand for primary education was one of the common explanations put forward by British administrators for the low level of basic education, but certain official policies worsened pre-existing conditions—public schools were encouraged to charge fees, which probably raised the opportunity cost for the rural agricultural population and less than half public education expenditures were targeted to primary schooling. Due to the limited availability of public funds, the new system of education relied heavily on private support and the empirical analysis suggests that local district characteristics such as the degree of caste and religious diversity negatively affected private provision of primary schools.

3 Theoretical Framework

The discussion from section 2 suggests that private revenues in conjunction with official policy played a significant role in the development of the public school system. Therefore, this section explores how various local factors might have influenced the district-level demand and supply of schools.[31]

The literacy patterns from table 3 indicate that there was substantial heterogeneity in the demand for education between different castes and religions perhaps due to varying rates of return and opportunity costs. Therefore, the population shares of high caste Brahmans, lower castes, Muslims, and aboriginal tribes were probably critical to the availability of different school-types. Given Brahmans had above average literacy and were the traditional educated caste, we would expect the Brahman population share to be positively correlated with the number of schools. Moreover, Brahmans might have preferred secondary schools with attached primary classes because they offered superior instruction relative to vernacular primary schools. If this was the case, we would expect Brahmans to be positively correlated only with secondary schools.

It is unclear a priori how population shares of disadvantaged groups like the lower castes

efforts were largely successful in bringing Muslim primary school enrollment on par with Hindus.

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

and aboriginal tribes were related to schools. Although they had extremely low literacy, missionaries were particularly active in promoting schools for them and colonial policy encouraged the development of schools in areas heavily populated by these groups. This suggests that schools managed and funded by provincial governments might be positively correlated with disadvantaged groups. Moreover, if missionaries relied on public grants, then lower castes and aboriginal tribes might also be positively associated with aided schools (privately managed schools that received grant-in-aids). Given Muslims preferred indigenous religious schools, we would expect their population share to be positively associated with private schools and negatively associated with public schools. However, provincial governments did establish schools specifically for Muslims and so their population share could be positively correlated with provincial government schools.

The emerging ethnic fragmentation literature suggests that social diversity might have negatively influenced the provision of education in British India because more ethnically diverse populations are less successful in providing local services such as schooling.[32] In the Indian context, heterogeneous preferences between different Hindu castes and religions could have raised the costs of mobilizing necessary resources to establish schools in more diverse districts. Moreover, the general inability of more heterogeneous districts to effectively work together might have disproportionately affected primary education because decentralized local boards managed the provision of primary schooling and Indian board members were in the position to influence public funding of aided schools.[33] To test the impact of diversity on public and private provision of schools, the empirical analysis includes a Herfindahl-based caste and religious fragmentation index as a measure of diversity.

Besides social structures, market economy and occupational composition were also important to the demand and supply of public schools. Districts with larger populations of doctors,

[32]See Alesina, Baqir, and Easterly (1999), Goldin and Katz (1999), Vigdor (2004), and Miguel and Gugerty (2005) among others.

[33]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.

teachers and lawyers (professionals) were more likely to promote and develop schools at all levels, while areas with larger agricultural populations might have placed 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, industry, commerce, and professional employment.

Finally, higher income probably raised public and private revenues available to construct and operate schools. Since there are no data on district income, 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. Thus, they were collected from a small share of the population and reflect the higher tail of the formal income distribution. In comparison, land tax revenues capture the British assessment of the land value of the district. They also represent an important fiscal constraint on primary schools because additional levies on land taxes were an important source of revenues for rural district boards. Hence, we would expect land taxes to be positively correlated with primary schools managed by local boards.

Given the tremendous heterogeneity across Indian provinces, the district-level analysis includes province fixed effects to capture time-invariant provincial characteristics including policies set at the national or province-level. While province fixed effects absorb the variation across provinces in schooling policies and outcomes, they also control for differences in geography, caste structures, design of local boards, and other unobservables across provinces. These factors are likely to be correlated with schools and would bias the coefficients on the independent variables. Thus, including province fixed effects reduces potential concerns of omitted variables and allows for 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 provide some statistics for the late 19^{th} century, they 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.[34] 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 provides statistical tables to complement the discussion in part A. Although the tables contain data on a 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. Second, enrollment and particularly expenditure data are generally incomplete and not reported at the same level of detail as number of schools.[35] Despite these limitations, the data on number of schools is fairly complete although in some instances detailed school data are unavailable for the 1901 and 1911 cross-sections. For these cases, the analysis uses the nearest available year of school data.[36] There was some provincial heterogeneity in the reporting of school levels over time and I aggregated schools into primary and secondary as per official classifications reported

[34]The district gazetteers are part of the Imperial Gazetteer of India, which the British undertook to gain a stronger understanding of the culture, economy and geography of the Indian sub-continent. See Chaudhuri (1964) for a detailed history of the gazetteers.

[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 suggest that enrollment data were not particularly accurate or reflective of average daily attendance. These concerns probably extend to the enrollment data in the gazetteers as well.

[36]Madras district gazetteers only report school variables for 1902/03 and 1912/13. Bengal and Bombay only report the detailed breakdown of schools by management type—provincial government, local board (district and municipal), aided and unaided—for 1901/02 and 1911/12.

in the Quinquennial Reviews.[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 data from the 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 as high and low based on local opinion. I used these tables to construct the population share of Brahmans and 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 caste and religious fragmentation index (CRFI), which is defined as $CRFI = 1 - \sum s_i^2$ where s_i is the population share of each caste or religious group.[42] Following Banerjee and Somanathan (2007), I re-

[37]Primary schools include upper-primary and lower-primary schools of Bengal, primary schools of Bombay, primary schools of Madras in 1902/03 and higher-elementary plus lower-elementary schools of Madras in 1912/13. Secondary schools include high schools, middle English schools and middle vernacular schools of Bengal and Bombay, and upper-secondary plus lower-secondary schools of Madras in 1902/03 and secondary schools of Madras in 1912/13. Given the provincial changes in reporting of school-levels from 1901 to 1911, I did robustness checks by interacting province dummies with a dummy for 1911 to control for changes that uniformly affected districts within the same province. The 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.

[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).

strict the caste data to Hindu castes with population shares greater than 1% of the province population in 1901 and 1911 respectively.[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 4 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]

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

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—

[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. 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, which introduces some measurement error in Y but is more likely to be random or classical measurement error that yields consistent estimates. Moreover, the results are unchanged for per-capita dependent variables, which are more accurately measured.

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 5 presents the first set of results. The first three columns have total schools, public schools—provincial government, local board (rural and urban), aided and unaided—and private indigenous 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 very important to 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 0.724 to 0.876), total schools decrease by 0.724—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 private indigenous schools, while Muslims are negatively correlated with total schools, especially public primary schools. These effects are also economically significant—if the Brahman population increases by one standard deviation (from a mean of 3.8% to 6.7%), average number of total private schools 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

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

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 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 taxes 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 were also more urban with higher population density. And, so fraction profession probably reflects some effects of greater development. Fraction profession is positively correlated with all types of 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 such as the degree of caste and religious diversity were important determinants of the provision of public primary schools. Given the heterogeneity of public school-types, it is difficult to interpret the findings on CRFI and isolate the specific underlying mechanisms. 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 category of state supported schools, which is the sum of provincial government, local board and aided schools. Table 6 presents results for each school type at the primary-level. There were very few provincial government primary schools and specification 1 suggests that local characteristics were not

critical to their supply. 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 local urban and rural 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 for board schools can be interpreted as a supply-side fiscal variable 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 significant effect of caste and religious diversity on private provision of primary schools. Two mutually nonexclusive explanations can account for the negative coefficient on CRFI in specification 3 for aided schools. One particular interpretation is related to the notion that greater diversity in the population might be associated with greater economic and political inequality, whereby elite groups enjoy disproportionate shares of economic resources and political influence. Under these conditions elites could actively work to reduce the number of aided schools if they have access to substitutes. In the Indian context, upper castes (particularly Brahmans) were unequally represented on local boards and had the political influence to reduce public grants in more heterogeneous districts either because they were more likely to use secondary schools or because they had stronger preferences for investments on other public services. For example,

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

Chaudhary (2007) explores the variation in public district board expenditures and finds that districts with larger Brahman populations, specifically those with landed interests, allocated higher expenditures to local infrastructure as compared to primary schooling. Anecdotal evidence also suggests that upper caste board members preferred secondary schools for their children.[47] Both scenarios suggest that upper caste elites could have reduced the number of public grants awarded in more diverse districts, which would lead to fewer aided schools.

An alternate explanation for the observed negative association is related to higher coordination costs in more diverse populations. Aided schools were partially funded through private resources because private individuals applied to local boards for public grants to 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. Moreover, Indian social structure perhaps worsened these problems because higher castes were more likely to establish schools when they were direct beneficiaries and so they undervalued the potential social benefits of providing broader primary education. In fact, caste norms prohibited lower castes from attending schools, especially those frequented by upper castes.[48] Given aided schools were funded through a mix of public and private revenues, the effects of diversity probably reflect a combination of unequal political influence and coordination problems.

With regard to privately managed unaided schools, the strong negative coefficient on CRFI is more indicative of coordination problems because these schools did not receive any public funds. While these interpretations of CRFI stress supply-side constraints, low demand

[47]The Report of the Royal Commission upon Decentralization in India (1908) often alludes 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."

[48]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 to their traditional occupations of tanning leather, cleaning human waste 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. In fact, Srinivas (1998) argues that the British system of public education increased the divide between traditional higher caste elites and lower castes.

for schooling among lower caste populations may have also contributed to fewer unaided and probably even aided schools in more diverse districts. British officials and contemporary historians alike have emphasized that lower caste populations had low demand for education because of poverty, discrimination and higher opportunity costs in terms of a child's time.[49] Although fraction lower castes is statistically insignificant, CRFI is positively correlated with fraction lower castes in many provinces, which suggests that low demand may partially account for the observed negative relationship.

While land taxes reflect 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 smaller than for local board schools—a 10% increase in the mean value of land taxes increases the average number of unaided schools by 2.24% as compared to just over 5% for board schools. Overall, the findings on primary schools emphasize that greater caste and religious diversity negatively affected the provision of privately managed aided and unaided schools, but the more centralized provincial government schools were largely unaffected by local district characteristics. Specification 5 on all state supported schools (provincial government, local board and aided) also highlights the negative relationship between primary schools and CRFI.

In contrast to primary schooling, the level of diversity is not relevant for secondary schools, where fraction Brahman emerges as the most significant explanatory variable. Table 7 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 all positively correlated with fraction Brahman, which suggests that secondary schools were created in areas of high private demand. 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 schools.

[49]See Nurullah and Naik (1951), Ghurye (1961) and Basu (1974) for more details on demand side issues surrounding problems of lower caste education.

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 support 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 8 presents specifications with the ratio of primary to 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. 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 vernacular primary schools. The negative coefficients on Muslims and aboriginal tribes for total schools 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.

The school analysis highlights the important relationships between local characteristics and the provision of schools, but it is unclear how strongly schools or other educational inputs were related to outputs like literacy in this period. Therefore, table 9 presents the

last set of results on 1911 literacy rates as the dependent variable. Along with the standard set of district controls, these specifications also include the number of schools per 1000 of school-age population. 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 just over 11%. In comparison, 1901 public secondary schools are not significantly correlated with 1911 literacy rates. Although the development controls were not particularly significant in the school regression, the rural population share is negatively correlated with literacy rates and fraction Brahman and profession are positively related to literacy as expected. Overall, the results highlight that public primary school availability was negatively associated with local factors such as the level of diversity and the lower number of primary schools had strong implications for subsequent literacy.

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 primary and secondary sources with previously under-utilized quantitative data from the 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 colonies in the dependent British Empire and the Indian 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. Expenditures on primary education averaged 34% of public education expenditures as compared to other countries where public investments in primary schooling exceeded at least half the education budget.

Using a new historical data-set of 82 Indian districts in 1901 and 1911, the econometric analysis shows that caste and religious fragmentation was negatively correlated with public primary schools, in particular aided and unaided schools. A variety of explanations can account for this pattern including heterogeneous preferences across different castes and religions, unequal political power and low demand for education by lower castes. They highlight the numerous challenges of providing primary education in the presence of numerous and unequal groups. Additional specifications indicate that there was an undue private emphasis on secondary education that was especially prevalent in areas with greater fragmentation and larger populations of high caste Brahmans. The final analysis on literacy shows that the availability of public primary schools in 1901 was positively correlated with literacy in 1911 although secondary schools were statistically uncorrelated with subsequent literacy.

The findings of this paper suggest that private interests interacted with colonial policy to promote private provision of secondary schools in areas heavily populated by Brahmans and local characteristics such as the level of caste and religious diversity negatively affected private provision of primary schools. Since private efforts determined the number of aided and unaided schools, elites who frequently established schools disregarded the spillovers of providing mass primary education. Although colonial policy recognized the need to improve the low levels of schooling, public efforts were limited to supporting a few schools in areas heavily populated by groups with below average literacy like the lower castes and aboriginal tribes. However, these attempts were largely unsuccessful in increasing literacy within these disadvantaged groups or within the overall population.

References

Alesina, A., R. Baqir, and W. Easterly (1999): "Public Goods and Ethnic Divisions," *Quarterly Journal of Economics*, 114(4), 1243–1284.

Asaoka, H. (2006): *Investing in Education in India: Inferences from an Analysis of the Rates of Return to Education across Indian States*. Ph.D. diss., Stanford University.

Banerjee, A., and R. Somanathan (2007): "The Political Economy of Public Goods: Some Evidence from India," *Journal of Development Economics*, 82(2), 287–314.

Basu, A. (1974): *The Growth of Education and Political Development in India 1898-1920*. Oxford University Press, New Delhi.

——— (1982): *Essays in the History of Indian Education*. Concept Publishing, New Delhi.

Becker, G. S. (1964): *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. National Bureau of Economic Research, Second Edition, New York.

Benhabib, J., and M. M. Spiegel (1994): "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data," *Journal of Monetary Economics*, 34(2), 143–174.

Blaug, M., P. R. G. Layard, and M. Woodhall (1969): *The Causes of Graduate Unemployment in India*. Allen Lane, The Penguin Press, London.

Chaudhary, L. (2007): "Social Divisions and Public Goods Provision: Evidence from Colonial India," Mimeo, Hoover Institution.

Chaudhuri, S. B. (1964): *History of The Gazetteers of India*. Ministry of Education, Government of India, New Delhi.

Davis, L. E., and R. A. Huttenback (1986): *Mammon and the Pursuit of Empire : The Political Economy of British Imperialism, 1860-1912*. Cambridge University Press, New York.

Drèze, J., and A. Sen (1998): *India: Economic Development and Social Opportunity*. Clarendon, Oxford.

Easterlin, R. A. (1981): "Why Isn't the Whole World Developed?," *Journal of Economic History*, 41(1), 1–19.

Ghosh, S. C. (2000): *The History of Education in Modern India 1757-1998*. Orient Longman, New Delhi.

Ghurye, G. S. (1961): *Caste, Class and Occupation*. Bhatkal Publishers, Bombay.

Goldin, C., and L. Katz (1999): "Human Capital and Social Capital: The Rise of Secondary Schooling in America, 1910 to 1940," *Journal of Interdisciplinary History*, 29, 683–723.

Gounden, A. N. (1967): "Investment in Education in India," *Journal of Human Resources*, 2(3), 347–358.

Government of India (1883-84): *Indian Education Commission, Report and Appendices*. Calcutta.

——— (1886-1922): *Progress of Education in India: Quinquennial Reviews*. Volumes 1886/87-1891/92, 1892/93-1896/97, 1897/98-1901/02, 1902-1907, 1907-1912, 1912-1917 and 1917-22.

——— (1901–1911): *Census of India*. Reports and Statistical Tables.

Heyneman, S. (1980): "Investment in Indian Education: Uneconomic?," *World Development*, 8(2), 145–163.

LINDERT, P. (2004): *Growing Public: Social Spending and Economic Growth since the Eighteenth Century*. Cambridge University Press, Cambridge.

MIGUEL, E., AND M. K. GUGERTY (2005): "Ethnic Diversity, Social Sanctions, and Public Goods in Kenya," *Journal of Public Economics*, 89(11–12), 2325–2368.

MINCER, J. (1974): *Schooling, Experience and Earnings*. Columbia University Press for NBER, New York.

MUKHOPADHYAY, G. (1984): *Mass Education in Bengal (1882-1914)*. National Publishers, Calcutta.

NURULLAH, S., AND J. NAIK (1951): *A History of Educaiton in India (During the British Period)*. Macmillan, London.

PSACHAROPOULOS, G. (1973): *Returns to Education - An International Comparison*. Elsevier, San Francisco.

ROMER, P. (1990): "Endogeneous Technological Change," *Journal of Political Economy*, 98(5), Part 2: 71–102.

SCHULTZ, T. W. (1962): "Reflections on Investment in Man," *Journal of Political Economy*, 70(5), 1–8.

——— (1963): *The Economic Value of Education*. Columbia University Press, New York.

——— (1971): *Investment in Human Capital*. Free Press and Macmillan, New York.

——— (1983): *Transforming Traditional Agriculture*. University of Chicago Press, Chicago.

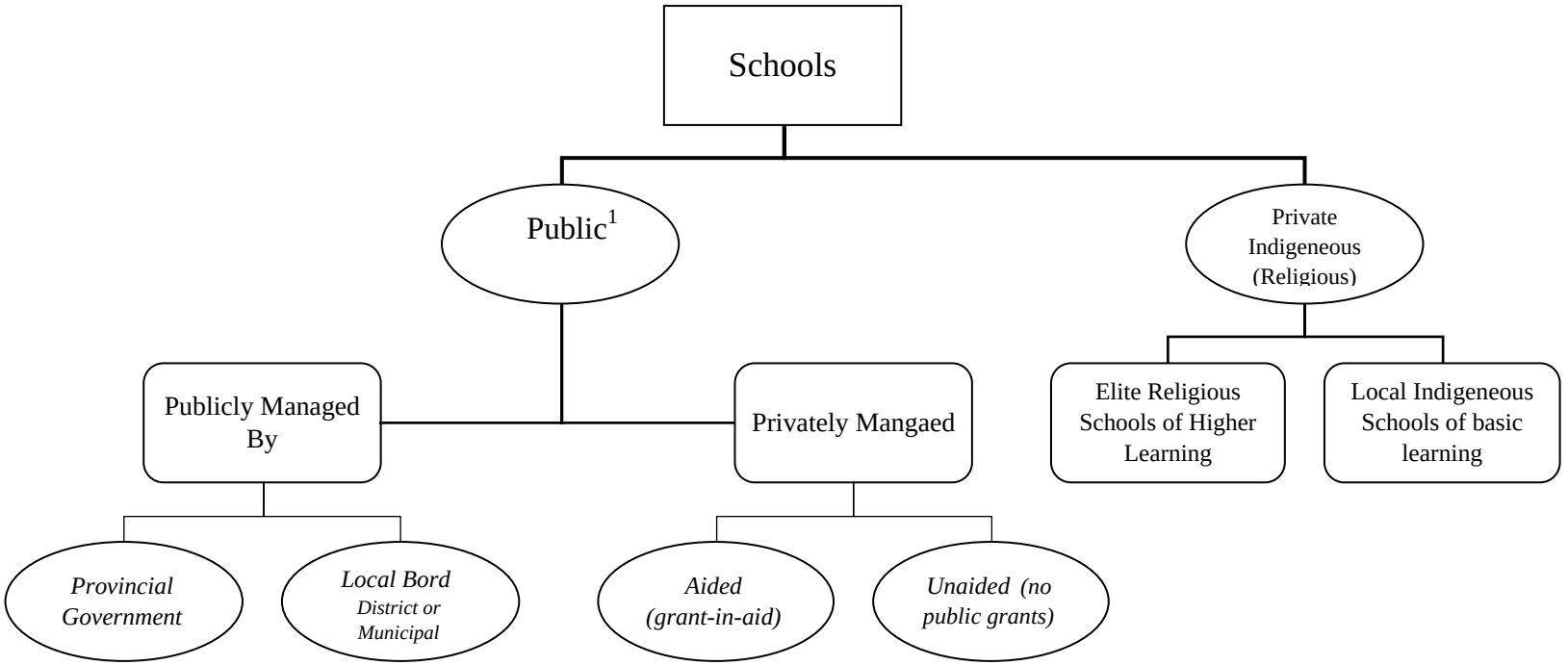
SHARP, H., AND J. RICHEY (1920): *Selections from the Educational Records of the Government of India*. ed. Calcutta.

Srinivas, M. N. (1998): *Village, Caste, Gender, and Method: Essays in Indian Social Anthropology*. Oxford University Press, New York.

Vigdor, J. (2004): "Community Composition and Collective Action: Analyzing Initial Mail Responses to the 2000 Census," *Review of Economics and Statistics*, 86(1), 303–312.

Whitehead, C. (2005): "The Historiography of British Imperial Education Policy, Part I: India," *History of Education*, 34(3), 315–329.

Figure 1: Schools by Management



[1] Public Schools established under the new state system of education formally introduced by the East India Company in 1854. All public schools were recognized by provincial education departments. In comparision, private indigeneous schools were unrecognized and often religious in nature.

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: NATIONAL EDUCATIONAL PATTERNS

	1886-87	1891-92	1896-97	1901-02	1906-07	1911-12	1916-17	% Change
Institutions per Capita[1] (Multiplied by 100,000)								
TOTAL	**57.93**	**60.99**	**65.39**	**61.43**	**67.36**	**69.01**	**78.99**	***36%***
PUBLIC:	42.97	44.16	47.26	43.51	50.29	53.39	63.50	***48%***
Colleges	0.052	0.061	0.069	0.079	0.075	0.073	0.080	***54%***
Secondary Schools	2.06	2.10	2.27	2.28	2.44	2.49	3.15	***53%***
Primary Schools	40.65	41.77	44.70	40.70	46.81	48.39	58.27	***43%***
Pupils per Capita								
TOTAL	**1.52%**	**1.66%**	**1.87%**	**1.88%**	**2.23%**	**2.66%**	**3.22%**	***111%***
PUBLIC:	1.35%	1.44%	1.63%	1.62%	1.97%	2.40%	2.95%	***118%***
Colleges	0.005%	0.007%	0.008%	0.010%	0.010%	0.014%	0.024%	***358%***
Secondary Schools	0.196%	0.204%	0.230%	0.259%	0.296%	0.362%	0.486%	***149%***
Primary Schools	1.1%	1.2%	1.4%	1.3%	1.6%	2.0%	2.4%	***108%***
Enrollment Rate								
TOTAL	**10.16%**	**11.06%**	**12.49%**	**12.54%**	**14.89%**	**17.70%**	**21.45%**	***111%***
PUBLIC:	9.03%	9.60%	10.86%	10.78%	13.11%	16.00%	19.69%	***118%***
Colleges	0.035%	0.047%	0.054%	0.064%	0.070%	0.095%	0.160%	***358%***
Secondary Schools	1.30%	1.36%	1.53%	1.73%	1.97%	2.41%	3.24%	***149%***
Primary Schools:	7.64%	8.14%	9.20%	8.88%	10.88%	13.02%	15.90%	***108%***
Madras	.	10.27%	11.56%	10.95%	12.91%	16.56%	21.97%	***114%***
Bombay	.	12.81%	13.87%	13.43%	15.17%	18.63%	22.10%	***73%***
Bengal	.	10.73%	11.94%	11.04%	13.00%	14.62%	17.07%	***59%***
United Provinces	.	2.23%	3.07%	4.08%	6.16%	7.24%	9.76%	***338%***
Punjab	.	3.17%	3.80%	3.71%	5.30%	6.96%	9.80%	***210%***
Central Provinces & Berar	.	5.72%	7.27%	7.43%	9.50%	10.95%	13.77%	***141%***

* These tables are prepared using data from the Quinquennical Reviews of Education. Bengal does not include Eastern Bengal in 1906-07 & 1911-12 because statistics for Eastern Bengal and Assam were jointly reported in those years. 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. The school-age population is defined as 15% of the total population for the enrollment rate.

TABLE 3: LITERACY IN 1911[1]

	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%	0.8%	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%**	**0.6%**	**14%**	**1.1%**	**8%**	**0.4%**	**12%**	**1.4%**	**6%**	**0.3%**	**14%**	**1.3%**	**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 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 4: 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 5: Dependent Variable - Schools per School-Age Population

	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 (Ages 5-15)

TABLE 6: Dependent Variable - Public Primary Schools per School-Age Population

	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 (Ages 5-15)

TABLE 7: Dependent Variable - Public Secondary Schools per School-Age Population

	Provincial Government	Local Board	Aided	Unaided	State Supported	Total
	(1)	(2)	(3)	(4)	(5)	(6)
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 (Ages 5-15)

TABLE 8: Dependent Variable - Primary Schools / Secondary Schools

	Provincial Government	Local Board	Aided	Unaided	State Supported	Total
	(1)	(2)	(3)	(4)	(5)	(6)
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 9: Dependent Variable - 1911 Literacy Rates

	(1)	(2)	(3)	(4)	(5)
Literacy Rate Mean	6.53%	6.53%	6.53%	6.53%	6.53%
(Literacy Rate S.D.)	(2.91)	(2.91)	(2.91)	(2.91)	(2.91)
Per 1000 children of 5 to 15					
1901 Total Schools	0.0043				
	(0.0015)***				
1901 Public Schools		0.0061			
		(0.0016)***			
1901 Private Schools			-0.0075		
			(0.0044)*		
1901 Public Primary Schools				0.0058	
				(0.0016)***	
1901 Public Seconday Schools					0.0254
					(0.0482)
Income					
Income Tax Capita	0.1984	0.2026	0.2028	0.2038	0.1988
	(0.0699)***	(0.0673)***	(0.0736)***	(0.0675)***	(0.0750)**
Land Tax Capita	0.0019	0.0014	0.0021	0.0017	0.0030
	(0.0023)	(0.0021)	(0.0026)	(0.0023)	(0.0029)
Development Variables					
Fraction Rural	-0.1561	-0.1431	-0.1673	-0.1430	-0.1691
	(0.0644)**	(0.0649)**	(0.0628)***	(0.0656)**	(0.0622)***
DensityPop per Mile	0.000020	0.000022	0.000021	0.000023	0.000021
	(0.000008)**	(0.000007)***	(0.000008)***	(0.000008)***	(0.000008)***
Social Groups	Yes	Yes	Yes	Yes	Yes
- Fraction Brahman	0.1500	0.1462	0.0988	0.1508	0.1117
	(0.0585)**	(0.0546)***	(0.0600)	(0.0560)***	(0.0667)*
Occupation Variables	Yes	Yes	Yes	Yes	Yes
- Fraction Profession	1.1906	1.2598	2.1511	1.2357	1.5700
	(0.4976)**	(0.4267)***	(0.5454)***	(0.4349)***	(0.4753)***
Constant	0.1005	0.0830	0.1183	0.0877	0.1293
	(0.1079)	(0.1054)	(0.1059)	(0.1060)	(0.1068)
Observations	83	83	83	82	82
R-squared	0.83	0.84	0.82	0.84	0.82

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. Social groups include Fraction Lower Castes, Muslim, Aboriginal Tribes and Christian, and CRFI. Occupation Variables include Fraction Agriculture, Industry and Commerce.